762 bis

NATIONAL INSTITUTE OF SCIENCES OF INDIA
Mathura Road, New Delhi-1.

No.67/S/CC/6615

21st November,1955

Subject:- Symposium on 'CONTACT CATALYSIS'.

Dear Sir,

I have the honour to inform you that the Symposium on 'Contact Catalysis' scheduled to be held at Agra from 31st December 1955 and 1st January 1956 has since been postponed and will now be held on 4th to 5th May 1956 at Calcutta.

Yours faithfully,

for Secretary

511

NATIONAL INSTITUTE OF SCIENCES OF INDIA
Mathura Road, New Delhi-1.

No. 67/S/CC/ 5875 28th August 1955

Subject:- Symposium on 'CONTACT CATALYSIS'

My dear Dr Natta

Under the auspices of the National Institute of Sciences of India a symposium on 'Contact Catalysis' will be held during the next session of Indian Science Congress at Agra, on the 31st December 1955 and 1st January, 1956. The exact time and other details will be intimated later.

The Symposium will cover the following topics:-

1. Structure of Solid Catalysts by Physico-chemical methods. (X-ray diffraction, electron diffraction, differential thermal analysis, magnetic susceptibility, etc.)

2. Surface chemistry and its relation to catalysis (Adsorption, electrode processes, etc.)

3. Techniques in catalytic reactions on solid surfaces.

4. Chemical kinetics and reaction mechanism.

5. Technology of catalysis (Catalytic reactions of Technological importance both at atmospheric and high pressures, Preparation of catalysts, etc.)

I have great pleasure in inviting you to take part in the Symposium and make it a success. I sincerely hope that your participation in the above discussion will not only enlighten the audience, but also contribute a great deal to the fulfilment of the objective for which the Symposium is being organised.

You are requested to send the titles and abstracts of your papers to be read at the Symposium not exceeding 200 words, to the Convener not later than 1st October, 1955. The manuscripts of the full papers may be submitted on the day of the Symposium for publication in a special issue of the Proceedings of National Institute of Sciences of India.

Ringraziamo e comunico di non spiacere a non poter partecipare al Congresso.

Yours sincerely,

Dr S.K.Bhattacharyya,
D.Sc.,F.R.I.C.(Lond.),F.N.I.,
Professor of Chemistry,
Indian Institute of Technology,
Kharagpur. (Convener).

October 17, 1955

Dr. S.K. Bhattacharyya
Professor of Chemistry
Indian Institute od Technolog
K H A R A G P U R - India

Dear Dr. Bhattacharyya,

I received you kind letter of August 28, concerning the "Symposium on Contact Catalysis" and I thank you very much for you appreciated invitation.

Unfortunately, I cannot take part in the Symposium and I am sorry to inform you about it.

With kindest regards,

Sincerely yours,

(Prof. G. Natta)

Karl Ziegler

Feb. 3, 1961

Mr. S. Nagaswami, Manager
Machinery Division,
Bakubhai Ambalal Private Lt
Post Box 28,
Ahmedabad, INDIA

your ref. ITL/Ce/3425
our ref. 994/lv

Dear Mr. Nagaswami,

With regard to your letter of November 1, 1960, I wish to inform you that I have forwarded it to Dr. Larcher, (Director of the Polymer Co., a consociate of Montecatini), who will answer you directly.

Sincerely,

G. Natta

BAKUBHAI AMBALAL PRIVATE LIMITED

CALICO MILLS PREMISES. POST BOX 28. AHMEDABAD. INDIA. TELEGRAMS: "EXTENSION" TELEPHONE: 51001-2-3-4-5-6

REGD. OFFICE : SHAHIBAG HOUSE. 13. WITTET ROAD. BALLARD ESTATE. BOMBAY 1. GRAMS: 'EXTENSION' PHONE: 264641

Ref: ITL/ C /3425

Ahmedabad,
November 1, 1960.

Prof. Natta,
c/o The Societa Montecatini,
Via Filippo Turati 18,
Milan,
ITALY.

994

Dear Sirs:

We are interested in the New Synthetic Fibre developed by you with particular relation to its marketing in India.

Would you please send us full particulars, samples, price indication etc.

Thanking you,

Yours faithfully,

S. Nagaswami

(S.Nagaswami)
MANAGER
Machinery Division

SN:U

REPRESENTING :

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P.B. NO. 118. KAMPALA E. AFRICA.

Jndie

Jan.24, 1966

Prof.S.K.Bhattacharyya, D.Sc.,F
Head of Chemistry Dept.,
Indian Institute of Technology,
Kharagpur (India)

our ref.20/lmv

Dear professor Bhattacharyya:

Thank you for your letter of Jan.8; I also regret I could not meet you during your visit to Europe.

The thesis by Mr.A.R.Das reached me only the day before yesterday, and I will examine it as soon as possible.

Kindest personal regards,

Giulio Natta

PAR AVION

AEROGRAMME

D.O. No. [illegible]

Dated: January [illegible] 1966

FIRST FOLD HERE

SENDER'S NAME AND ADDRESS :

Indian Institute of Technology
P. O. Kharagpur Technology
Kharagpur/S. E. Rly.

Prof. S.K. Bhattacharyya, D.Sc., F.N.I.,
Head of Chemistry Department,
Indian Institute of Technology,
Kharagpur.

Dear Dr. Maffei,

If not a total stranger I am I feel very much as a friend of Jeffery.

I have now a letter from Prof. Natta, N.I.C. Director of Politecnico Milano, Italy, in which he writes "Dr. Maffei is a very good friend of Jeffery and I know that he is very interested in the Indian Institute of Technology. Dr. Maffei has been invited by the Indian Institute of Technology to be the chairman of a session of the Conference on Organometallic Compounds as two months from September, 1966. I am sorry. Dr. Maffei will be held at Milan and I hope you will accept the invitation. I feel that Dr. Maffei is a very good friend of Jeffery and I am writing me.

Dr. Maffei, I.N.T., D.Sc., Prof. S.K. Bhattacharyya
Director,
INSTITUTO DI CHIMICA INDUSTRIALE DEL POLITECNICO
PIAZZA LEONARDO DA VINCI 32, MILANO,
ITALY.

SECOND FOLD HERE

S. K. Bhattacharyya
Director

Indian Institute of Technology
Kharagpur

Dated 8 August 1966

TELEGRAM : TECHNOLOGY, KHARAGPUR
TELEPHONES : KHARAGPUR 2481
KHARAGPUR 2481

Rs. 0.00

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR

Approved by the Postmaster General, West Bengal Circle under his letter No. MSA/Z-143/57 dt. 30-8-57

Prof. S.K.Bhattacharyya,D.Sc.,F.N.I.,
Head of Chemistry Department,

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR
India.

TELEGRAM : TECHNOLOGY, KHARAGPUR
TELEPHONES : HIJLI 446, HIJLI 464

Dated January 8, 1966.

17 JAN. 1966

20

Dear Dr Natta,

It is after a long time that I am writing a letter to you again.

I wrote to you in last July that I would be going to Europe to attend "International Conference on High Pressures" at Creusot, France, and the International Conference on "Differential Thermal Analysis" at Aberdeen, Scotland, U.K. I attended these two conferences in August and September and returned to India on the 12th September, 1965.

In your letter you stated that you would not be free till September 20th. As I could not stay ~~Europe~~ in Europe for a longer period, I could not go to your Institute and deliver my lectures. I am really sorry that I could not meet you this time also.

I am glad to learn that you have accepted our invitation to act as an examiner of the thesis submitted by Mr A.R.Das for his Ph.D. degree of this Institute. I shall be glad if you will kindly send the report on the thesis within this month, as our annual Convocation will be held in the middle of February, 1966. I am sorry for the troubles I am giving you. I hope you will not mind for it.

With my personal kindest regards,

I am,
Yours sincerely,
S.K. Bhattacharyya
(S. K. Bhattacharyya)

Dr G. Natta,N.L.,
Director,
INSTITUTO DI CHEMICA INDUSTRIALE DEL POLITECNICO
PIAZZA LEONARDO DA VINCI.32. MILANO,
ITALY.

India

July 29, 1965

Dr. S.K. Bhattacharyya
Dept. of Chemistry
Indian Institute of Technology
Kharagpur, India

our ref. 452/eg

Dear Doctor Bhattacharyya:

Thank you for your kind letter of July 19. I confirm you that I will accept the proposal to accept Mr. V.S. Rao, though there are some difficulties due to the numberless requests of this kind we receive.

With regard to your visit to my Institute, I would appreciate your postponing the dates after September 20. As a matter of fact, most of my co-workers and myself will be out of town in the first fortnight of September to attend the Prague Symposium on Macromolecular Chemistry (Aug. 28 - Sept. 5) and the Ravello Meeting (Sept. 13-18).

Looking forward to hearing from you on this matter, I send you kind regards.

G. Natta

P.S. You will certainly give a seminar on the topics you propose.

GRAMS: 'TECHNOLOGY' KHARAGPUR

DR. S. K. BHATTACHARYYA
D. Sc., F. N. I.
PROFESSOR AND HEAD OF THE DEPARTMENT

DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR, INDIA.

Personal Albanese

D. O. No. IIT/AC/SKB/0719(L)
Dated July 19, 1965.

My dear Prof. Natta,

One of my students, Mr V.S.Rao, who has just completed his postgraduate Diploma course in High Pressure Technology and Technical Gas Reactions has been selected for an Italian Government Scholarship to work in your laboratory.

Mr Rao has got brilliant academic and practical record to his credit. I learn that the Ministry of Education, Govt. of India, will be requesting you soon to admit Mr Rao to take research training in your laboratory for 8 months. I shall be glad if you will kindly admit Mr Rao as one of your postgraduate students.

This year also I shall go to France to attend the International Conference on High Pressure in the first week of August and to U.K. to attend the International Conference on Thermal Analysis in the first week of September. After these Conferences are over, I would like to go to Milan to visit your laboratories and meet you personally on the 10th and 11th September, 1965. I would like to deliver one or two lectures in the field of Catalysis and High Pressure Chemistry in your Institute. If you kindly agree to delivering lectures and also permit me to visit your laboratories, I shall be extremely grateful if you will kindly arrange for my accommodation for two days.

Rewards & rebates

I would like to leave Milan on the 11th Sept., so that I can reach here on the 12th September, 1965.

With my personal kindest regards,

I am,
Yours sincerely,
S. K. Bhattacharyya
(S. K. Bhattacharyya)

Prof. G. Natta, N.L.,
Director, Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

India

Jan.20, 1965

Dr.S.K.Bhattacharyya, Head
Dept. of Chemistry,
Indian Institute of Technology,
Kharagpur, India

our ref.44/lv

Dear Professor Bhattacharyya:

Thank you very much for your kind wishes which I kindly reciprocate.

From your letter I learn that you have already sent the thesis "Catalytic Syntheses of n-propyl and n-butyl Acrylates from Acetylene, Carbon Monoxide and n-propanol/n-butanol Under Pressure" submitted by Mr.D.P.Bhattacharyya. Actually, it has not reached me yet.
However, I hope it will arrive in due time to enable me to give you my answer within the first week of February.

Kindest personal regards.

Giulio Natta

GRAMS: 'TECHNOLOGY' KHARAGPUR

DR. S. K. BHATTACHARYYA
D. Sc., F. N. I.
PROFESSOR AND HEAD OF THE DEPARTMENT

DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR, INDIA.

No. IIT/AC/G-12/1365(A)
Dated, 13th January, 1965.

Prof. G. Natta,
Nobel Laureate,
Director, Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan,
Italy.

19 JAN 1965
44

My Dear Prof. Natta,

Kindly accept my hearty Greetings for the New Year.

May God bless you with a long, happy, peaceful and active life.

I am very glad to learn that you have accepted our invitation to act as an examiner for the thesis entitled " CATALYTIC SYNTHESES OF n-PROPYL AND n-BUTYL ACRYLATES FROM ACETYLENE, CARBON MONOXIDE AND n-PROPANOL/n- BUTANOL UNDER PRESSURE " submitted by Mr. D.P. Bhattacharyya for his Ph.D. degree of this Institute. I hope you have received the thesis by now. Mr. Bhattacharyya has done very good work. I am sure that you will find the thesis quite interesting. If possible, kindly send the report by the 1st week of February, as our convocation will be held on the 20th February, 1965.

Hope you are keeping well.

With my personal kindest regards,

Yours sincerely,

S. K. Bhattacharyya

(S. K. Bhattacharyya.)

Indie
Varie Trouve

July 8, 1964

Dr. S.K. Bhattacharyya
Dept. of Chemistry
Indian Institute of Technology
Kharagpur, India

OUR REF. 519/eg

Dear Doctor Bhattacharyya:

With regard to your kind letter of June 30, I mostly regret informing you that my Institute will be closed on August for summer holidays.

Hoping that another opportunity will arise in the future to meet you, I send you kindest regards.

G. Natta

GRAMS: 'TECHNOLOGY' KHARAGPUR

DR. S. K. BHATTACHARYYA
D. Sc., F. N. I.
PROFESSOR AND HEAD OF THE DEPARTMENT

DEPARTMENT OF CHEMISTRY
INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR, INDIA.

IIT/AC/C-4/0630 (a)

To: Prof. G. Natta, N.L.,
Director, Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan,
ITALY.

Dear Prof. Natta,

I shall go to Amsterdam to attend the Third International Congress on Catalysis to be held in Amsterdam from 20th to 25th July. After the Congress I shall go to London and other places of U.K. and stay there for about 10 days. After U.K. I propose to go to France to visit the Institute of Catalysis, Lyons, sometime during the period 6th to 9th August for one or two days. After visiting U.K. and France I would like to visit your laboratory sometime in the 2nd week of August. If you so wish I shall be glad to deliver lectures during my one or two days' stay at Milan.

With my kind regards,

Yours sincerely,

S.K. Bhattacharyya

(S.K. Bhattacharyya.)

Dated, Kharagpur,
30th June, 1964.

From
Dr. S.K. Bhattacharyya, D.Sc., F.N.I.
Hotel Vignon,
23, rue de Vignon,
Paris VIIIe.

Yours sincerely
(India)

11th July.

Dear Prof. Natta,

I hope you have arrived at Milan by now. I am sorry, I shall not be able to go to Milan to meet you again & visit your excellent Department, as I shall have to return to India soon. I have cancelled my tour to Italy and the part of Switzerland. I do, however, hope that we shall have the pleasure of meeting you & your wife again either in Milan or in India.

Hope you will kindly excuse me for the trouble I have given you in connection with my proposed visit to your place & Department.

Kindly convey my kind regards to Mrs. Natta and Prof. Nasini,

With my personal kindest regards.

I am,
Yours sincerely.
S.K. Bhattacharyya

To Prof.
G. Natta
Director, Institute of Industrial Chemistry,
Polytechnic of Milan
Milan

Verie Prezioso Indice

May 27; 1960

Prof. Dr. Bhattacharyya,
Dept. of Applied Chemistry,
Indian Institute of Techno
P.O. Kharagpur Technology,
Kharagpur (India)

your ref. No. IIT/AC/DO-SKB/429(a)
our ref. 488/lv

Dear Professor Bhattacharyya,

I apologize for the delay with which I answer your letter of April 29: this delay was due to the fact that I tried to arrange about your trip to Italy.

I am sorry to inform you that, in June, I shall be abroad to attend the I.U.P.A.C. Macromolecular Meeting.

However, if you communicate us the exact date of your arrival, my secretary will be glad to register you and your wife in a Milan hotel. A co-worker of mine will certainly accompany you and your wife in your sightseeing of this town.

With regard to your desire to visit various places of Italy, I sent you, under separate cover, two Th. Cook's booklets describing their programs for visiting Italy. I hope they will help you to arrange a detailed schedule, if you do not want to join them directly.

Sorry not to be able to help you thoroughly, I send you my best regards.

Sincerely yours,

Giulio Natta

Grams: 'Technology' Kharagpur.
Dr. S. K. BHATTACHARYYA, D.Sc., F.N.I.
Professor and Head of the
Department of Applied Chemistry.

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR

Date 29th April 1960.

Professor G. Natta,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

My dear Prof.Natta,

I consider it a great pleasure and privilege to get myself introduced through this letter to you, an outstanding chemist of the world. Though I had no opportunity of meeting you so far, I know you through your published papers in various fields of chemistry.

You will be glad to learn that I shall go to Paris, France, accompanied by my wife to attend the Second International Congress on Catalysis during July 4-9, 1960. While going to France we intend to halt at Italy for about a week to visit the wellknown Research laboratories/Institutes where active research work in the field of Pure and Applied Catalysis and other fields of Physical and Applied Chemistry is being carried out. Besides, I would like to visit some places of historical and cultural interest.

Though I widely travelled in almost all parts of Europe and U.S.A. during 1947-49 and in 1956 I have not visited Italy yet. This time I would like to avail myself of the opportunity of visiting your very wonderful and prosperous country.

I do not know anybody in Italy. I wonder if you can kindly help me in this matter. If you can kindly chalk out a programme for our visit to the various places of your country and depute some of your students or friends to act as our guides and also arrange for our stay in different places in comparatively cheaper hotels or guest houses we shall be extremely thankful and grateful. Due to strict foreign exchange control by the Government of India it will not be possible for me to carry much money and that is why we need cheaper accommodation.

....(2)

Grams: 'Technology' Kharagpur.
Dr. S. K. BHATTACHARYYA, D. Sc., F.N.I.
Professor and Head of the
Department of Applied Chemistry.

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR

Date.....

If you so desire I shall be glad to deliver a few lectures in my subject of research. We shall arrive at Italy sometime in June, the exact date of which will be intimated to you very soon.

By the by, I thank you very sincerely for kindly accepting our invitation to act as an examiner for the Ph.D. thesis of one of my students, Mr. N.D.Ganguly, who is also a Lecturer in my department. I hope you have received the thesis by now.

Hope you are doing well.

With my personal kindest regards,

I am,
Yours sincerely,
S.K. Bhattacharyya

Indie

5.2.1965

Prof. P.G. Bose
Deputy Registrar
Indian Institute of Technology
Kharagpur, West Bengal (India)

your ref. IIT/2-2/B42/95(DPB)64
our ref. 89/rl

Dear Professor Bose,

only to-day I have received the thesis submitted by Sri. D.P. Bhattacharyya. Since you desire an answer within the first week of February, I have examined it immediately and communicate you my remarks.

The main part of the work developed by the candidate consists of experimental research on the synthesis of n-propyl and n-butyl acrylates, from acetylene, carbon monoxide and alcohols, by developing the techniques already applied in a previously published paper.
Therefore the most important part of the work is of experimental character : its systematics is favourably judged.

With pleasure I noticed that the experimental part was preceded by a thermodynamic evaluation, which is in general very useful for the study of reactions of this type.

It should be interesting to operate under more anhydrous conditions to avoid certain secondary reactions, such as the formation of CO_2 and H_2 by conversion of carbon monoxide presumably with the water contained in the catalytis support; this could decrease the conversion of acetylene

./.

5.2.1965

to compounds having a higher saturation (C_2H_4 and C_3H_6) and the conversion to aldehydes, by "oxo" reaction.

The fact that the reaction is carried out in the presence of a catalyst in the heterogeneous phase, giving good yields, might find applications in the production of acrylates, by operating in a continuous manner, with a fixed-bed catalyst.

On the whole the paper is interesting.

I personally think that the work developed by Mr. Sri. D. P. Bhattacharyya is worth of Ph. D. Degree.

Kindest personal regards.

(Prof. Giulio Natta)

Feb.1, 1965

Prof.P.G.Bose,
Deputy Registrar,
Indian Institute of Technolog
Kharagpur, West Bengal (India

your ref.IIT/2-2/B42/95(DPB)64
our ref.71/lv

Dear Professor Bose:

Thank you for your letter of Jan.8, 1965. We have not received yet the thesis submitted by Sri D.P.Bhattacharyya you sent me on Jan.8. This delay is probably due to the fact that the Italian Post Offices have been particularly overloaded with work at the beginning of the New Year, also owing to strikes.

Only if the thesis reaches me in the next few days, I shall be able to send you my remarks within the first week of February as you requested.

With my kindest personal regards,

Giulio Natta

PAR AVION
AEROGRAMME

IIT/2-4 B42/95(DPB) 64
dt. 26.10.64

To
Prof. S. Nalta
Nobel Laureate,
Director,
Institute of Industrial Chemistry
Polytechnic of Milan,
Milan,
Italy.

FIRST FOLD HERE

SENDER'S NAME AND ADDRESS :

Indian Institute of Technology
P. O. Kharagpur Technology
Kharagpur, S. E. Rly

Rs. 0.05

0.50

SECOND FOLD HERE

Approved by the Postmaster General,
West Bengal Circle under his letter
No. MSA/Z-143/57 dt. 30-8-57

Indie

16 NOV 1964

802

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR, INDIA.

TELEGRAM: TECHNOLOGY, KHARAGPUR
TELEPHONES: HIJLI 446
HIJLI 464

P. G. BOSE, M.A.,
Deputy Registrar.

Dated 26th Oct. 1964.

No.IIT/2-2/B42/95(DPB)64/6276

Dear Prof. Natta,

I am extremely grateful for your kind letter dated 5th August, 1964. We are glad to note that it will be possible for you to adjudicate upon the thesis of Sri D.P.Bhattacharyya for the Ph.D. Degree of the Institute.

Under rules of the Institute, Sri Bhattacharyya will be permitted to submit his thesis for adjudication after 5th January, 1965. I shall be sending you a copy of the thesis for adjudication immediately after that date.

I thank you for the co-operation extended by you to this Institute.

With kind regards,

Yours sincerely,

(P. G. Bose.) 26/10/64

Prof. G. Natta
Nobel Laureatre,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

AIR MAIL

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR, WEST BENGAL
INDIA.

From: P. G. Bose, M.A.,
~~XXXXXXXXXXXX~~
Deputy Registrar.

No.IIT/2-2/B42/95(DPB)64
Dated, the 8.1. 1965.

To:

Prof. G. Natta, Nobel Laureate,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

29 JAN. 1965

71

Dear Sir,

I thank you for your letter dated 5.10.64 accepting our offer to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic Synthesis of Propyl and Butyl Acrylate from Acetylene, Carbon Monoxide and Propanol/Butanol under Pressune"

submitted by Sri D.P.Bhattacharyya, Associate Lecturer of this Institute, for admission to the Degree of Doctor of Philosophy (Ph.D.).

I have despatched to-day one copy of the thesis by Registered Parcel/Air Mail with the request that you would kindly examine the same and forward your report by AIR MAIL if convenient by the 1st week of February, 1965.

I also request you to kindly return the copy of the thesis by Surface Mail and the enclosed Bill for remuneration duly signed along with your report.

A copy of the Regulation for Ph.D.Degree is enclosed. It may please be noted that -

a) the candidate is normally not required to pass any written examination on a prescribed curricula of studies,

b) if the Board of Examiners report favourably on the thesis the candidate will normally be required to satisfy another Board of Examiners in a Viva-voce Examination on the thesis and in closely allied subjects of study.

A copy of the Rules for D.Sc.Degree which is the higher Doctorate Degree awarded by the Institute, is also enclosed for reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Enclo: as stated above

Yours faithfully,

8.1.65

P. G. Bose)
(~~XXXXXXXXXX~~ Chakravarty)
Deputy Registrar.

India

Oct.5, 1964

Mr.P.G.Bose, Deputy Registrar,
Indian Institute of Technology,
Kharagpur (India)

your ref.No.IIT/2-2/B42/95(DPB)64

713

Dear Mr.Bose:

With regard to your letter of Sept.25, 1964, I wish to inform you that I accept to act as a member of the Board of Examiners to adjudicate upon the thesis on "Catalytic Synthesis of Propyl and Butyl Acrylate from Acetylene, Carbon Monoxide and Propanol/Butanol under Pressure" submitted by Sri D.P.Bhattacharyya.

Therefore, at your earliest convenience, please send me a copy of the thesis.

Sincerely yours,

Giulio Natta

Nome Thumbi
India

Jan. 25, 1961

Mr.K.C.Chakravarty,
Indian Institute of Techno
Kharagpur, S.E.Rly (INDIA)

your ref.IT/Cash/FE/E-953/413

Dear Sir,

I acknowledge receipt of the Demand Draft No.015183/6/
dt. 30.11.60 for Italian Lire 12,990.00, you kindly sent to m
on January 11, 1961.

Thanking you, I send you my best regards,

Giulio Natta

Registered.

IT/Cash/FE/E-953/43
Indian Institute of Technology,
Kharagpur, S.E.Rly. (INDIA).
Dated, the 11th January, 1961.

To

Prof. G. Natta,
Director,
Instituto Chimica Industriale,
Politechnico - Piazza L da Vinci32
Milano, ITALY.

Sub:- Remuneration for Examining Ph.D. Degree thesis of Sri N.D. Ganguly.

-.-.-.-.-.-.-

Dear Sir,

In sending herewith a Demand Draft No.015183/6/7 dt. 30.11.60 for Italian Lire 12,990.00 , Twelve thousand nine hundred ninety *** on account of your remuneration for acting as a Member of the Board of Examiners for the aforesaid thesis, I am to thank you for all your help and co-operation in this connection.

I would be grateful if you would kindly acknowledge receipt of the Demand Draft.

Yours faithfully,

(K.C. Chakravarty)
Registrar.

Enclo:- One D/Draft.

Copy to:- IT/C/953 dated 11.8.60.

Confidential AIR MAIL

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR
(INDIA)

From: P. G. Bose, M.A.,
[redacted]
Deputy Registrar.

No.IIT/2-2/B42/95(DPB) 64
Dated, the 25th Sept., 1964

To : Prof. G. Natta, Nobel Laureate,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

Sir ,

I am directed to inform you that the Senate of this Institute have decided to appoint you as a member of the Board of Examiners to adjudicate upon the thesis on 'Catalytic Synthesis of Propyl and Butyl Acrylate from Acetylene, Carbon Monoxide and Propanol/Butanol Unser Pressure'

submitted by Sri D.P.Bhattacharyya, Associate Lecturer of this Institute in support of his candidature for admission to the degree of Doctor of Philosophy (Ph.D.). I am, therefore, to approach you to kindly agree to act as a member of the Board of Examiners. Under rules, each member of the Board of Examiners is paid a token honorarium of Rs.100/-.

On receipt of your acceptance of the offer I shall arrange to forward a copy of the thesis to you for adjudication.

I shall very much appreciate an early reply.

Yours faithfully,

([redacted])
(P. G. Bose)
Deputy Registrar.

Nerl
Thermion
Trusha

June 8, 1960

Dr.K.C.Chakravarty, Regis
Indian Institute of Techn
P.O.Kharagpur Technology,
Kharagpur, S.E.Rly (India

your ref.IIT/2-2/B42/95/NDG
our ref.424/lv

Dear Doctor Chakravarty,

with regard to your kind letter of April 12, 1960, I inform you that I have examined, together with Professor R.Rigamonti, the thesis on "Catalytic production of butadiene from ethyl alcohol by single stage process in fixed as well as in fluidised beds"
submitted by Shri N.D.Ganguly, for the Ph.D.Degree.

As it will appear from the herewith enclosed report, this thesis is a remarkable experimental work, and I feel that Mr.Shri N.D.Ganduly deserves the Degree of Doctor of Philosophy.

Under separate cover, I shall send you back the copy of the thesis.

With kindest regards,

G.Natta

Encl/2

INDIAN INSTITUTE OF TECHNOLOGY
P.O. KHARAGPUR TECHNOLOGY
KHARAGPUR, S. E. RLY.

No.IIT/2-2/B42/95/NDG
Dated 12th April 1960

Prof. G. Natta
Director
Institute of Industrial Chemistry
Polytechnic of Milano
Milan, Italy.

Dear Sir,

I thank you for your letter dated 22.3.60 accepting our offer to act as a member of the Board of Examiners to adjudicate upon the thesis on "Catalytic production of butadiene from ethyl alcohol by single stage process in fixed as well as in fluidised beds" submitted by Shri N.D. Ganguly, An Assistant Lecturer of this Institute for admission to the Degree of Doctor of Philosophy (Ph.D.) of this Institute. The other member of the Board of Examiners are:

i) Prof. G.M.Schwab
Director
Institute of Physical Chemistry
University of Munich
Munich, West Germany.

ii) Prof. S.K. Bhattacharyya
Head of the Department of Applied Chemistry
Indian Institute of Technology
Kharagpur.

I have despatched to-day one copy of the thesis with the request that you would kindly examine the same and forward your report if convenient by the end of May 1960. I would also request you kindly to return the copy of the thesis along with your report. Please also return the copy of enclosed Bill for remuneration duly signed along with your report.

A copy of the Ph.D. Regulation is enclosed. It may please be noted that:

a) a candidate is not normally required to pass any written examination on prescribed curriculum of studies

b) if the Board of Examiners report favourably on the thesis, the candidate will normally be required to satisfy another Board of Examiners in a Viva-voce examination on the thesis and in closely allied subjects of study.

A copy of the Rules for D.Sc. Degree which is the higher Doctorate Degree awarded by the Institute is also enclosed for your reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Yours faithfully,

(K.C. Chakravarty)
Registrar

Encls: as stated.

12 Maggio 1960

Chiar.mo Prof.Rolando Rigar
Direttore Istituto Chimica
Industriale del Politecnic
Corso Duca degli Abruzzi 2
T o r i n o

/rl

Caro Rigamonti,

La ringrazio della Sua gentile lettera del 9 u.s. e provvedo subito ad inviarLe la tesi da esaminare, insieme ai regolamenti per il giudizio.

Molti cordiali saluti.

Giulio Natta

All/1

ISTITUTO DI CHIMICA INDUSTRIALE
DEL POLITECNICO DI TORINO

IL DIRETTORE

TORINO, li 9/5/960
Corso Duca degli Abruzzi, 24
Telefono: 46 970

Egr.
Prof. Giulio Natta
Direttore
Istituto di Chimica Industriale
Politecnico di Milano

Caro Professore,

Ho ricevuto la Sua relativa alla tesi sul butadiene da alcool.

Me la mandi pure: cercherò entro il termine stabilito di leggerla e farne la relazione. Mi mandi anche i due regolamenti, per il Ph. Doctor e per il D.Sc. Degree.

Non credo, comunque, che sia il caso che Lei informi l'Indian Institut of Technology che ha passato a me il tutto, dato che essi si sono rivolti a Lei: sono anzi ben lieto di poterLe essere utile, e sbrigare una questione che Le porterebbe via troppo tempo.

Molti cordiali saluti

(Prof.R.Rigamonti)

3 maggio 1960

Chiar.mo Prof.R.Rigamonti
Direttore Istituto di Chi
Industriale del Politecni
Corso Duca degli Abruzzi
T o r i n o

ns.rif.424/eg

Caro Rigamonti,

ricevo lettera di cui allego copia, relativa ad una tesi di laurea sui bu-tadieni da alcool.

Nel caso che Le interessasse esaminare il lavoro, Le invierò subito la tesi che mi è giunta e che non ho tempo di esaminare.

Naturalmente il compenso indicato lo farò inviare a Lei.

Cordiali saluti.

G.Natta

All/

Report on the thesis on "Catalytic production of butadiene from ethyl alcohol by single stage process in fixed as well as in fluidised beds" submitted by Shri N.D.Ganguly, an Assistant Lecturer for the Ph.D. Degree.

****

The first impression I received reading this thesis is that it is the result of much, or better of an extremely great amount of, experimental work: its Author accomplished not less than 510 proofs of catalysis in fixed bed, employing 51 simple catalysts and 105 mixed ones, and at least 30 proofs in fluidised bed, with 3 mixed catalysts. He carried out the differential thermal analysis and the determination of surface area of 42 catalysts, by means of gaseous absorption measurements, following the B.E.T. method.

The description of the tests performed is precise and exhaustive, with the only exception of the preparation of the catalysts, to which the Auther devotes just a few words, without mentioning the quantitative data, such as, for instance, the concentration of the employed solutions, the temperature and the method of precipitation. In fact it is well known that the preparation method has a great importance with regards to the activity of the catalyst. Besides that, it is not clear whether the composition of the mixed catalysts must be considered as molar or in weight (this defect, however, is common with various works published on the catalysis!).

With regard to the method of analysis of the com-

./.

densed liquids, it is possible to observe that the method used to determine ethyl alcohol (esterification with phtalic anhydride) proportions the other alcohols (propyl, butyl, etc.) at the same time. However, considering that these last alcohols are present in small quantities, the error made must be trifling.

Likewise, when determining esters by means of saponification, a consumption of caustic soda takes place, also because of the Cannizzaro's reaction on the aldehydes: it is not mentioned whether the Author took it into account when calculating the amounts of the esters present.

With regards to the tests of catalysis, some of them keep us doubtful, and more precisely:

a) the tests carried out using mixed catalysts containing CaO: in fact the Author prepares the catalyst by precipitation with NH_4OH from solutions containing $Ca(NO_3)_2$ and then the precipitate is washed.
Owing to the solubility of calcium hydroxide, above all in solution with ammoniacal salts, it is possible that the composition of the finished product does not correspond to that of the starting mixture any more; on the other hand, the Author does not mention to have analysed the finished catalyst and therefore we do not know whether he has indicated the final or the starting composition.

b) the tests performed with catalysts containing reducible oxides such as CuO, NiO, Co_2O_3, Fe_2O_3: these oxides certainly change their composition and structure during the catalytic process: thus the results obtained have little meaning, because they concern the catalytic conditions which change continually.

./.

And besides, in general for all the tests, the Author does not mention whether he changed catalyst before every test or not. In fact, with regards to some catalysts, the Author writes that the catalytic activity decreases after a certain time, because of the deposit of carbon, and it may be restored by activation, by means of heating in draught. Most probably it happens the same thing for all the catalysts, and therefore it would have been better to point out whether the catalyst was the same, eventually re-activated, for the whole set of tests, of it was changed after every test.

These observations aside, the work is well done and well written, and it is also very interesting considering the results obtained.

Particularly interesting are, from a practical point of view, the tests performed with fluid catalysts which have given very good yields in butadiene with a complete transformation of the alcohol and therefore, in an industrial scale plant, they should avoid the salvage operation of ethanol.

From a scientific point of view, the differential thermal analysis and the surface area measurements are very interesting.

The Author has observed that in the case of binary or ternary mixed catalysts, the catalyst showing the highest degree of activity, usually possesses the widest surface. Besides that, the differential thermal analysis throws light on the fact that a high activity is usually shown by the catalysts which, during the heating period and a little before reaching the temperature of catalysis, undergo an

./.

endothermic (e.g. dehydration) reaction.

To conclude, the thesis submitted by Shri N.D. Ganguly, an Assistant Lecturer of your Institute appears a very interesting and well done work.

I would certainly admit him to the degree of Doctor of Philosophy of your Institute.

Varie Stranieri (India)

March 22, 1960

K.C.Chakravarty, Registrar
Indian Institute of Techno
P.O.Kharagpur Technology,
Kharagpur, S.E.Rly.
(India)

our ref.284/lv
your ref.No.IIT/2-2/B42/95/NDG

Dear Doctor Chakravarty,

thank you for your letter of March 13, and for the copy of the letter of Nov.25, 1959 which, as I formerly communicated to you, I had not received.

I shall be glad to receive a copy of the thesis on "Catalytic production of butadiene from ethyl alcohol by single stage process in fixed as well as in fluidised beds".

However, I wish to inform you that I applied myself to the study of the production of butadiene from alcohol 20 years ago, and, since then, I have not attended to the study of this problem any more, because the process of the butadiene production from butane and from butene, by-products of the petroleum industry, are more profitable.

With kind regards, I remain

Sincerely yours,

G.Natta

BY AIR MAIL

Telephone : Hijli-464
Telegram : Technology : Kharagpur.

INDIAN INSTITUTE OF TECHNOLOGY

P.O. KHARAGPUR TECHNOLOGY
KHARAGPUR, S. E. RLY.

No.IIT/2-2/E42/95/NDG
Dated 14th March 1960

To
Prof. G. Natta
Director,
Institute of Industrial Chemistry
Polytechnic of Milano,
Milan, Italy.

Dear Sir,

I am in receipt of your letter dated 3rd March 1960. I am sorry that our letter of even No.dated 25th November 1959 did not reach you. However, I am sending a copy of my letter for your perusal.

I shall be grateful if you would kindly confirm that you agree to act as a member of the Board of Examiners to adjudicate upon the thesis on "Catalytic production of butadience from ethyl alcohol by single stage process in fixed as well as in fluidised beds" submitted by Shri N.D. Ganguly, an Assistant Lecturer of the Institute.

On receipt of your acceptance of our offer, I shall arrange to forward a copy of the thesis to you for adjudication.

I shall very much appreciate an early reply.

Yours faithfully,

(K.C. Chakravarty)
Registrar

Enclo: as above.

14.3.60

Telephone : Hijli-454
Telegram : Technology : Kharagpur.

CONFIDENTIAL
BY AIR MAIL

INDIAN INSTITUTE OF TECHNOLOGY

P.O. KHARAGPUR TECHNOLOGY
KHARAGPUR, S. E. RLY.

No. IIT/2-2/B42/95/NDG Dated, the 25th February 1960

To
Prof. G. Natta,
Director, Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, ITALY.

193

Dear Sir,

91

Will you kindly refer to our letter No.IIT/2-2/B42/95/NDG dated 25th November 1959 and kindly conform that you would kindly act as a member of the Board of Examiners to adjudicate upon the thesis on "Catalytic production of butadiene from ethyl alcohol by single stage process in fixed as well as in fluidised beds" submitted by Shri N.D. Ganguly, an Asst. Lecturer of this Institute in support of his candidature for admission to the Degree of Doctor of Philosophy (Ph.D.). I quite appreciate that due to your pre-occupation, you could not write to us.

I shall very much appreciate an early reply.

Yours faithfully,

(K.C. Chakravarty)
Registrar

25.2.60

Confidential
By Air Mail

COPY

INDIAN INSTITUTE OF TECHNOLOGY
KHARAGPUR (S.E. RLY)

No.IIT/2-2/B42/95/NDG
Dated the 25th Nov. 1959

To
Prof. G. Natta,
Director,
Institute of Industrial Chemistry,
Milan, Italy

Dear Sir,

I am directed to inform you that the Academic Council of this Institute have decided to appoint you as a member of the Board of Examiners to adjudicate upon the thesis on""Catalytic production of butadience from ethyl alcohol by single stage process in fixed as well as in fluidised beds" submitted by Shri N.D. Ganguly, an Assistant Lecturer of this Institute in support of his candidature for admission to the Degree of Doctor of Philosophy (Ph.D.). I am, therefore to approach you kindly to see your way to agree to act as a member of the Board of Examiners.

The Institute will be glad to pay you a token honorarium of Rs.100/- for examinging the thesis.

On receipt of your acceptance of our offer I shall arrange to forward accopy of the thesis to you for adjudication.

I shall very much appreciate an early reply.

Yours faithfully,

Sd/- K.C. Chakravarty,

Registrar.

Varie stranieri

March 3, 1960

Mr. K. C. Chakravarty, Regist:
Indian Institute of Techn
P.O. Kharagpur Technology,
Kharagpur, S.E.Rly.
(India)

our ref. 193/lv

Dear Sir,

with regard to your letter of February 25, (No. IIT/2-2/B42/95/NDG), I inform you that I am sorry, but I never received your letter dated Nov. 25 you refer to.

I hope you will send me a copy of the above-mentioned letter, to enable me to give you the required suggestions.

With my best regards,

G. Natta

PHONE : 222211/12

SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH
SERVICE THROUGH SCIENCE

Dir/F-T/4539

Natta
Milano

XXXXXXXXXXXX
Offg. DIRECTOR
SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH
19, UNIVERSITY ROAD, DELHI-6. (INDIA).

Dated: October 4, 1961

Dr. G. Natta,
Istituto Di Chimica Industriale
Bel Politecnico,
Piazza Leonardo Da Vinci, 32,
Milano,
Italy.

817

Re: Your letter No. 758/eg dated September 26, 1961.

Dear Sir,

This is to thank you for your kind letter referred above and for your kind invitation to our Director, Dr. V.B. Chipalkatti, to visit your Labs. Our Director is at present in the United States and is expected on the continent round-about the first week of December, when I am sure, he will be very glad to call on you. However, we have forwarded your letter to him so that he may confirm the date of visit etc. with you directly.

Thanking you,

Yours faithfully,

H.R. Chipalkatti

(H.R. Chipalkatti)

SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH

Phones : 25432
28181
Grams : 'ANALYST'

19, UNIVERSITY ROAD,
DELHI-6.

Ref. No. Dir/E-T/1905

Date July 15, 1961 196
17

Centro di Studio per la Chimica Industriale,
Instituto di Chimica Industriale del Politecnico,
Piazza Leonardo da Vinci 32,
Milano,
Italy.

Dear Sir(s):

The undersigned is planning to visit Italy in the next two months with a view to study modern trends, methods and organisation of applied research in Italy in the following fields:-

i) High Polymer Chemistry and Processing
ii) Chemical Technology
iii) Industrial Organic Chemicals
iv) Fabrication of Plastic Goods.

He would like to visit your laboratories and also would like to talk to experts in your place. It will be appreciated if you could kindly let him know whether he could have the honour and pleasure of a visit to your place. He will also be grateful if you could kindly recommend to him some other names and addresses of suitable firms and institutions and also help him in arranging the visits.

Kindly note that he does not propose to stay more than two/three days in Italy.

An early reply will be highly appreciated.

Thanking you in anticipation,

Yours faithfully,

M Chipalkatti

(V.B. Chipalkatti)
Director

Vent Trouvé

September 26, 1961

Dr.V.B.Chipalkatti, Directo
Shri Ram Institute for
Industrial Research
19, University Road,
Delhi 6 (India)

our ref.758/eg

Dear Sir,

Referring to your letter of July 7th, and according to what my secretary has written to you on the 26th of July, I wish to inform you that, except for a short period ranging from October 2nd and October 8th, when I shall go to England, I intend to stay in Milan.

Therefore, whenever you happen to come to Italy, I shall be glad to meet you and to make you visit my Institute.

Sorry for answering you with some delay, I send you my best regards.

G.NATTA

July 26, 1961

Dr.V.B.Chipalkatti, Directo:
Shri Ram Institute for
Industrial Research,
19, University Road,
Delhi 6 (India)

our ref.691/lv
your ref.Dir/F-T/1905

Dear Sir,

We have received your letter concerning your visit to Italy, in the absence of Professor Natta. In fact, Prof.Natta recently underwent a surgical operation with excellent results. That is why he is compelled to spend a period of total rest until September.

On his return to work, Prof.Natta will answer you personally, with the hope to reach you still in Delhi.

With our kindest regards.

Sincerely yours,

the Secretary
to Prof.Natta

Vane Shaw.

Nov. 23, 1959

Samarendra Datta, B.Sc.(Cal.)
28, Townsend Road,
Calcutta-25 India

our ref.1149/lv

Dear Dr.Datta,

with regard to your letter of October 22, I am very sorry to inform you that no research work in the field you are interested in, is carried out in our Institute. Thus it will be impossible for us to grant you a Scholarship here. We can accept scholars just for research works either on the metal carbonyls, or on the metallorganic complexes, or on the catalytic processes.

Sorry not to be able to help you in this matter, I send you my best regards.

Prof.G.Natta

Vari Ottenieri — Indie

March 16th, 1961

Mr.A.I.Desouza
Asst.Editor, Plastics
Progress in India
Sandhurst Bridge
Bombay 7 (India)

our ref.150/eg

Dear Mr.Desouza,

With regard to your kind letter of February 24, I wish to inform you that the paper surveying the plastics industry in Italy, will be sent to you directly by Montecatini.

With my kindest regards.

G.Ratta

Plastics
PROGRESS in INDIA

CALCUTTA

Ref. 2/MR/1960

Prof. Giulio Natta,
Institute di Chimica Industriale
Pol Politecnico,
Piazza Leonardo da Vinci 32,
Milano,
ITALY.

Dear Prof. Natta:

May I draw your attention to your letter of 23rd September, 1960 advising us that you were preparing a paper surveying the plastics industry of your delightful country. I have been awaiting its arrival with pleasurable anticipation. I hope it will be ready by now and you will be able to forward it to us shortly, along with a number of photographs.

With kind regards,

Yours sincerely,

A.K. [illegible]
Asst. Editor
PLASTICS PROGRESS

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(CARWARE)

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for Modern Industrial
Applications of PLASTICS

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Prof. Giulio Natta,

Instituto di Chimica Industriale

Del Politecnico,

Plazza Leonardo da Vinci 32,

Milano, Italy.

Third fold here

Sender's name and address:-

PLASTICS PROGRESS IN INDIA

Chowpatti Chambers,

Sandhurst Bridge, Bombay 7.

attention!

MILANO
23-24
28-11
1961
APR. DISTRIBUZIONE

First fold here

Second fold here

Codes: A. B. C. Bentleys

Plastics
PROGRESS IN INDIA

Telephones: 27091-92-93
Grams: GARWARECAR

CHOWPATTY CHAMBERS,
SANDHURST BRIDGE,
BOMBAY 7.

Ref. A/IR/1895

Date 24th February, '61

Prof. Giulio Natta,
Instituto di Chimica Industriale
Del Politecnico,
Plazza Leonardo da Vinci 32,
Milano,
ITALY.

Dear Prof: Natta:

May I draw your attention to your letter of 23rd September, 1960 advising us that you were preparing a paper surveying the plastics industry of your delightful country. I have been awaiting its arrival with pleasurable anticipation. I hope it will be ready by now and you will be able to forward it to us shortly, along with a number of photographs.

With kind regards,

Yours sincerely,

A.I. DESOUZA
Asst. Editor
PLASTICS PROGRESS

Codes: A. B. C. Bentleys

Telephones: 27091-92-93
Grams: GARWARECAR

Plastics
PROGRESS IN INDIA

CHOWPATTY CHAMBERS,
SANDHURST BRIDGE,
BOMBAY 7.

devoted to better understanding of plastics and their uses

Ref: A/LR/1307

28th September, 1960.

Prof. Giulio Natta,
Istituto di Chima Industriale
Del Politecnico,
Plazza Leonardo Da Vinci,
32, Milano,
ITALY.

Dear Mr. Natta:

I was extremely happy to receive your letter of 23rd instant advising us that you are preparing a paper for publication in our magazine as requested by us.

(~~pubblicare~~ ~~pubblicare~~ a Ussarenti in Vi)

Whilst preparing this paper, I would like you to give me a brief history of the plastics industry in Italy, it's present state and its future programme. Photographs of end products, machinery and raw material plants in your country may also be included.

Once again I wish to tell you that it is extremely kind of you to agree to prepare a paper as requested by us.

Thanking you,

Yours sincerely,

A.I. DESOUZA,
Asst. Editor,
PLASTICS PROGRESS

Perlome un Ussarenti

narendra Datta B. Sc. (Cal.)

Phone No.: 47-1022
28, TOWNSEND ROAD,
CALCUTTA-25.

114

[illegible]

Samarendra Datta

Rispondere che presso il nostro Istituto
non sono in corso ricerche nel campo ~~di~~
~~da~~ che interessa il Datta.
Possiamo solo ~~[illegible]~~ [illegible]
[illegible]
[illegible] Korganici
[illegible]
precisi

Codes: A. B. C. Bentleys

Telephones: 27091-92-93
Grams: GARWARECAR

Plastics
PROGRESS IN INDIA

CHOWPATTY CHAMBERS,
SANDHURST BRIDGE,
BOMBAY 7.

devoted to better understanding of plastics and their uses

Ref: A/C/1119

September 1, 1960

Milano Polytechnic,
Milano,
ITALY

Dear Sirs:

We approached the Italian Embassy in India for statistical information about the production of plastics raw material and machinery in your country as well as a brief survey of developments in the past few years and the programme for the future. They forwarded us a copy of 'Italy Presents' in which the information contained is more in the nature of publicity than factual progress in your country. We are interested in the information aforementioned because we are publishing a series of articles on the progress of the plastics industry in the various countries. We are prompted to take this decision to promote the already existing trade and friendly relations between our two countries.

We hope you will be able to submit to us a paper giving statistical information and a brief survey of the plastics industry together with photographs of end products.

If we can be of service to you in any manner, at this end, we shall be only too pleased to do so.

Yours sincerely,

A.I. Desouza
Asst. Editor
PLASTICS PROGRESS

P.S. We are forwarding you under separate cover a copy of our August issue.

Sig.ne Cavallaro
per favore,
può ricercare
il fascicolo di
Agosto di Plastics Progress in India? Grazie
Rhemme

Phone : 34-1438

EAST INDIA TRADING COMPANY.

165, LOWER CHITPORE ROAD, CALCUTTA-1.

Vari Stremieri

Our Ref. .....

Your Ref. .....

Date October 17, 1961.

Prof. G. Natta
Institute Di Chimica Industriale
Del Politecnico
Plazza Leonardo Da Vinci, 32
Milano (Italy)

Dear Prof. Natta:

Sub:- Manufacture of Catalysts in India

Thank you so much for your letter No.759/eg of 26th September, 1961. It is really nice of you to have written to Messrs. Montecatini - Large Donegani 1, 2 Milano - Italy, to find out the possibilities of collaborating with us for manufacture of Catalysts in India.

We have already received a letter from Messrs. Montecatini and have also written to them. We are sure that with your assistance we will be able to get the collaboration of Montecatini for this manufacture in India.

With best regards,

Sincerely yours,

(T.R.Parek)
Partner.

India

September 23, 1960

Mr.A.I.Desouza, Asst.Editor
Plastics Progress in India
Chowpatty Chambers
Sandhurst Bridge
B O M B A Y 7 - Ihdia

The Director -

Our Ref.885/GN/rl

Dear Mr.Desouza,

your letter dated September 1 (Ref.A/G/1119) in which you asked for a paper giving statistical information on the plastics industry in Italy, has been forwarded to me. I wish to inform you that we are preparing such papers and we shall send it to you as soon as possible.

With best regards,

Sincerely yours,

(Prof.Giulio NATTA)

Paul Thauer

September 26, 19

Mr K.R.Parakh, partener
East India Trading Compa
165, Lower Chitpore Road
Calcutta 1 (India)

our ref.759/eg

Dear Mr.Parakh,

Subject : - Manufacture of Catalysts in India

Please, excuse my delay in answering your letter of June 29th. I have been away from Milan for a long period because of my state of health and I have resumed my job since a very few days.

With regard to your wish to start the manufacture of Catalysts in India, I have forwarded your letter to : Società Montecatini - Largo Donegani 1,2 Milano - Italy - which will contact you as soon as possible.

With best regards.

G.NATTA

Phone : 34-1488

EAST INDIA TRADING COMPANY.

165, LOWER CHITPORE ROAD, CALCUTTA-1.

Our Ref. ..... Your Ref. .....

Date June 29, 1961.

Prof. Ing. Giulio Natta,
Via M. Pagano. 54,
Milano : Italy.

Dear Prof.Natta,

Subject :- Manufacture of Catalysts in India.

We have been planning to start the manufacture of Catalysts in India,particularly the type of Catalysts required for Rubber and Plastic industries. These Catalysts, or as a matter of fact, any Catalyst are not manufactured in India and the country's entire requirement is met from imports.

The manufacture of Catalysts,as you know,is a highly technical and specialised job and we would very much appreciate to have your guidance in this respect. You being the leading authority on the manufacture of Catalysts required for Rubber and Plastic industries, you may perhaps put us in contact with such parties who are manufacturing these Catalysts and who might be interested in collaborating with us with an idea to start their manufacture in India. The capacity that we have in mind is 5 tons per day. In such a collaboration we would expect our foreign collaborator to give us the 'know-how' for manufacture of Catalysts for a payment of royalty at 7½%. We would also expect them to do the designing, engineering and building the mill for us.

We are sorry to trouble you by writing this letter, but we are sure that you would be able to help us.

Thanking you,

Yours faithfully,
EAST INDIA TRADING COMPANY.

K R Parakh

(K.R. Parakh)
P A R T N E R.

ISTITUTO DI CHIMICA INDUSTRIALE
DEL POLITECNICO DI TORINO

TORINO, il 17.9.958
Castello del Valentino
Telefono 62.470

18 SET 1958
R 1904

Egr.
Prof. G. Natta
Istituto di Chimica Industriale
Politecnico di

T O R I N O

Caro Professore,

Ho letto la lettera che Ella ha ricevuto dall'India e che Le ritorno allegata.

Io non ho avuto occasione di interessarmi oltre dell'argomento e penso quindi che la cosa migliore sia rispondere nel senso da Lei indicato.

Molti cordiali saluti

(Prof.R.Rigamonti)

Preferisce 19
rispondere

Fud 3

September 25, 1958

E.C. Govindan Asan & Sons
Post Box, 113

Rif.n.1032/el

QUILON (S.India)

Gentlemen,

reference is made to your letter dated August 28, concerning the Patent n. 476.540 of Prof. Rigamonti and mine.

I wish you to know that we have carried out on such a matter only laboratory researches. We did not mind the further developments and applications of such a process, since we did not dispose in Italy of raw material.

Therefore, we regret having to inform you that we are not in a position to supply you with any relevant information on that subject.

Best regards,

Prof.G.Natta

E.C. GOVINDAN ASAN & Sons

Manufacturers & Exporters of Cashewkernels & Cashew Shell Liquid & Importers of Raw Cashewnuts

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PHONE { OFFICE: 87.(WITH FACTORY EXTENSION) RES: 42.
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& SECOND PHRASE & PRIVATE

POST BOX NO. 113
QUILON
(S. INDIA)

18th August 1958.

Messrs. Guilio Natta in Milan,
and Reando Rigamenti in Turin,
(Patent holders of Industrial Invention (No.476540)
ITALIAN REPUBLIC.

Gentlemen,

Sub: Latest methods and equipments ~~for~~ ~~xxxxx~~ for ~~xxxx~~ the separation of cashew-nut kernel, shel and shell liquid economically and continuousely

We have received a leaflet published by the Central office for Patents and models, Ministry of Industries and Commerce, Italian Republic, of th subject "A METHOD OF SEPARATING OF THE SHELL OIL FROM THE KERNEL OF THE CASHEW NUT SEED".

We wish to go further into the matter and are now addressing your good--selves as the inventers of the above patent process cycle. We are reall interested in bringing down a complete processing equipment which makes it possible to extract separately the shell oil and the non-polluted kernel --~~xxxxx~~ this processing cycle should permits of obtaining the majority of wholes(kernels), and also should permits of an excellent ~~xx~~ separation of the shells from the kernel and from the shell oil, without any adultration to the kernel. As we are manufactures and exporters of cashew kernels and shell liquid we are not concerned with the recovery o the cashew kernel oil. Care should be given mainly to the isolation of maximum sound cashew kernel wholes. Extraction of shell liquid is only secondary imoprtance to it.

We would like you to evolve an economical trouble-free continuous or batch type process uquipment for the ~~xxxx~~ above-mentioned process, of average capacity of 10 tons of raw nuts per day of eight hours. Please also inform us the quantity of whole and broken kernels obtained from a ~~xxxxx~~ known quantity of raw cashewnuts, pre-treatment equipments (mechanical treatment for scraping, sanding or any other suitable method which produce a slight surface abration of the seed with partial removel of the outer skin of waxy appearence), flow-sheet, and working charges a

We would also request you to let us have any other details necessary to make us fully informed of all side of working, the practical and economi side. If you are not in a position to help us regarding the supply of equipments, please advise us the name and address of the manufacturer or party concerned whom we have to write on this matter. In the mean time please send us the latest publications regarding the cashew industry -- --recovery, purification and utilization of cashew kernels and shell lic

Thanking you in advance and requesting you for your kind attention and early compliance.

Yours very truly,

Vante Il.

Champoluc, XXXXX 7 settembre 1958

Egr. Sig. Prof. Rigamonti
Istituto Chimica Ind.le
Politecnico di Torino.

/mb

Caro Rigamonti,

ricevo dall'India una lettera che Le trasmetto in visione.

Non so se ha avuto occasione di occuparsi ancora del problema e se aveva proseguito nello sviluppare i concetti indicati nel nostro brevetto.

Penserei di rispondere ai signori indiani che abbiamo svolto solo delle ricerche di laboratorio e che non ci siamo occupati dell'ulteriore sviluppo in quanto in Italia non si disponeva della materia prima.

Nel caso però che Lei pensasse di aggiungere qualche cosa d'altro, me lo dica oppure risponda Lei direttamente. Qualora Le fosse scomodo scrivere direttamente in inglese, mi mandi pure le Sue osservazioni e risponderò io stesso dato che ho una segretaria che conosce bene l'inglese.

Cordiali saluti.

G. Natta

All/I

Confidential

July 2, 1965

Prof.S.L.Kapur,
National Chemical Laboratory,
Poona 8 (India)

our ref.384/lv

Dear Professor Kapur:

This is in reply to your letter of June 15. I mostly regret informing you that I do not see any possibility to give you hospitality for one week in Milan, also because many of my co-workers and I, on that period, shall participate in Congresses abroad.

However, if your stay in Milan can be limited to a couple of days, I might try to find some way to meet your living expenses.

Kind regards,

Giulio Natta

Telephone : 56451-52-53
Gram : "CHEMISTRY"

NATIONAL CHEMICAL LABORATORY,
POONA-8.

No. 25(5-SIK)-PP-

June 15, 1965.

Dr.S.L.Kapur.

Dear Prof.Natta,

You were kind enough to invite me in 1962 (Your Ref.No.189/iv dated March 8, 1962) to visit your Institute and some of the polymer industries of Montecatini in your country. This visit was highly beneficial and I have many happy memories of my meeting with you.

I shall be attending the forthcoming International Symposium on Macromolecules at Prague in the first week of September 1965. I would very much like to take this opportunity to extend my visit from Prague to your country and acquaint myself with the further work at your laboratories and also pay my personal respects to you and Mrs.Natta, but the local foreign exchange restrictions come in the way. At the last time you had kindly arranged not only to provide for my expenses during my stay in your country but even the return travel expenses from India to your country were met by your Institute. I wonder if some way can be found again to meet only my expenses within your country for a stay of about one week in September 1965.

A formal invitation on the lines sent by you (more than three years ago) will enable me to get the necessary approval of my government particularly when no expenditure is involved during my stay in your country.

With kind regards to you and Mrs.Natta.

Yours sincerely,

(S.L.Kapur)

Prof.G.Natta,
Insituto Di Chimica
Industiale del Politecnico,
Piazza Leonardo D Vinci 32,
Milano
Italy.

Vene Vrouwen India

March 8, 1962

Dr.S.L.Kapur,
National Chemical Laboratory,
Poona 8 (India)

our ref.189/lv

Dear Doctor Kapur:

I would like to inform you that a National Centre of Macromolecular Chemistry, sponsored by the Italian Research National Council, was originated at this Institute as well as in other research Institutes. The purpose is to co-ordinate research studies of various Italian investigators in macromolecular chemistry.

Since this programme enables us to invite outstanding scientists in the field of macromolecular chemistry, I would therefore greatly appreciate your consideration in our invitation to you to visit this Institute, and possibly to deliver a lecture on a subject of your choice.

I would also like to discuss with you the possibility of starting a programme by which Indian young chemists could come over to our Institute for some short research assignments. For this we would like to consider applications from some students from your country. This programme, sponsored by the Italian Research National Council would enable us to accept people at our own expenses. We would of course provide these awards to truly worthy chemists, and concerning this particular matter, I would like to discuss it with you.

I wish to inform you that in the case you should accept my invitation to come to Milan, all your travel expenses as well as any other relevant expenses incurred during your stay here will be provided by my Institute.

Sincerely yours,

G.Natta

Vari Premier

July 24, 1962

Prof.S.L.Kapur, Assistant Director
National Chemical Laboratory,
Poona-8 (India)

your ref.437(3)-PP/465 8-1250
our ref.586/lv

Dear Professor Kapur:

Thank you for your letter of July 3. I am very pleased that you have been satisfied with your visit to Italy. I am also very glad I met you in Milan: I only regret I could not find more time to spend with you for useful discussions.

With regard to the production of the ethylene low polymers, their reactivity in the alkylation depends on the nature of the end groups. Polymers containing a vinylidene-type unsaturated end group react more easily than those containing a vinyl end group. Those containing an internal double bond can be even less reactive. This can be the reason why you found some difficulties in the alkylation of benzene with the low polymers of ethylene.

Hoping that another opportunity will arise in the near future to meet you again, I send you my kindest regards.

Giulio Natta

Telephone : 6461-62
Gram : "CHEMISTRY"

NATIONAL CHEMICAL LABORATORY,
POONA-8.

No.437(3)-PP/445 P 1250

July 3, 1962.

Dr.S.L.Kapur,
Assistant Director

Dear Prof.Natta,

I am writing this to express my sincere thanks and appreciation of the kind courtesy and very helpful discussions I had with you and your colleagues during my visit to your Institute early last month. I am sure this contact will prove very helpful in persuing my scientific work in India. My subsequent visits to the manufacturing plants of Montecatini at Ferrara and Terni were indeed very profitable. As suggested by you I am sending herewith experimental details of our work on the preparation of hexamers of ethylene for your examination and valuable suggestions.

Please convey my thanks and respects to Mrs.Natta for the beautiful time I spent at your residence and the stimulating discussions during this brief meeting are quite fresh in my mind. I hope we shall have soon an opportunity to see you and Mrs. Natta in India. I am also sure my this visit so kindly arranged by you will be a forerunner of several meetings in future. Please do let me know if I can be of any help to you or Mrs.Natta in India.

Please permit me once again to thank you most sincerely for your kind invitation and excellent treatment given to me during my stay in Italy.

Mrs.Kapur joins me in sending best wishes and regards to you and Mrs.Natta.

Yours sincerely,

(S.L.Kapur)

Prof. Giulio Natta,
Istituto Di Chimica Industiale
Del Politecnico,
Piazza Leonardo D Vinci,32
Milano
Italy

We have tried polymerisation of ethylene with $AlCl_3$ as catalyst and (1) Ethylene dichloride (EDC) (2) Ethyl chloride as cocatlyst-solvent.

With a 5% catalyst solution of $AlCl_3$ in EDC and using a feed rate of 5 litres/hr/~~libre~~ litre of catalyst solution, at 30°C, the yield of liquid polymers is 5-10 gms/100cc of catalyst solution in 24 hours. After reaction the catalyst is decomposed with water, the solvent EDC removed by distillation and the polymer redistilled to separate the olefins in the required C_{12}-C_{18} range boiling between 40° - 100°C/4 mm, which is about 60% of the total polymers. The residue is waxy. The liquid polymers are lightly coloured yellow to brown.

The total olefins content of the polymer was determined by absorbing in a sulfonating mixture of P_2O5(30%) and 95% H_2SO_4 (70%), and was above 90%. The bromine number ofthe polymer expressed as grams free halogen per 100 gms substance, was between 90-110, compared to the value of 95 for pure dodecene, and indicated that the polymer contained roughly one double bond per molecule. On oxidation with $KMnO_4$, dicarboxylic acids also were shown up among the products (paper chromatography) which pointed to the presence of some molecules with two double bonds also. The I.R.spectra uniformly showed absorption mainly at 850 cm^{-1} (internal double bond C=CH-) and very little absorption at 910 or 999 for vinyl.

The olefins in the C_{12} - C_{18} range were used for alkylation of benzene taken in excess with catalytic amounts of $AlCl_3$ at 55°C. But even after 2-3 hours, the olefins were almost entirely recovered unreacted. It was thought that traces of peroxides in the olefins may inhibit the alkylation and so the olefins were percolated through alumina before ~~examining~~ running into the alkylation reaction mixture but still no yield of alkyl benzene was indicated.

However, the polymers from ethyl chloride-$AlCl_3$ system definitely formed some alkyl benzene 5-10%yield) which were detected in the I.R. at 695 cm^{-1} (phenyl) 760cm^{-1} (five adjacent C-H) and the monosubstitution pattern at 1600-2000 cm^{-1}. With the ethyl chloride system it was possible to increase the feed rate of ethylene to 100 litres per hour for a 1.5 litre catalyst solution (5-7 % $AlCl_3$) and get yield of 5-10 gms. liquid polymers/100cc catalyst solution in about 2 hours at 5°C. Here the catalyst was decomposed with isopropyl alcohol- water cooled to 0°C and the polymer isolated after distilling away the ethyl chloride.

Incl
Chemen
India

May 15, 1962

Dr.S.L.Kapur,
Assistant Director,
National Chemical Laboratory,
Poona - 8 (India)

your ref.No.437(3)-PP/366-P-784
our ref. 388/lv

Dear Doctor Kapur:

I was glad to learn from your letter of May 2, that you will stay in Milan from June 5 to June 9, 1962.

You have been registered at the Hotel Touring, Via Tarchetti 2, Milan.

On your arrival here, please call me up at the Institute (telephone No. 235.181); if I am not present, you can speak with my secretary, who speaks English.

Looking forward to meeting you, I send you my kindest regards.

Sincerely yours,

Giulio Natta

Telephone : 6451-52
Gram : "CHEMNERY"

NATIONAL CHEMICAL LABORATORY,
POONA-8.

No.437(3)-PP/366-P-784

May 2, 1962

Dr.S.L.Kapur,
Assistant Director

8 MAG 1962
388

2 copie

Dear Prof.Natta,

Thank you for your very kind letter No.306/iv of April 12, 1962, wherein you have suggested me to come to your institute during the period- June 3 to June 9, 1962. Accordingly I have made some necessary changes in my itinerary to visits to other countries and now expect to reach Milano from W.Germany or Switzerland by plane on ~~4th or~~ 5th of June. I shall write sufficiently in advance about the flight number, time and date of my arrival at Milano.

I presume that after spending two to four days at your institute and Head Office of Montecatini in Milano, I will be able to visit Montecatini's research laboratories at Novara, research and production centre at Ferrara and Terni. I hope as per this programme, I will be able to board a plane leaving for India on about 15th of June.

Looking forward to meeting you.

Please accept my sincerest regards,

Very sincerely yours,

(S.L.Kapur)

Prof.G.Natta,
Instituto Di Chimica,
Institrale Del Politechnico,
Piazza Learnardo Vinci 32,
Milano
Italy.

c.c. to: Dr.M.Taramasso,
187/48 Chanakya Puri,
New Delhi

conferma
(Segretaria) Alberghetti
per

Visa Stato
India

April 12, 1962

Prof.S.L.Kapur, Assistant Direc
National Chemical Laboratory,
POONA-3 (India)

your ref.No.437(3)-PP/296
P+646

our ref.306/lv

Dear Professor Kapur:

Thank you for your kind letter of April 7. I am very glad that you can accept my invitation to come to Milan. Considering your itinerary and my own engagements, I would suggest you to come here during the period from June 3 to June 9.
In fact, before June 3 I shall be in Naples for the meeting of the Italian Chemical Society, and after June 9 I shall be out of town owing to previous engagements. Please, let me know whether this period suits you.

Looking forward to meeting you, I send you my kindest regards.

Very truly yours,

G.Natta

COPIA

NATIONAL CHEMICAL LABORATORY
POONA-8

No.437(3)-PP/226
P-646

April 7, 1962

Dr.S.L.Kapur
Assistant Director

ns.rif.306/

Dear Prof.Natta,

Kindly permit me to thank you for your kind letter No.189/lv of March 8, 1962. I deeply appreciate your invitation to visit your institute.

I am indeed much pleased to accept your kind invitation and hope to visit you towards the beginning of June 1962, as per rough itinerary given below. I, however, hope to meet you (May 14-18) at the International Rubber Conference in Paris, where you will be delivering a popular lecture. I shall shortly confirm this itinerary after I have received a formal approval of my Government.

May	8-12	..	W.Germany
May	13-20	..	France
May	21-29	..	U.K.
May	30- onwards	..	Italy

You will be glad to learn that Prof.H.F.Mark is visiting our Laboratory during 25th-28th April 1962.

Please do let me know if I can be of any service to you.

With kind regards,

Yours sincerely,

(S.L.Kapur)

Prof.G.Natta,
Instituto di Chimica Industriale
del Politecnico,
Piazza Leonardo Vinci, 32
MILANO, Italy

Telephone : 6451-52
Telegram : "CHEMISTRY"

NATIONAL CHEMICAL LABORATORY,
POONA-8.

No.437(3)-PP/ 296
P-646

April 7, 1962.

Dr.S.L.Kapur,
Assistant Director

Dear Prof.Natta,

Kindly permit me to thank you for your kind letter No.189/iv of March 8, 1962. I deeply appreciate your invitation to visit your institute.

I am indeed much pleased to accept your kind invitation and hope to visit you towards the beginning of June 1962, as per rough itinerary given below. I, however, hope to meet you (May 14-18) at the International Rubber Conference in Paris, where you will be delivering a popular lecture. I shall shortly confirm this itinerary after I have received a formal approval of my Government.

May 8-12	..	W.Germany
May 13-20	..	France
May 21-29	..	U.K.
May 30- onwards	..	Italy

You will be glad to learn that Prof.H.F.Mark is visiting our Laboratory during 25th-28th April 1962.

Please do let me know if I can be of any service to you.

With kind regards,

Yours sincerely,

(S.L.Kapur)

3-9/6

Prof.G.Natta,
Instituto Di Chimica Industriale
Del Politechnico,
Piazza Leonardo Vinci, 32,
MILANO, Italy.

Veil Vraunen India

March 8, 1962

Dr.S.L.Kapur,
National Chemical Laboratory,
Poona 8 (India)

our ref.189/lv

Dear Doctor Kapur:

I would like to inform you that a National Centre of Macromolecular Chemistry, sponsored by the Italian Research National Council, was originated at this Institute as well as in other research Institutes. The purpose is to co-ordinate research studies of various Italian investigators in macromolecular chemistry.

Since this programme enables us to invite outstanding scientists in the field of macromolecular chemistry, I would therefore greatly appreciate your consideration in our invitation to you to visit this Institute, and possibly to deliver a lecture on a subject of your choice.

I would also like to discuss with you the possibility of starting a programme by which Indian young chemists could come over to our Institute for some short research assignments. For this we would like to consider applications from some students from your country. This programme, sponsored by the Italian Research National Council would enable us to accept people at our own expenses. We would of course provide these awards to truly worthy chemists, and concerning this particular matter, I would like to discuss it with you.

I wish to inform you that in the case you should accept my invitation to come to Milan, all your travel expenses as well as any other relevant expenses incurred during your stay here will be provided by my Institute.

Sincerely yours,

G.Natta

Thodis

February 26, 1958

Dr. S.L.KAPUR
Assistant Director
Plastics and Polymers
National Chemical Laboratory
POONA-8 (India)

Ref.No.208/rl

Dear Dr.Kapur,

please excuse my delay in answering your letter of January 29 (437(3)-PP/35 P-190), concerning your next visit to Europ

I have inquired about the possibility to let you visit som manufacturers in the field of moulding powders and adhesives, and I am glad to inform you that you will be permitted to visit the Labora tories of the Plastics Research Institute of Montecatini Company, in Castellanza, near Milano. Of course, I shall be glad to show to you our Laboratories at the Milan Polytechnic.

Please let me know the possible date of your visit to Mila I too shall attend the Nottingham Meeting on Macromolecules, and I think that a period before this Meeting will be suitable for your visit.

With best regards.

Yours sincerely,

G.Natta

Under Certificate of Posting

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Prof. G. Natta,
Istituto Di Chimica Industriale
Del Politechnico,
Plazza Leonardo Da Vinci, 32
MILANO

ITALY

CORR - 66

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Second fold here

Third fold here

Sender's name and address :—

THE DIRECTOR,
NATIONAL CHEMICAL LABORATORY,
POONA-8.

To open cut here

MONTECATINI
SOCIETÀ GENERALE PER L'INDUSTRIA MINERARIA E CHIMICA
ANONIMA - CAPITALE VERSATO L. 100.000.000.000
MILANO

SETTORE RESINE

MILANO (1/34) 13 febbraio 1958.
Via F. Turati, 18

Preg.mo Signore
Prof. Giulio Natta
Istituto di Chimica Industriale
Politecnico di
Milano.

Oggetto:

Vs. Ns

C.p.c. : Ing. Orsoni - Sede.
C.p.c. : Direzione Fabbrica di Castellanza.
C.p.c. : Direzione I.R.A.R. - Castellanza.

Egregio Professore,

il Sig. Ing. Giustiniani ci ha fatto avere il suo benestare per la visita del Dr. Kapur, del Plastics and Polymers - National Chemical Laboratory di Poona (India), a Castellanza limitatamente ai Laboratori del nostro Istituto di Ricerche.

Distinti saluti.

" SETTORE RESINE "

Gr/mb

C. C. postale 3/3711 - Cam. di Comm. 524 - Casella postale 3596 - Telefoni 6333 - 6334
Telefoni interurbani chiedere GABBRO-MILANO - Telegrammi GABBRORESINE

MOD. SERE 2 (A4) - 3000 - 6.57

NATIONAL CHEMICAL LABORATORY

POONA-8 (INDIA).
January 29, 1958.

No:437(3)-PP/35 P-190

30

From

Dr. S.L. Kapur,
M.Sc.,M.S.,Ph.D.,
Assistant Director,
Plastics and Polymers.

To

Prof. G. Natta,
Istituto Di Chimica Industriale
Del Politechnico,
Plazza Leonardo Da Vinci, 32
MILANO,
ITALY.

Dear Prof. Natta,

I propose to attend the Nottingham (U.K.) meeting of Makromolecules, to be held from July 21,1958, under the Chairmanship of Prof. H.W. Melville, F.R.S. On my way to the U.K. or on my return I would like to visit your Laboratory and a few manufacturers in the field of moulding powders and adhesives in your country. I am particularly interested in acquainting myself with your inspiring work on iso-tactic polymers. I will appreciate knowing if it would be convenient to visit your Laboratory before or after this U.K. meeting. I hope that 2-3 days stay in your country will be sufficient and it will be possible for you to introduce and help me in arranging visits to a few manufacturing concerns.

With kind regards,

Yours sincerely,

(S.L. Kapur)

Wonderful!!

5 Febbraio 1958

Egr.Ing.B.ORSONI
Direttore S.E.PES.
Società Montecatini

S e d e

Rif.216/rl

Egregio Ingegnere,

ricevo una lettera dal Dr.Kapur, del Plastics and Polymers - National Chemical Laboratory di Poona (India), di cui Le unisco copia.

Poichè credo che sia nostro interesse accogliere cortesemente le persone che vengono da paesi sottosviluppati come l'India, La vorrei pregare di dirmi se è possinile concedere al Dr.Kapur di visitare il Laboratorio di Castellanza oppure il Laboratorio Prove Materie Plastiche di Ferrara, escludendo la visita agli impianti di produzione.

Cordiali saluti.

G.Natta

All/

Statt Ven

October 2nd, 1957

Mr. S.L. KAPUR
Assistant Director Plastics & Polymer
National Chemical Laboratory
POONA 8 (India)

Nº 1338/gg

Dear Sir,

Excuse me, if I reply only now to your letter of 5th Aprile 1957 , thanking you for the magazine you have sent to me, and from which I learn of the great developmen that industrial chemistry is undergoing in India.

In the field of plastic materials we obtained in Italy in the last years results of great importance and I hope that also in the field of plastics there may be important contects between India and the italian chemical industry .

With my best regards

(Prof. G.Natta)

Mr.S.L.KAPUR
Assistant Director
Plastics & Polymers
NATIONAL CHEMICAL LABORATORY
POONA 8 (India)

Dear Sir,

voglia scusarmi se Le rispondo solo adesso pèr ringraziarLa dell'opuscolo nel quale sono lieto di apprendere lo sviluppo che assume l'industria chimica in India.

Nel campo delle materie plastiche, si sono ottenute in Itali negli ultimi anni, dei risultati ~~in~~ di importanza notevole e spero che anche nel campo dei plastici ~~si~~ vi possano essere ~~dei~~ ~~dei~~ degli importanti contatti tra l'India e l'industria chimica italian

[illegible]

Telephone: 3471/3472
Telegrams: "CHEMISTRY"

NATIONAL CHEMICAL LABORATORY

POONA 8. (INDIA.)

Ref. No. 435 (9)-PP/56. P-662

5th April 1957.

From

The Director,
National Chemical Laboratory
Poona.

Dear Sir,

A Symposium on High Polymers was inaugurated at the National Chemical Laboratory on March 2, 1957. Concurrent with the Symposium an Exhibition of products by the plastics, rubber and synthetic fibre industries was also organised by the National Chemical Laboratory.

To commemorate this occasion the National Chemical Laboratory brought out a special brochure which contains articles on the proposed expansion of these industries during the Second Five Year Plan period, abstracts of papers presented at the symposium, programme of work in the field of High Polymers in the National Chemical Laboratory and a few other useful articles.

A copy of this brochure is being sent ~~herewith~~ separately for your perusal. I hope you will find it useful.

Kindly acknowledge receipt.

Yours faithfully,

(S. L. Kapur)
Assistant Director
Plastics & Polymers.

~~Encl: One Brochure~~.

Dr. G. Natta,
Istituto di Chimica Industriale del Politechico,
Milano, Italy

Ritornare opuscolo al Prof. per attuare

Opuscolo al Prof. Natta

Vani Atmaram

July 23, 1962

Dr.R.Krishnamurthy,
Flat No.39, Type-3 Quarters,
Indian Institute of Technology,
Bombay 76, India

our ref.362/lv

Dear Doctor Krishnamurthy:

With regard to your letter of April 24, 1962, I regret to have to confirm you that it is absolutely impossible for me to offer you a remunerated job at my Institute.

If you succeed in obtaining any financial help, I shall be glad to welcome you to our Institute.

With my best regards.

Giulio Natta

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Prof. Natta,

IST ITUTO DI CHIMICA INDUSTRIALE
DEL POLITECNICO,
PIAZZA LEONARDO DA VINCI,
32
MILANO.
Italy.

Cons - 68

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Third fold here

Second fold here

Sender's name and address :-

Dr. R. Krishnamurthy,
Flat No. 39, Type-3 Quarters,
Indian Institute of Technology,
Bombay 76. India.

24.4.1962.

Dear Prof. Natta,

Thank you very much for your keen interest in me. Normally scholarships through the Government of India are given for candidates who want to work for their Ph.D. It is also necessary for the Institute, in which a person is working, should sponsor the candidate. I am leaving the present Institute and so it is not possible for me to approach through the Ministry of Government of India. So I am very sorry that I will not be in a position to get a scholarship by the way you have suggested.

Since I am very eager to work with you, I will appreciate if you can offer me a job which will also afford an opportunity to work with you.

Yours sincerely,

RKrishnamurthy

(R. KRISHNAMURTHY.)

Precedent
no

Vani Thanien

April 10, 1962

Dr.R.Krishnamurthy,
Flat NO.39,Type-3 Quarters
Indian Institute of Technology
Bombay-76 (India)

our ref.226/lv

Dear Dr.Krishnamurthy:

I answer your letter of March 10 with delay, because I wanted to see first whether it would have been possible to grant you a fellowship. Unfortunately my efforts have been without success.

There is probably another possibility: you should ask the qualified Offices of your Ministry to forward an official request for a fellowship to the Italian Foreign Office, through the Italian Embassy in India. This has been the right way in other cases.

Let me know any further development of this matter.

Sincerely yours,

G.Natta

To open cut here

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Prof. Giulio Natta,
Instituto di Chimica Industriale,
del Politecnico,
Milan,
~~XXXXX~~
ITALY.

Prof. L. da Vinci

Cora - 88

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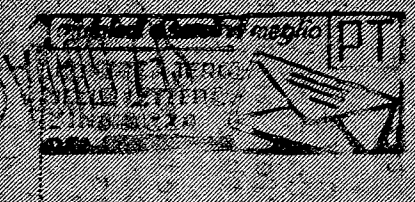
Third fold here

Sender's name and address :—



DR. R. KRISHNAMURTHY
FLAT NO.39, TYPE-3 QUARTERS
INDIAN INSTITUTE OF TECHNOLOGY
BOMBAY-76 (I N D I A)
DATED: 10th March 1962.

20 MAR 1962

226

Dear Prof. Natta,

I am very much interested in working with you in the field of Catalytic reactions. I will be very happy if you can offer me some financial support which will enable me to work with you in your Institute.

As a lecturer in Indian Institute of Technology, Bombay I am teaching post-graduate students in Kinetics thermodynamics and catalysis for the past two years. I have received my Ph.D. Degree from Indian Institute of Technology in March 1960. My research work for the doctorate degree directed by Prof. S.K. Bhattacharya pertained to the vapor phase catalytic oxidation of Xylenes in fluidized bed.

For your evaluation of my suitability I am listing below my academic qualifications:

Matriculation	1948	71%	Mathematics.
Intermediate (Madras).	1950	1st Class	Mathematics, Physics and Chemistry.
B.E.(Chem.) (Annamalai)	1954	1st Class 1st Rank	Chemical Engineering.
M.Tech. (Indian Institute of Technology, Kharagpur).	1956	1st Rank	High Pressure Technology and Technical Gas Reactions.
Ph.D. (Indian Institute of Technology, Kharagpur(.	1960		Catalytic vapor phase oxidation of xylenes in fluidized bed.

I shall be happy to furnish you with more details in case you are interested.

I shall be very thankful if you can consider my candidacy and reply at your earliest convenience.

Yours sincerely,

R. Krishnamurthy

(R. KRISHNAMURTHY)

January, 20, 1964

India

Prof. Santi R. Palit
Indian Aassociation for the
Cultivation of Science
Jadavpur
Calcutta-32 (India)

Dear Prof. Plit:

I thank you for your letter of December 4, 1963 and beg your pardon for answering so late.

According to your request, I herewith enclose an initialled photograph of mine and a publicity 'hand-out' to be published in Science & Culture.

Wishing you a happy New Year, I send you my best regards.

G. Natta

Telephone No. { 46 - 4686
46 - 4687
Gram : INDASSON, Jadavpur

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

From :

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.
Professor of Physical Chemistry.

JADAVPUR,
CALCUTTA-32.

In reply please quote : 3.662/64

February 27, 1964

Milano
(Italy)

Dear Professor Natta,

I am extremely glad to have your kind letter of January 20, 1964 along with an initialled photograph of yours and a publicity 'hand-out'. I have made necessary arrangements for publishing a bibliography on your life in Science and Culture on the happy occasion of your winning ~~last~~ this year's Nobel Prize in Chemistry, and shall be sending you a reprint of the article.

Thanks very much for your Season's greetings and with kind regards,

Yours sincerely,

Santi R. Palit
(Santi R. Palit)

Professor G. Natta, N.L.,
Istituto Di Chimica Industriale
Del Politecnico,
Piazza Leonardo Da Vinci 32,
MILANO (Italy).

ORIENTAL INSTITUTE,
BARODA. (India)
Dated 18th Oct.'58.

No. OI/ 5 6

To
Prof. G. Natta,
Department of Industrial Chemistry,
Polytechnic Institute of Milan,
Milan, Italy.

Sub: Presentation.

Dear Sir,

I have the pleasure of sending herewith a copy of the book 'Some Catalytic Gas Reactions Of Industrial Importance' published in Gaekwad Memorial Lecture Series as presentation ~~copy~~.

Please acknowledge receipt.

Yours faithfully,
U P Shah
Dy. Director.

S. D. Parekh

NNS/-

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR
CALCUTTA-32

In reply please quote : 3.820

December 4, 1963

Dear Professor Natta,

I have been entrusted with the task of writing out an article to be published in SCIENCE & CULTURE (a well-known monthly from Calcutta) about the lives of this year's Nobel Prize Winners in Chemistry. I shall be highly obliged if you kindly let me have a publicity 'hand-out' on your life which I can utilise for the above purpose. + photo

We are also building up a photograph gallery of Nobel laureates in high polymers. I shall be obliged if you kindly let us have an initialled photograph of yours for this gallery.

Yours sincerely,
Santi R Palit
(Santi R. Palit)

Professor G. Natta,
Instituto Di Chimical Industriale,
Del Politechnico,
Piazza Leonardo Da Vinci, 32
Milano, Italy.

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR.
CALCUTTA-32

In reply please quote : 3.820

May 26, 1962.

Dear Prof. Natta,

I have pleasure in sending you herewith a copy of the itinerary of my forthcoming tour.

The forenoon (not the afternoon or evening) of Monday, the 11th June the day of my arrival in Milan may please be kept free as I shall be feeling rather tired and shall be needing a little rest after this long journey.

Looking forward to meet you and to visit your laboratory, with best regards,

Yours sincerely,
Santi R. Palit
(Santi R.Palit)

Dr. G. Natta,
Instituto di Chimica Industriale,
Del Politecnico,
Plazzo Leonardo Da Vinci 32,
Milano, Italy.

date copie a Dr Cerfier
29/5/62

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR
CALCUTTA-32

In reply please quote : 3.820

May 2, 1962

8 MAG 1962
R 387

2 copie

Dear Dr. Natta,

I have pleasure to inform you that according to my present plan I shall reach Milan on June 10 and will be at Milan and Turin for the period from June 10-20. I have a mind to visit Rome on June 21-22 for sightseeing. You may, therefore, please fix my programme as you like accordingly. I leave my programme in Italy entirely to you.

I would also further like to inform you that my daughter would accompany me during this visit. A room with [redacted] bed (i.e. two separate beds) will be convenient for us.

Looking forward to meet you and with best regards,

Yours sincerely,
Santi R. Palit
(Santi R. Palit)

Dr. G. Natta,
Instituto Di Chimical Industriale
Del Politecnico,
Plazzo Leonardo Da Vinci 32,
Milano, Italy.

Albergo
Nuova in Segnieri
conf. albergo per risposta

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR
CALCUTTA-32

2 copies.

In reply please quote : 3.820

April 26, 1962

Dear Dr. Natta,

In continuation of my previous letter of April 24 I have pleasure to inform you the titles of the proposed lectures. I presume that your people are mainly interested in high polymers and so I have chosen the titles which are related to our current work. However, I have various other research interests and I am sending you per separate post a list of our publications over the last few years.

Subjects of lecture :

1) Dye Techniques for End-Group Analysis of Polymers (with lecture demonstration).

2) Introduction of End-Groups in Polymers and their ~~detection~~ /DETERMINATION by the Dye technique.

3) Aqueous Polymerization (with special reference to some newer initiators).

I am extremely thankful to you for your kind invitation and am looking forward to having a very interesting and useful time in Italy.

With best regards,

Yours sincerely,

Santi R. Palit

(Santi R. Palit)

Dr. G. Natta,
Instituto Di Chimica Industriale
Del Politecnico,
Plazzo Leonardo Da Vinci 32,
Milano, Italy.

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR
CALCUTTA-32

2 copie

In reply please quote : 3.820

April 24, 1962.

30 APR. 1962
R

Dear Dr. Natta,

Much thanks for your letter No. 224/Iv dated April 2, 1962. The date suggested by you for my visit suits my convenience. I am letting you know the ~~kkkk~~ title of my lectures in course of a few days.

11-20
giugno

Incidentally, I would like to inform you that we were all briskly busy over the visit of Prof. H. Mark, Director, Polytechnic Institute of Brooklyn who visited us and stayed in for abour a week in Calcutta and delivered a series of lectures giving lecture demonstrations and showing various samples including stereoregular polypropylene. All chemists here greatly enjoyed his lectures.

With kindest regards,

Yours sincerely,
Santi R. Palit
(Santi R. Palit)

Dr. G. Natta,
Instituto Di Chimica Industriale
Del Politecnico,
Piazzo Leonardo Da Vinci 32,
Milano, Italy.

Dottor
Magnifico
Prof

Tel. SATTA
L. Chim

Venuti stranieri India

May 15, 1962

Prof.Santi R. Palit
Indian Association for the
Cultivation of Science,
Jadavpur - Calcutta-32 (India)

our ref.387/lv

Dear Professor Palit,

I was glad to learn from your letters of April 24 and 26 and of May 2, that you will reach Milan on June 10 and sill stay in Milan till June 20.

I fully agree with the topics of your lectures, and I have already taken the necessary steps to have the invitation printed.

You and your daughter have been registered at the Hotel Manin, Via Manin. On your arrival here, please, call me up at the Institute (telephone N° 235.181); if I am not present, you can speak with my Secretary, who speaks English.

Looking forward to meeting you, I send you my kindest regards.

Sincerely yours,

Giulio Natta

India

April 2, 1962

Prof.Santi R. Palit,
Indian Association for the
Cultivation of Science,
Jadavpur,
Calcutta 32 (India)

our ref.224/lv

Copia a Segreteria

Dear Professor Palit:

Thank you very much for your kind letter of March 16.
I am very glad that you can accept my invitation to come to Milan and deliver a few lectures. The period from June 11 to June 20 would be most suitable for us. Please, let me know whether this period suits you too.

You can deliver three or four lectures at my Institute, and if you communicate me their titles, I will have the invitation cards printed.

With my kindest regards,

Very truly yours,

G.Natta

TELEPHONE NO. { 46-4686
46-4687
GRAM: INDASSON, JADAVPUR.

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Prof. SANTI R. PALIT, D.Sc., F.R.I.C., F.N.I.,
Professor of Physical Chemistry.

JADAVPUR.
CALCUTTA-32

March 16,1962.

In reply please quote

20 MAR 1962

224

Dear Dr. Natta,

Many thanks for your kind letter No. 188/IV dated March 8, 1962.

I greatly appreciate the privelige and accept with thanks your kind invitation extended to me to visit your Institution. I shall be happy to deliver lectures to centres of polymer research. Any time after the second week of May suits me for undertaking this visit and I shall be free to spend a week or two in Italy.

I welcome your idea of starting a programme for young chemists to go to your institute for short research assignments. I would be most happy to discuss this matter when we meet.

With kind regards,

Yours sincerely,
Santi R. Palit
(Santi R. Palit).

cc. to Dr.M.Taramasso
C/o.Montecatini,New Delhi.
to Mr.R.M.Kapadia,Director,Harshadray Private Ltd.
23,Brabourne Road, Calcutta-1.

COPIA

INDIAN ASSOCIATION FOR THE CULTIVATIO N OF SCIENCE

Prof. Santi R. Palit,
Jadavpur, Calcutta 32 (India)

ns.rif.224/

March 16, 1962

Dear Dr. Natta,

Many thanks for your kind letter No. 188/IV dated March 8, 1962.

I greatly appreciate the privelige and accept with thanks your kind invitation extended to me to visit your Institution. I shall be happy to deliver lectures to centres of polymer research. Any time after the second week of May suits me for undertaking this visit and I shall be free to spend a week or two in Italy.

I welcome your idea of starting a programme for young chemists to go to your institute for short research assignments. I would be most happy to discuss this matter when we meet.

With kind regards,

Ypurs sincerely,

(Santi R. Palit);

cc. to Dr.M.Tamamasso
C/o Montecatini, New Delhi
to Mr. R.M.Kapadia, Director, Harshadrey Private LtD;
23, Brabourne Road, Calcutta-1

MONTECATINI
SOCIETÀ GENERALE PER L'INDUSTRIA MINERARIA E CHIMICA
ANONIMA - CAPITALE VERSATO L. 150.000.000.000
MILANO

SETTORE STUDI PROGETTAZIONI E BREVETTI
SERVIZIO BREVETTI

MILANO, 23 Marzo 1962.

Si prega indirizzare a: / Please reply to: Montecatini BREV, Largo G. Donegani, 1-2, Milano, Italy.
Phone: 6333 MILANO
Cables: GABBROBREV MILANO
Telex: MI-085 GABBRO (Begin message with: BREV)

Chiarissimo Signor
Prof. Giulio Natta
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo da Vinci, 32
Milano.

Professor Palit.

Chiarissimo Professore,

ci riferiamo alla Sua lettera di ieri all'Ing. Orsoni. Abbiamo preso accordi preliminari con l'Ing. Focaccetti di RESO e in linea di massima la visita in Italia del Prof. Palit potrebbe avere luogo tra l'11 ed il 21 Giugno prossimo venturo.

Si prevede che egli possa tenere in Milano 3-4 conferenze (in inglese) ad un uditorio di 70-80 persone che dovrebbe essere composto di tirocinanti, assistenti, tecnici di Sede e dei vari Settori (SEID - SERE - VERE - Polymer - Istituto Donegani ecc.).

La sede migliore dovrebbe essere un'aula del Politecnico. Su questo, come sugli altri dettagli, avremo tempo di tornare in seguito. Per ora gradiremmo un Suo cenno di accordo.

Con i migliori ossequi.

"MONTECATINI"

Orsoni

* Esse.ap

22.3.1962

Egr.Ing.B.Orsoni
Direzione SPEB
Società Montecatini
S e d e

Egregio Ingegnere,

ho scritto secondo i Suoi suggerimenti ai professori indiani Palit e Kapur. Ricevo ora la risposta del Prof.Palit, di cui Le invio copia.
La pregherei di comunicarmi per quale periodo la Montecatini gradirebbe la visita del Prof.Palit. Per parte mia potrebbe andare bene dopo la prima settimana di giugno.

In attesa di Sue notizie Le invio molti cordiali saluti.

G.Natta

All/ 224

Visit of Prof. Natta to India

March 8, 1962

Prof.S.R.Palit,
Indian Association for the
Cultivation of Science,
Jadavpur - Calcutta 32 (India)

our ref.188/lv

Dear Professor Palit:

I would like to inform you that a National Centre of Macromolecular Chemistry, sponsored by the Italian Research National Council, was originated at this Institute as well as in other research Institutes. The purpose is to co-ordinate research studies of various Italian investigators in macromolecular chemistry.

Since this programme enables us to invite outstanding scientists in the field of macromolecular chemistry, I would therefore greatly appreciate your consideration in our invitation to you to visit this Institute, and possibly to deliver a lecture on a subject of your choice.

I would also like to discuss with you the possibility of starting a programme by which Indian young chemists could come over to our Institute for some short research assignments. For this we would like to consider applications from some students from your country. This programme, sponsored by the Italian Research National Council could enable us to accept people at our own expenses. We would of course provide these awards to truly worthy chemists, and concerning this particular matter, I would like to discuss it with you.

I wish to inform you that in the case you should accept my invitation to come to Milan, all your travel expenses as well as any other relevant expenses incurred during your stay here, will be provided by my Institute.

Sincerely yours,

G.Natta

veril Thermin

January 13, 1960

Dr. Sunanda Kumar Palit
Bachelor's Flat - 4/10
Kharagpur Technology
West Bengal - India

our ref. 1308/lv

Dear Dr. Palit,

with regard to your letter of Dec. 18, 1959 I wish to inform you that you may come and work in my Institute when you like.

Yet I have no possibility of granting you a scholarship, while I can exempt you from all the laboratory expenses.

Thus, if you desire to come , you should either get a scholarship somehow in India, or take upon yourself all the travelling, board and lodging expenses.

With my best regards,

Prof. G. Natta

Vane Spon

October 13, 1960

A.K.M.Pillai, B.A.
C/o The Dunlop Rubber Co
Cochin-3, S.India

our ref.789/eg

Dear Dr.Pillai,

I answer your letter of August 22, 1960 with delay having been absent from Milan up to now. I also received a latter from our Board of Education.

However, I wish to inform you that we have never developed studies on natural products and therefore we cannot judge your thesis. Moreover, considering that this is an Engandering School, we have no possibility of examining your thesis for a "Doctorate Degree" of our Institute

Sorry not being able to help you and to gratify your wish, I send you my best regards.

G.Natta

It is needless to mention that I shall be highly privileged to work with you in any of the above fields.

A favourable reply from you will be highly appreciated.

Thanking you,
Yours truly,
Sunanda Kumar Palit
(Sunanda Kumar Palit.)
18/12/59

Risposta da formulare, mi spiace di non poterla dare

BY AIR MAIL
हवाई पत्र
AEROGRAMME
NO ENCLOSURES ALLOWED

Professor, G.Natta.
Director, Institute of Industrial Chemistry, Polytechnic of Milan,
Milan,
ITALY.

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Third fold here
To open cut here

Sender's name and address:
S.K.Palit.
Bach. Flat. 4/10.
Kharagpur Technology,
India.

Cover - 68

Sunanda Kumar Balit.
Bachelor's Flat - 4/10
Kharagpur Technology
West Bengal. India.

To
Prof.G.Natta.
Director, Milan Institute of Industrial Chemistry,
Milan. Italy.

Dear Sir,

I am a student of Chemistry and at present carrying on research work in the Department of Applied Chemistry Indian Institute of Technology, Kharagpur. I have a special interest in the study of different reactions under high pressure, kinetics of such reactions and catalyst surface properties and their measurements. It has been a long ambition for me to work under leading workers in this field and I am therefore eagerly looking forward to an opportunity to work with you.

As regards my qualifications I have submitted my thesis for the award of Ph.D degree on " The Catalytic Synthesis of Esters from Ethers at High Pressure " to The Indian Institute of Technology, Kharagpur. I worked under the supervision of Dr S.K.Bhattarchyya, Professor and Head of the Department of Applied Chemistry of the Institute. I am still working on this problem regarding the mechanism of the reaction. I have also carried out work on some problems on fluidisation and also separation of fatty acids by column chromatography.

vedi Premier

Oct 24, 1962

Mr.V.R.Purandare,
96, University Hostel,
Matunga, Bombay-19 (India)

our ref.783/lv

Dear Mr.Purandare:

In the absence of Prof.Natta, I answer your letter of Oct.16, 1962.

The industrial production of polypropylene has never been described in detail in any publication. However, under separate cover, I send you some reprints of articles dealing with the kinetics. I hope they will help you to draw the practical conditions under which polymerization can be effected.

With my kind regards.

inviati N
segnarli

212, 228, 240, 241, 247
248, 251, 264, 486, 553

(Prof.I.Pasquon)

R 789 -

From

A.K.M.Pillai, B.A.(Madras), M.Sc.(Lucknow),
F.I.R.I.(London), A.R.I.C.(London,
A.M.B.I.M.(London),
C/o The Dunlop Rubber Co.(I) Ltd.,
Cochin-3, S.India.

22nd August,1960.

Dear Sir,

With a view to submit my thesis on Rubber Research for a Doctrate of your Institution, I had contacted the Italian Consul in Bombay(India) for guidance and he has now advised me to get in touch with you in this connection. He also mentioned that the Education Department in Rome has already intimated you about my request.

During the period 1942-45 when there was acute shortage for Hevea Rubber the Government of India started the investigation to procure and purify rubber from the plant "Cryptostegia Grandiflora" and I was the Rubber Chemist conducting the investigation. As you are aware, very little was known about this plant previously. My work on this plant is probably the solitary complete one on the subject and all my research data are put in the form of a thesis, and my present request is to grant me your kind permission to submit the same to you for a "Doctorate Degree" of your Institution. I am looking forward to receiving your instructions so that I may submit my thesis to you.

Yours faithfully,

AKMPillai
22-8-60

To

Professor Giulio-Natta Ordinaria di Chimica -
Industriale Politecnico,
Milano, Italy.

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Prof. G. Natta,

Instituto di Chimica del

Politecnico, Milan, ITALY.

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Third fold here

Cons - 66

Sender's name and address :—

V.R.Purandare,

96, University Hostel,

Matunga, Bombay-19

(India).

To open cut here

FROM : V.R.Purandare,
96, University Hostel,
Matunga, Bombay-19(India).

October 16, 1962.

To

Prof. G. Natta,
Instituto di, Chimica del
Politecnico, Milan
ITALY.

Dear Sir,

I am a Final Year student for the Bachelor's Degree in Chemical Engineering in Department of Chemical Technology, University of Bombay, Bombay-19(India).

As a part of my Course, I have been assigned a Home-Paper on "Mamufacture of Polypropylene from Propylene obtained from cracked naptha". I shall be very much obliged if you will kindly furnish me with the following information :-

(1) Details of the process.
(2) Kinetics involved in the process, and
(3) Catalysts used.

My interest is purely from academic point of view and will not be exploited for commercial purposes.

Thanking you in anticipation,

Very truly yours,
V.R.Purandare
(V.R.Purandare)

N.V. Vijaya Raghavan
C/O N.Desikachar
5, Paradise Housing Co-operative Society
Plot No.159 (West), Sion,
Bombay-22, (INDIA).

Dated: 13th December 1961

To

Professor G. Natta
Istituto di Chimica Industriaie del Politechnico
Piazza Leonardo da Vinci, 32,
Milan, Italy.

Dear Sir

I had written you a letter sometime back in reply to your letter of Oct. 23rd. In that letter I had expressed my desire to work in your department for a period of one year as graduate research trainee without any financial support.

I have gone through several of your outstanding publications in the field of Polymer Chemistry in which you have made pioneering work which has inspired me to take up research and an intense desire to work under your expert direction.

It is needless to point out that I will be benefitted to a great extent by the training that I receive from you in your Department. As I have indicated to you earlier that I will be in all probability completing my work sometime in June 1962. I have advised two of my professors to send you directly the letters of reference.

Thanking you in anticipation for a favourable reply,

With best regards,

Yours faithfully

N.V. Vijaya Raghavan

(N.V. Vijaya Raghavan)

Dr. S.V. Puntambekar, B.S.(Chem.Eng)
M.S.,Ph.D.(Ill), F.A.Sc.,
DEPARTMENT OF CHEMICAL TECHNOLOGY.
MATUNGA ROAD, BOMBAY 19.

TEL. 61308

University of Bombay

Dated 24th December 1961

Professor G. Natta
Istituo di Chimica Industriaie del Politechnico
Piazza Leonardo da Vinci, 32,
Milan, Italy.

Dear Sir

I have a great pleasure in writing to you about Mr. N.V. Vijaya Raghavan, a student of mine during the 1959-60 B.Sc.(Tech) degree classes. He passed the same examination taking a high Second Class. He has taken first Class marks in Technology of Plastics, and his educational record in the Department is impressive and creditable. He is now carrying out research work as a post-graduate student for his Master's Degree under the guidance of Dr. D.B. Vidwans.

Mr. Vijaya Raghavan is a very sincere and hard working student and has excellent aptitude for research. I have found him very systematic in his approach to the problem and laboratory work.

Mr. Vijaya Raghavan is very keen on continuing his studies in Polymer Chemistry in your Department as a graduate research student. I am of a strong opinion that with his good educational qualifications and aptitude for research, he should be able to do well in the field of Polymer Chemistry. I therefore, strongly recommend that Mr. Vijaya Raghavan may be admitted to your Department as a Post graduate student.

Yours

S.V. Puntambekar

(S.V.Puntambekar)
Professor of Polymer Technology

TEL. 61308

University of Bombay

Dr. D.B.Vidwans, Ph.D(Lond), F.N.P.R.T.
DEPARTMENT OF CHEMICAL TECHNOLOGY,
MATUNGA ROAD, BOMBAY 19.

Dated: 14th December 1961

Professor G. Natta
Istituo di Chimica Industriaie del Politechnico
Piazza Leonardo da Vinci, 32,
Milan, Italy.

Dear Sir

It gives me a great pleasure in recommending Mr. N.V.Vijaya Raghavan for prosecuting higher studies abroad.

After graduating himself from the Mysore University, Mr.N.V. Vijaya Raghavan joined the Plastics Section of this Department in June 1958 for a two year B.Sc.(Tech) degree course. He secured a high second class in that examination in the year 1960 April and has since then been working for M.Sc.(Tech) by research under my guidance. The subject of his investigation is "Studies in Polyethylene."

I have found in him a sincere, conscientious and painstaking student who will apply himself to research in future. He is getting on well with his work and is conversant with some of the techniques used in Polymer Chemistry. After completing his M.Sc.(Tech) he is looking forward to continue his studies abroad; and I am confident that with his basic educational qualifications and research experience he will prove worthy of himself in investigating problems in the field of Polymers or similar ones. I can strongly recommend him to accept a studentship at your graduate school in your Section.

He has been awarded a departmental Fellowship to enable him to prosecute his M.Sc.(Tech) and he is looking forward for similar stipendiary help abroad.

Yours faithfully

D.B. Vidwans.

(D.B. Vidwans)

Varie stranie
India

January 22, 1962

Dr.N.V.Vijaya Raghavan
C/O N.Desikachar
5, Paradise Housing Co-operativ
Society - Plot No.159(West),Sio
Bombay-22 (India)

our ref.1017/eg

Dear Sir,

I have received your letter of December 13, 1961 and the reference letters by Prof. S.V.Puntambekar and D.B.Vidwans.

I am pleased that you can spend one year at my Institute.

Please, communicate me, possibly with some advance, the date of your arrival here, to enable me to prearrange a work place for you.

With my best regarda.

G.NATTA

Sorpesa

10.11.1961

Egr.Ing.Oronzio De Nora
Via Bistolfi 35
Milano

Caro Ingegnere,

Le allego copia di una lettera che ho ricevuto da un chimico indiano che desidera lavorare per un certo tempo presso questo Istituto. Poichè so che la Sua Società ha rapporti con l'India, La pregherei di dirmi se potesse interessarvi per un impiego parziale.

Molti cordiali saluti.

Giulio Natta

P.S. Da precedenti comunicazioni del Raghavan so che usufruisce di una borsa di studio indiana molto limitata.

All/

COPIA

Bombay, Dated 1st November 1961

From:

N.V.Vijaya Raghavan
C/O N. Desikachar
5, Paradise Housing Co-operative Society
Plot No. 159 (West)
Sion, Bombay-22 (INDIA)

ns.rif.892

Professor G.Natta
Instituto di Chimica Industriale del Politecnico
Piazza Leonardo da Vinci-32
MILAN, ITALY

Dear Sir,

I thank you very much for your letter of October 23 and I am happy to note that you have started working again.

I am extremely fortunate enough to know that you are willing to accept me under your guidance and I am very much willing to work ad a Graduate Research Trainee in your Department for about a year or more.

It will be possible for me to come there without any financial assistance from your departmente and I shall be grateful to you if you could kindly let me know the maintenance cost such as boarding and lodging etc. or any other information that you should think is vital so that I could give you a definite reply about the possibility of my maintenance at the Polyrechnic under the present financial conditions.

I have following questions with your kind permission:

1. Are there any part-time employment opportunities for students coming from abroad.

2. Is it possible for me to continue research work for the second year and secure financial assistance during that period taking into consideration of my work at your department.

3. When I may have to join the Polytechnic?

I am eager to complete the formalities to secure admission so that I could arrange for Passport, Visa, Travel and Foreign Exchange and I kindly request you to send the necessary details regarding admission to the Graduate Research Training in your department.

With best regards?

f.to
N.V.Vijaya Raghavan

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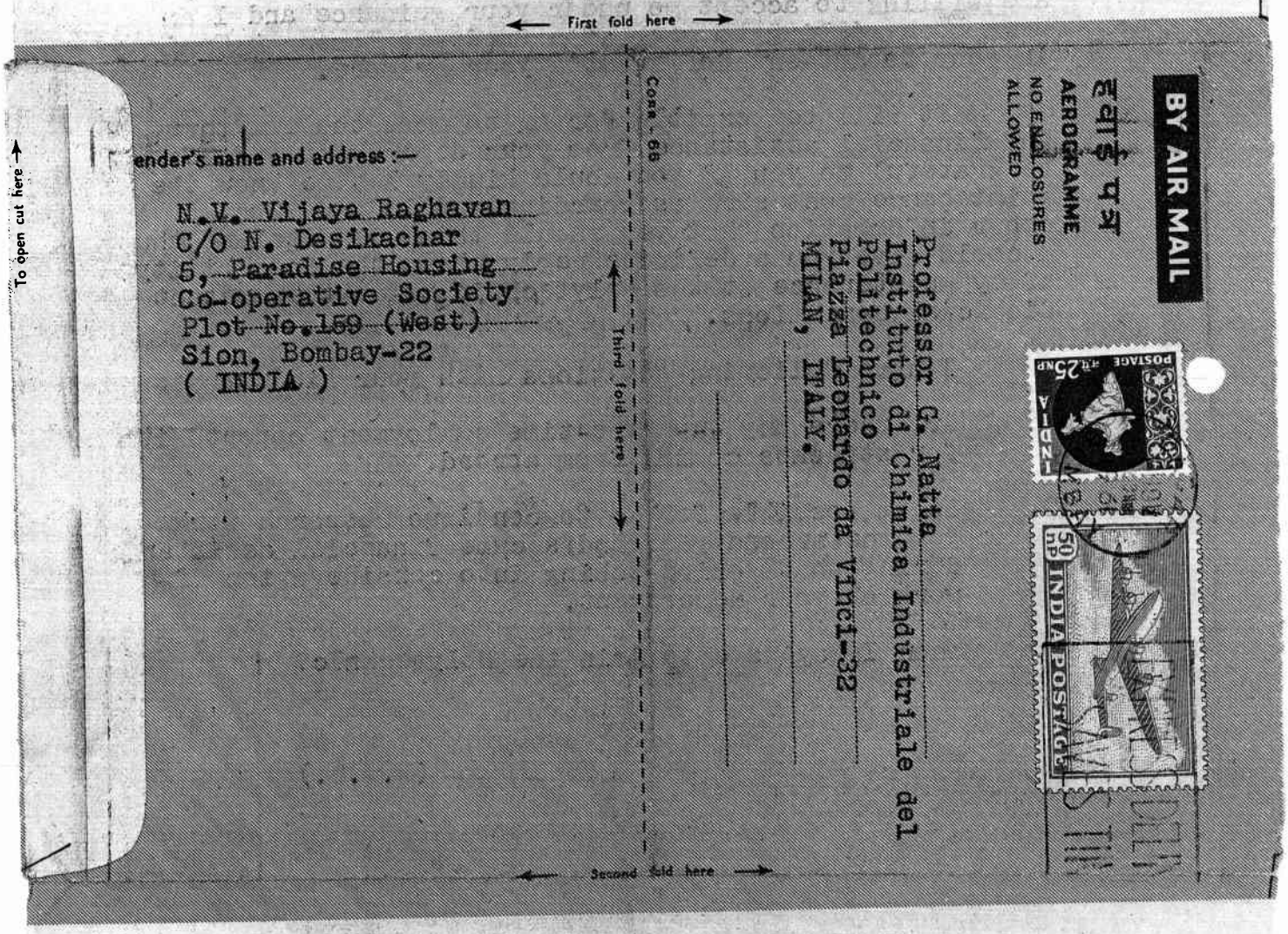
With best regards,

Yours faithfully

N.V. Vijaya Raghavan

(N.V. Vijaya Raghavan)



Bombay, Dated 1st November 1961

From:
N.V. Vijaya Raghavan
C/O N. Desikachar
5, Paradise Housing Co-operative Society
Plot No. 159 (West)
Sion, Bombay-22 (INDIA)

fare 2 copie

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Instituto di Chimica Industriale del Politecnico
Piazza Leonardo da Vinci-32
MILAN, ITALY.

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(P.T.O.)

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P. Nina

Vorril
Wheinles
Thotw

Oct. 23, 1961

Mr. N. V. Vijaya Raghavan,
c/o N. Desikachar,
5, Paradise Housing,
Co-operative Society,
Plot No. 159 (West)
Sion, Bombay-22 (INDIA)

our ref. 855/lv

Dear Mr. Raghavan:

I apologize for answering your letter of July 23 only now. As my Secretary wrote to you on July 28, I had been operated in and started working again at the Polytehhnic only a very short time ago.

I am pleased to learh that you wish to come and work at this Institute. However I inform you that this School does not grant Ph.D. degrees in Polymer Chemistry. In fact, this is an Engineering Schhol with a department of Chemical Engineering. One can get a degree after five academical years, during which mathematical sciences are mainly studied. The entrance to the courses subsequent the first one is possible only to those who have passed certain examinations, and to those, coming from abroad, who have passed examinations that can be considered equivalent.

However it is possible for me to accept young graduates as trainee students, who bind themselves to work here for about one year. The results of their research work may be published in a paper bearing the names of all who have participated in the work.

After the period spent as a trainee student, you can get a certificate attesting the work done and the relative judgement.

It is impossible, however, afford any financial assistance; the only thing I could try to do is to exempt you from the entrance fee of L.It.100,000 (about $160) required by the Direction of the Polytechnic to trainee students.

In the meantime, accept my best regards.

Giulio Natta

July 28, 1961

Mr.N.V.Vijaya Raghavan,
C/o N.Desikachar,
5, Paradise Housing,
Co-operative Society,
Plot No.159 (West)
Sion, Bombay-22 (INDIA)

our ref.702/lv

Dear Sir,

We have received your letter dated July 23,1961, in the absence of Professor Natta, who recently underwent a surgical operation with excellent results. However he is compelled to spend a period of total rest until September.

On his return, he will certainly answer you personally about your application for admission to the Ph.D. degree in Polymer Chemistry to this University.

Very truly yours,

the Secretary
to Prof.Natta

I submit the following particulars in short for your kind reference:

Name : N.V. VIJAYARAGHAVAN

Age : 22 years.

Educational Qualifications: B.Sc.B.Sc.(Tech)(Technology of Plastics)

Date of joining research for the Degree of M.Sc. (Tech.) : 20th June 1960.

Problem for Research : "Studies in Polyethylene.

I am a recipient of Research Fellowship of the Government of India, Scheme of Research Expansion from 20th June 1960.

With best regards,

Yours faithfully

N.V. Vijaya Raghavan.

N.V. VIJAYA RAGHAVAN.

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BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Dr. Giulio Natta

Istituo di Chimica Industriale Del

Politecnico, Milan

MILAN ITALY.

15 nP INDIA POSTAGE

Sender's name and address :—

N.V. Vijaya Raghavan
C/O N. Desikachar
5, Paradise Housing
Co-operative Society
Plot No. 159 (West)
Sion, Bombay-22 (INDIA).

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Bombay, Dt. 23rd July 1961

From:
N.V. VIJAYA RAGHAVAN
C/O N. Desikachar
5, Paradise Housing
Co-operative Society
Plot No. 159 (West)
Sion, Bombay-22 (INDIA)

Dr. Giulio Natta
Istituo di Chimica Industriale del
Politecnico, Milan, Italy.

Dear Sir:

You will kindly permit me to take the liberty of writing this letter to you. I am a post graduate student of the Bombay University carrying out research work for the degree of Master of Science (Technology) in the Technology of Plastics and High Polymers under the guidance of Dr. D.B. Vidwans Ph.D (Lond), F.N.I.R.T. I expect to complete my research work and submit my thesis by June 1962.

I am very much enthusiastic that I should continue my studies under your expert supervision for the Ph.D. degree in Polymer Chemistry of your University.

I shall be honoured and privileged if you will be pleased to take me under your care and guidance in order to achieve the objective of mine. I hope that you will kindly give your sympathetic and favourable consideration with my needs and aspirations. I shall be highly grateful to you if you could kindly send me the necessary application form for admission to Ph.D. and other necessary particulars so that it would be possible for me to send you the complete details of my scholastic records and letter of recommendation from my professors, so that I could apply for admission for September 1962.

I may be permitted to add that it will be of immense help if you could kindly consider me for financial assistance during the course of my study in your Department.

(P.T.O.)

Veil
Ramanna

April 15, 1964

Dr.S.Ramanna, Plant Manager
23. Type 4, Sector 4,
Naya Nangal (Punjab) INDIA

Dear Doctor Ramanna;

I am sorry to inform you that no reprints are available of the article: "Synthesis of Methanol" published in CATALYSIS, Vol.III, requested in your letter of March 16.

However, under separate cover, I send you some other reprints on that subject, which, I hope, will be of interest to you.

With best regards,

Giulio Natta

78 pendit. 17/4/64

BY AIR MAIL

हवाई पत्र

AEROGRAMME

NO ENCLOSURES ALLOWED

Prof. G. Natta,

Institute of Indust. Chemistry,

Polytechnic of Milan

MILAN (I T A L Y)

CORR - 66

First fold here

Third fold here

Second fold here

Sender's name and address :—

Naya Nangal
16th March'1964.

From,

S. Ramanna; Plant Manager,
23. Type 4, Sector 4,
Naya Nangal (Punjab) INDIA.

To,

Prof. G. Natta,
Institute of Industrial Chemistry,
Polytechnic of Milan,
MILAN I T A L Y.

Synthesis of Methanol

Dear Professor,

Please arrange to send me one copy of Reprint of the following chapter written by you and translated into English by Dr. Umberto Colombo of Montecatini and oblige.

Chapter 8: "Synthesis of Methanol". CATALYSIS Vol.III; Edited by Paul H. Emmette; English edition.

Further, please arrange to send anyother articles published by you or your Institute on Methanol and Ammonia.

With regards,

Very truly yours'

S. Ramanna

(S. Ramanna)

Chimica Ind. art. su metanolo

168 — not I 1953
188 — II 1955
405 — III 1960 ?
578 J. Catalysis

Jan.18, 1962

Mr.K.K.Shah,
C-15, Sarvodaya Society,
Near Railway crossing,
Chembur BOMBAY 71 (India)

our ref.1009/lv

Dear Mr.Shah:

With regard to your letter of Dec.8, 1961, I wish to inform you that in our Institute we have mainly dealt with the polymerization and copolymerization of alpha-olefins and not of ethylene.

Among the various papers describing the kinetic aspects of the polymerization of ethylene with $TiCl_4/AlR_3$, I quote the following one:

Ludlum et al.: J.Am.Chem.Soc. 80, 1380 (1958)

I am afraid that literature does not supply sufficient information with regard to the other topics.

Sincerely yours,

Prof.G.Natta

India

January 7, 1958

Mr. J.P. de Sousa, Editor
Chemical Age of India
BOMBAY - 65 Mahatma Gandhi Roa

Ref. N. 1976/rl

Dear Mr. De Sousa,

I received your very kind letter of November 19, and last week, also the copies of the "Chemical Age of India" issue in which my article is published.

Thanking you for your kindness, I send you my kindest regards and best wishes for an Happy New Year.

Sincerely yours,

Giulio Natta

To,
Prof. G. Natta.

Istituto di Chimica, Industriale del Politecnico.

Milan. Italy.

Respected Sir,

I beg to state that I am a student of Final year Chemical Engineer: in Department of Chemical Technology, University of Bombay. As per the university regulations each student is assigned a "Home Paper" which is to be submitted to university before 15th January 1962. It carries 100 marks of final examinatinn. My home paper reads as follows "Prepare a project report for the manufacture of 5 metric tons per day of Polyethylene from the available materials obtainable from cracked naphtha fractions." I have decided to use Ziegler process using tri-ethyl aluminiu and titanium tetrachloride as catalysts.

I am fully aware of excellent work done by you and your co-workers on stero-specific polymers. I have always read your articles with great interest. But since we do not get any Italian journals on polymers, I am not in a position to take advantage of many more articles by you.

Inspite of making a good search in avalaible

literature, I am not able to get following data-

(1) Kinetics of reaction, residence time in reactor etc

(2) Optimum amount of solvent.

(3) Optimum amount of catalyst.

(4) Composition of solvent which is fed to fractionaters for purificat

We get very limited no. of journal on polymers in our library. I will be very grateful to you if you will kindly supply me with above information and reprints of related publications.

I, hereby, assure you that information given by you shall be used only for examination purpose and shall not be used in any other way.

Once again I thank you for trouble. Hoping to be favoured by an early reply from you,

I remain yours faithfully

K.K. Shah

K.K. SHAH.

C-15 , Sarvodaya Society.

Near Railway crossing. Chembur BOMBAY 71.

INDIA.

Bombay.

dated 8 - 12 -61

Pargam

1827 data D. Sanfeim

November 12, 1957

Mr.J.P.de Sousa
Chemical Age of India
Bombay 1
65, Mahatma Gandhi Road

Dear Mr.De Sousa,

I received your kind letter of October 26, and, some time ago, also the September issue of your Journal, and I thank you very much.

Enclosed, I am sending you the short note you requested and a copy of my photograph. I am sorry, that owing to the short time to my disposal, I have not been able to write anything more detailed.

With my best personal regards, I remain,

Sincerely yours,

Giulio Natta

Enclosures/

NEW CONQUESTS OF MACROMOLECULAR CHEMISTRY

by Giulio Natta

I accepted with pleasure the invitation to send a message to Chemical Age of India because to all of us Italian having , (even if afterwards we dedicated ourselves to scientific studies) a scholastic background of classical and humanistic character, India has represented a Country of tale of enormous interest, since it has been the cradle of the most ancient civilizations.

Many problems present for both these Countries, India and Italy which have overcrowded regions, analogous aspects and in both Countries several technical and economical problems can be solved in a rational way only by means of similar and particular methods, quite different from those resulting more rational in other Countries of low population density and in which the man-labor cost is high.

India is in an evolutive stage from an economy prevailingly of a land-farming type to an economic asset also of industrial type and the scientific and technical progresses characterizing this Century must be wisely utilized to reach a gradual increase of the standard of life and welfare of the Country.

Since progress goes on at an ever faster pace, India must get prepared in order to avoid in the future what already happened in the past century, i.e. that an important discovery such as that of synthetic aniline production, be the cause of disastrous economical consequences for these districts of India in which natural indigo was cultivated.

./.

In the evolutive process of a Country, the Chemical Industry plays a fundamental rule, which tends to increase in the future, owing to an increase in world population, whose normal growth is becoming higher as a consequence of the higher standard of life and of the progresses in hygiene and medicine.

There are some fields of fundamental importance to our present civilization in which man was completely depending until a recent past, from a land based type of economy. One of these fields is that of organic macromolecular substances, including the textile products (wool, cotton, natural silk), the paper and leather industries, the industry of wood as a construction material.

This dependence derived from the fact that Nature only, through the biological synthetic processes taking place in plants and in living animals, was able to orderly associate the small monomeric units.

They represent the small constructional elements by means of which Nature builds up, associating them by hundreds or thousands in a preestablished way, the great architectural constructions of macromolecules.

The inventions of Carother in U.S.A. had allowed twentyfive years ago to obtain by polycondensation linear, highly crystalline macromolecules having high mechanical characteristics and properties similar to silk, but the processes for manufacturing them resulted to be very high in cost since they needed the use of chemical intermediate products requesting complex and expensive syntheses.

./.

chemical age of india

TECHNICAL PRESS PUBLICATIONS

Editor - Publisher
J. P. de Sousa, M. Sc., F.G.M.S.

65, MAHATMA GANDHI ROAD, BOMBAY 1. PHONE: 252072.

by air mail

19th November 1957

Professor Giulio Natta
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo da Vinci, 32
Milano
Italy

Dear Professor Natta

I am extremely grateful to you for your kind acceptance of my invitation, for your cable and for the note on "New Conquests of Macromolecular Chemistry" with two photographs which arrived safely today.

On behalf of this publication, I tender you our grateful thanks for your above article which will be published in "chemical age of india" for October/December containing a special supplement on "The Italian Chemical Industry", as a GUEST EDITORIAL and it will, we are sure, engage the attention of our Government and a wide circle of readers in this country.

A copy of this journal for October/December 1957 will be immediately airmailed to you on publication.

With kind personal regards from myself and also from Rev.Fr. Lourdu Yeddanapalli, a member of my Editorial Advisory Board and a worker in the field of macromolecular chemistry, I remain

Yours sincerely

J.P. de Sousa
Editor-Publisher

The great branch of polyaddition polymers, chiefly developed in the past twenty years, mostly represents products with highly irregular and, generally, non crystallizable structure.

Only Imperial Chemical Industries had succeeded in obtaining from simple, highly symmetrical molecules of ethylene, polymers of a not strictly linear structure and having slightly high crystallinity (40-60%), but using pressures of thousand of atmospheres. In 1953 Professor Ziegler discovered in Mülheim (Germany) a process for the catalytic polymerization of ethylene operating at low pressure, which allows to obtain more linear molecules, having a greater crystallinity.

Polyethylene, as a plastic, is now assuming remarkable developments both in America and in Europe.

The most important results, however, have been recently obtained by the Italian Chemical Industry, which, on the basis of processes scientifically studied at the Polytechnic Institute of Milan, industrially realized the first stereospecific polymerizations. These allow to obtain, using asymmetrical monomeric units, macromolecules having such a regularity of structure which was previously known only in certain natural macromolecules. In some cases those processes allowed to produce new types of macromolecules not existing in Nature, such as "isotactic", crystalline polymers (see picture).

Such stereospecific polymerization processes yield polymers, having molecular weights which can vary at will from tens of thousand to a million figure, from simple asymmetrical monomers such as alpha-olefins and diolefins; furthermore, they allow to obtain products having regular, linear structure and the wanted degree of crystallinity, which are suitable for the most varied applications.

./.

Polymers and copolymers of propylene, a monomer obtainable together with other olefins in high yields and at very low cost from petroleum, appear to be destined to great developments in the field of plastics, of textile fibers, of synthetic rubbers, of constructional materials. It is to be foreseen that their production costs will be competitive in the future, with the cost of several natural products which are outperformed, on the other hand, in many of their properties by the new synthetic ones.

What kind of importance are going to assume in the future the new discoveries of this type for a Country like India?

They will prepresent the possibility of producing in chemical plants, (which need capital investments relatively modest, when compared with those necessary for the synthetic production of materials like nylon) several new, very cheap products suitable for the manufacture of the most varied end products (plastics, films, etc.). The need for these will be increasingly higher as the standard of life of people will increase and they will be suitable also for contructional purposes, thus replacing metals which are heavier, wood which is far less malleable, less homogeneous and more putrescible, leather which is less waterproof, and glass which is more brittle.

A partial substitution of certain natural products such as textile fibers and rubber by synthetic products, must not worry those Countries having today a land farming based economy, like India.

In fact productions based on natural products, even if today may appear sufficient from a quantitative point of view in some fields, probably will not be sufficient any longer in the future, owing to the increase

./.

in consumptions in the world.

Furthermore the increase in population and in standard of life doubtless will require to reserve ever wider cultivable surfaces of soil for the production of foods.

India, with the great numerical weight of its population, represents a remarkable potential internal market capable of absorbing in a relatively short time a production of plastic materials and products derived therefrom corresponding to producing units which, based on European standards, will certainly have capacities largely superior to the minima economically required.

NEW CONQUESTS OF MACROMOLECULAR CHEMISTRY

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chemical age of india

TECHNICAL PRESS PUBLICATIONS

Editor - Publisher
J. P. de Sousa, M. Sc., F.G.M.S.

65, MAHATMA GANDHI ROAD, BOMBAY 1. PHONE: 252072.

By Air Mail

Professor Giulio Natta
Industrial Chemical Institute,
Milan Polytechnic,
MILANO (Italy)

26th October 1957

Dear Professor Natta:

Sometime ago, I took the liberty of mailing to you by seamail a copy of the July/September issue of this quarterly journal in which appeared a review of "Recent Trends in the Polyolefines" in the hope that it would engage, perhaps, your brief attention. We hope that you have had some time to spare to glance through this journal which is serving the chemical and allied industries in India since 1950.

In the current October/December quarterly issue, we are publishing a special feature supplement on the ITALIAN CHEMICAL INDUSTRIES and we have been fortunate in obtaining the co-operation of official and semi-official organizations connected with the the Italian Chemical Industry as well as Messrs. Montecatini, Ansaldo, de Nora etc.

We are writing this letter in the hope that this journal in its edition for October/December containing much matter about Italian industry and Montecatini would be favoured with a few lines specially written for it by an eminent Italian of your standing whose name will be irrevocably linked with POLYETHYLENE. If you will be so kind as to send us a short note or article or message, in English or in Italian, for publication immediately in the October issue with a copy of your photograph, by airmail, we will be greatly in your debt. Your article can even be published as a Guest Editorial. We hope that you will assist this journal which in turn is serving the rapidly-developing technology in Asia.

Looking forward to your reply and assuring you, Sir, of our sincerest and immediate attention at all times, in your service, we remain,

Cordially yours
chemical age of india

J.P. de Sousa
J.P. de Sousa
Editor and Publisher

Serpini

From :
S. N. SRIVASTAVA,
Ph D. (Luck.), Ph. D. (Cantab), F.R.I.C. (London),
Professor & Head of the Department of Chemistry

AGRA COLLEGE,
A G R A-2.
Telephone No. 4100

India

Dated....5.7.1965 19

Sir Giulio Natla,
Chemistry department
Institute of Technology,
Milan (Italy)
Italy.

27/8

Dear Prof. Natla,

Our college which is one of the oldest in India has been a strong centre of post graduate teaching and research in Humanities and Natural Sciences for more than hundred years. To the chemistry department of the college recently a new post graduate and research block has been added. This houses a departmental library cum Seminar Hall. We very much wish that we should have some photographs of topmost Chemists of International repute specially Nobel laureates in Chemistry.

I shall, therefore, feel obliged if you could kindly send your photograph of a reasonable size with your autograph.

Thanking you in anticipation,

Yours sincerely,

SN Srivastava

India

Milano, March 4, 1976

your ref. 4420/D.Sc.
and 4682/D.Sc.

To the Assistant Registrar
University of Calcutta
Senate House
Calcutta-12 (India)

Re : Thesis on "Studies on vinyl polymerization" submitted by Dr. Mukul Biswas, M.Sc., Ph.D.

With reference to your letters of December 29, 1975 and February 2, 1976, I am sorry to inform you that Prof. Giulio Natta retired some time ago from scientific and academic activities.

If you agreen the thesis submitted for the D.Sc. degree of your University by Dr. Mukul Biswas could be examined by Prof. Mario Pegoraro of our Institute, a coworker of Prof. Natta from about twenty years.

Awaiting for your kind reply, I remain,

Sincerely yours,

Prof. Luigi Giuffré, Director

Dr. S. B. DABHADE,
B. Sc., B. E. (Tech.), M. Tech., Ph.D.,
A. M. I. I. Chem. E.,
Reader in Chemical Technology

Reader

LAXMINARAYAN INSTITUTE OF TECHNOLOGY
NAGPUR UNIVERSITY, NAGPUR.

JANUARY 1972

Most respected Prof Natta,

I take this chance to wish you and your family a very happy new year. As a student of Istituto di Chimica Industriale de Politechico during 1962-63, I had carried a heavy load of sweet memories which still give me happiness in my leisure hours. I pray God for your good health.

I have almost settled in Nagpur, in teaching profession, in the same institute where I had studied. I feel very much feel nice about it and feel very much proud when I am with those who taught me. My wife, Meena, along with my family, also, send their best regards. We very much glad to receive

DR. S. B. DABHADE,
B. Sc., B. Sc. (Tech)., M. Tech., Ph.D.,
A. M. I. I. Chem. E.,
Reader in Chemical Technology

Prudie

LAXMINARAYAN INSTITUTE OF TECHNOLOGY
NAGPUR UNIVERSITY, NAGPUR.

JANUARY 1972

Most respected Prof Natta,

I take this chance to wish you and your family a very happy new year. As a student of Istituto di chimica Industriale de Politechico during 1962-63 I had carried a heavy load of sweet memories which still give me happiness in my leisure hours. I pray God for your good health.

I have almost settled in Nagpur, in teaching profession, in the same institute where I had studied. I feel nice about it and feel very much proud when I am with those who taught me.

My wife, Meena, along with my family also send their best regards. They would be very much glad to receive

an autographed photograph of yours from you if you can send one and oblige all of them and me too!

I once again wish you a very happy new year,

Yours most obediently

S. Jalehare

in wdt 10/1/72

When replying please quote
Number, Date and Subject

UNIVERSITY OF CALCUTTA
SENATE HOUSE,
CALCUTTA—12

The 2.2.76 19

To

Prof. G. Natta,
University of Milon,
Milon, Italy.

Dear Sir,

In inviting your kind attention to this office letter No. 4420/D.Sc. dt. 2.1.76 I am to inform you that no letter conveying your consent to examine the undernoted thesis has reached this office till now.

I shall be obliged if you kindly treat the matter as urgent and let me know at your earliest, if you agree to examine the thesis. The thesis will be sent to you on receipt of your letter of acceptance of the examinership.

Yours faithfully,

Chakravorti
Assistant Registrar.

Title of the thesis : " Studies on vinyl palymerisation".

Submitted by Sri/~~Smt~~ Dr. Mukul Biswas, M.Sc., Ph.D.,

for ~~Ph.D.(Arts/Sc./Med.)~~/D.Sc./~~XXXX~~ degree of this University.

SCUP—78R—15-10-75—2,000.

Purna

Sentirei Piacere se si sente di esaminare la tesi o se può indicare qualcuno tenendo conto che siamo non [illegible]

UNIVERSITY OF CALCUTTA
SENATE HOUSE,
CALCUTTA—12.

No. 4420/D.Sc.

The 29th Dec., 1975

Prof. G. Natta,
University of Milan,
Milan, Italy.

Dear Sir,

I have the honour by direction of the Vice-Chancellor and Syndicate to invite you to act as a member of the Board of Examiners to adjudicate upon the undermentioned thesis submitted for the ~~Ph.D.~~ D.Sc.) Degree of this University in Chemistry.

Each member of the Board of Examiners is paid an honorarium of Rs. 100 (one hundred rupees) only. The thesis covers 162 typed pages.

In case you accept the appointment it will be expected that your report will be made available to the University within three months.

I shall feel obliged if you would kindly let me know, at your earliest convenience, whether you are agreeable to examine the thesis.

A copy of the thesis will be forwarded to you in case you condescend to accept the appointment.

Yours faithfully,

Asstt. Registrar.

Name of the candidate: Dr. Mukul Biswas, M.Sc., Ph.D.

Title of the thesis: "Studies on Vinyl Polymerisation".

kd/-

SCUP—5R—13 6·73—4,000.

Sept. 21, 1970

Dr. S. B. Dabhade,
Laxminarayan Inst. of Technol
Nagpur University
Nagpur (India)

ourref. 186/lmv

Dear Dabhade:

Your very kind letter has sincerely moved me. I am happy that you have such a good souvenir of your stay with us. Both I and Prof. Pegoraro remember you with great pleasure, and send you our best congratulations upon your Ph.D.

I am sure that you will get ever increasing success in your work and wish you all the best for your life.

Very sincerely,

Giulio Natta

DR. S. B. DABHADE,
B. Sc., B. Sc. (Tech)., M. Tech., Ph.D.,
A. M. I. I. Chem. E.,
Reader in Chemical Technology

LAXMINARAYAN INSTITUTE OF TECHNOLOGY
NAGPUR UNIVERSITY, NAGPUR.

Dated 10th Sept 1970.

Most respected Prof. Dr. Natta,

Sir, I hope you remember me as Indian student who had come to work under your guidance under the Italian Government Scholarship Scheme in 1962.

It gives me great pleasure to inform you that recently, the degree of Doctor of Philosophy was awarded by Nagpur University on my work on " Studies of some chelates of Scandium, Yttrium and Lanthanum and their industrial applications". The degree shall be conferred on 17th Oct.70 in the University Convocation.

Sir, my association with your institute, specially with Dr. Mario Pegoraro, and the moments I had spent in your presence, and the environment I had in Italy have been most unforgettable things in my life.

I, like to think that I shall be always able to do things, which shall make me worthy of my associations with you. For such things I need your blessings and a word of courage.

I hope you are in good health and pray God to give a long and happy life.

Obediently Yours

Shrikant Dabhade

(Shrikant Dabhade)

Sept.11, 1968

P.G.Bose, M.A., Deputy Registrar
Indian Institute of Technology
P.O. Kharagpur Technology,
West Bengal (India)

your ref.IIT/2-2/B42/95(ARP)
our ref. 356 & 364/lmv

Dear doctor Bose:

Further to our previous correspondence, these are my comments on the Ph.D. thesis "Catalytic Vapour Phase Oxidation of Toluene to Benzaldehyde in Fixed and Fluidised Beds" by Shri A.R. Sundara Paripoornam. The copy of the thesis is being returned to you by registered surface mail.

The study of the properties of catalysts based on oxides and mixed oxides, which determine selectivity in oxidation reactions of olefinic and aromatic hydrocarbons, is one of the most up-to-date problems in catalysis. An excellent contribution to the problem is given by the author with a lot of experimental results obtained in a systematic way.
The program of research suggests that the author is more interested in adjusting a good catalyst for the synthesis of benzaldehyde rather than in investigating the mechanism of oxidation.
In fact, the detection of intermediate reaction products is harder when working with high conversions; however, the study of the effect of additions in the starting mixture, and the comparative study of the oxidation of possible intermediate products led to new data on the mechanism of oxidation of toluene.
The results on the effect of the additions in the starting mixture suggest an oxidation mechanism where the intermediate species are ions and not radicals and also suggest that the surface acidity must play a role in the catalytic behaviour of the catalysts studied by the author.
It cannot be completely excluded the formation of benzyl alcohol as an intermediate (one should work at lower conversions and using a more sensitive analytical method).
The author should check whether, during the oxidation of benzyl alcohol, the catalyst is reduced and hence deactivated.
It is praiseworthy that the author uses two types of reactors (as it should be more generally done) when reporting the data on activity.
It is interesting to observe that the catalysts investigated by the author exhibit a higher activity than the values known from literature.

./.

Sept. 11, 1968

Some syntax errors exist in the computer program.

I personally think that the work developed by Shri A.R.Sundara Paripoornam is worth of the Ph.D. Degree.

Kindest regards,

(Prof.Giulio Natta)

Encl:

[redacted]

Indian Institute of Technology
P.O.Kharagpur Technology
West Bengal, India
-oOo-

P. G. Bose, M.A.,
Deputy Registrar.

No.III/2-2/B42/95(AMP)
Dated, the 18th July, 1968

To

Prof. G. Natta, Nobel Laureate,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milano, Milano,
I t a l y.

Dear Sir,

I thank you for your letter dated **11.10.67** accepting our invitation to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic Vapour Phase Oxidation of Toluene to Benzaldehyde in Fixed and Fluidised Beds"

submitted by **Shri A.R.Sundara Paripoornam a Research Scholar of this Institute** for admission to the Degree of Doctor of Philosophy (Ph.D.).

I have despatched to-day one copy of the thesis by Registered Parcel/Air Mail with the request that you would kindly examine the same and forward your report by AIR MAIL, if convenient, by the **end of 31st August,1968.**

I also request you kindly to return the copy of the thesis by SURFACE MAIL and the enclosed Bill for honorarium, duly signed, along with your report.

A copy of the Regulation for Ph.D. Degree is enclosed. It may please be noted that -

a) the candidate is normally not required to pass any written examination on a prescribed curricula of studies,

b) if the Board of Examiners report favourably on the thesis the candidate will normally be required to satisfy another Board of Examiners in a Viva-voce Examination on the thesis and in closely allied subjects of study.

A copy of the Rules for D.Sc. Degree which is the higher Doctorate Degree awarded by the Institute, is also enclosed for reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Yours faithfully,

15/7/68

BY REGD. AIR MAIL PARCEL

Indian Institute of Technology
P.O.Kharagpur Technology
West Bengal, India
-oOo-

P. G. Bose, M.A.,
Deputy Registrar.

No.III/2-2/B42/95(ARP)
Dated, the 15th July,1968

To
Prof. G. Natta, Nobel Laureate,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milano, Milano,
I t a l y.

Dear Sir,

I thank you for your letter dated 11.10.67 accepting our invitation to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic Vapour Phase Oxidation of Toluene to Benzaldehyde in Fixed and Fluidised Beds"

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A copy of the Rules for D.Sc. Degree which is the higher Doctorate Degree awarded by the Institute, is also enclosed for reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Yours faithfully,

of Doctor of Philosophy (Ph.D.)

A candidate for a degree of Doctor of Philosophy must comply with requirements as prescribed below:

Registration:

A candidate desirous of entering on the curriculum for the degree shall apply to the Registrar in the prescribed form with prescribed fee stating his proposed major field of study. Registration shall ordinarily be made on the basis of a written test or interview or both as may be decided by the Doctoral Scrutiny Committee after considering the application.

Minimum Period of Research:

After registration, a candidate shall be required to devote a minimum period of three years' advanced study and research except as otherwise provided.

Qualifying Examination:

Any time prior to the submission of the thesis a candidate shall be required to show evidence of advanced study by oral or written examination or otherwise, as may be decided by the Academic Council on the recommendation of the Doctoral Scrutiny Committee, in three topics, of which two shall be chosen from his major field of studies and one from any allied minor field. The Academic Council may, however, on the recommendation of the Doctoral Scrutiny Committee, grant exemption, as a very special case, in one or more topics if the candidate has previously acquired proficiency in those subjects. Lists of such approved topics forming part of the regular postgraduate -- courses offered by the Institute will be available in every department. A candidate may, if considered necessary, be permitted to attend an appropriate postgraduate course at the Institute without payment of any additional fee. It shall be expedient onevery candidate to meet these requirements as soon as possible after registration.

Synopsis:

A candidate who, in the opinion of the supervisor, has made adequate progress in his research work may apply for permission to submit the thesis enclosing two copies of the synopsis of the thesis. The synopsis shall be considered by the Doctoral Scrutiny Committee. In the case of a member of the academic staff permitted to work independently he may apply for permission to submit the thesis enclosing two copies of the synopsis of the thesis as and when his work is considered complete.

A research worker shall not be allowed to apply for permission to submit his thesis unles (i) he has been regular in his work and (ii) he has satisfied his supervisor about his progress.

The Academic Council shall determine the eligibility of a research worker to submit his thesis on the recommendation of the Doctoral Scrutiny Committee set up for the purpose and after considering the synopsis of the thesis.

Thesis Examination:

If the Doctoral Scrutiny Committee is of the opinion that the synopsis is of the standard required, it shall recommend to the Academic Council a panel of names of at least five specialists in order of preference to adjudicate upon the thesis under consideration. The Academic Council shall then appoint three examiners - one of whom shall be the supervisor and the other two from the panel of names

... 2.

recommended by the Doctoral Scrutiny Committee. These three examiners shall constitute the Board of Examiners. The Aademic Council shall also appoint a Viva-Voce Board comprising the Supervisor and one External Examiner. In case both the External examiners are foreigners an Indian specialist shall be appointed as the second member of the Viva-Voce Board. In the case of a member of the staff of the Institute permitted to work independently the Board of Examiners and the Viva-Voce Board shall include in the place of Supervisor a senior teacher of the Institute in the allied field of specialisation or an outside expert to be appointed by the Academic Council on the recommendation of the Doctoral Scrutiny Committee. All correspondence with the Examiners shall be made by the Registry.

Submission of Thesis:

A candidate shall be required to submit in triplicate and in the approved form his thesis within a maximum period of two months from the date of submission of the synopsis. The thesis shall be examined separately by the two external examiners and the supervisor or the third examiner, as the case may be. All the three examiners shall be required to report separately on the thesis and forward their recommendation to the Registry which shall place the reports together before the Doctoral Scrutiny Committee. The examiners shall forward their reports with -- recommendation preferably within two months after receiving the thesis.

Reports of the examiners shall be final. On receipt of the reports from the Registry, the Doctoral Scrutiny Committee shall consider them and recommend, if the reports are unamimous and favourable, that the candidate be required to appear before the Viva-Voce Board appointed for the purpose who shall test the depth and breadth of knowledge of the candidate in the special field of research and also in allied fields of study. The Viva-voce Board shall report on the competence of the candidate and submit its recommendation for consideration of the Doctoral Scrutiny Committee which shall place before the Academic Council the reports of the examiners of the thesis and the Viva-voce Examination. The candidate shall, ordinarily, be given one month's notice to appear before the Viva-Voce Board.

If the majority of the examiners report that the thesis is not upto the standard for the degree, the Academic Council may, on the recommendation of the Doctoral Scrutiny Committee, permit submission of a revised thesis on payment of the prescribed fee after a suitable time to be fixed by the Council. In no case, however, resubmission of a work without modification along the line of criticism made by the examiners of the thesis shall be allowed nor shall there be a case of resubmission of a thesis rejected for the second time.

In the event of a serious difference of opinion between the two external examiners of the thesis, the Academic Council, on the recommendation of the Doctoral Scrutiny Committee, may refer the thesis to a third external examiner whose verdict shall be deemed as final.

If the members of Viva-Voce Board are not satisfied with the oral examination, the Academic Council may, onthe recommendation of the Doctoral Scrutiny Committee, and the members of the Viva-Voce Board, permit the candidate to appear again at an oral examination afterxa a period of six months but within a period not exceeding one year from the date of the first oral examination.

Requirement of the Thesis:

The thesis shall be a piece of research work characterised either by discovery of facts or by fresh approach towards interpretation of facts and theories. It should bear evidence of the candidate's capacity for critical examination and judgement and also his ability to carry out independent investigation, development or design.

upto the standard for the degree, the Academic Council may, on the recommendation of the Doctoral Scrutiny Committee, permit submission of a revised thesis on payment of the prescribed fee after a suitable time to be fixed by the Council. In no case, however, resubmission of a work without modification along the line of criticism made by the examiners of the thesis shall be allowed, nor shall there be a case of resubmission of a thesis rejected for the second time.

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17. Requirement of the Thesis. - The thesis shall be a piece of research work characterised either by discovery of facts or by fresh approach towards interpretation of facts and theories. It should bear evidence of the candidate's capacity for critical examination and judgement and also his ability to carry out independent investigation, development or design.

18. The thesis shall be written in English and shall be submitted in triplicate, typewritten or printed. In the case of typewritten copies, one shall be the original (ribbon) copy and the other two shall be clear and legible carbon copies. In the preface to the thesis, the candidate shall state whether the thesis is based on the discovery of new facts by him or of new relations of facts observed by others or whether it constitutes mainly an exhaustive study and criticism of the published work of others, and how it contributes to the advancement of knowledge in the particular field of research dealt with. The candidate shall further forward a statement indicating the sources from which his information has been derived and the extent to which he has based his work on the work of others and shall indicate which portion or portions of his thesis he claims as original. Where a candidate presents a joint work, he shall state clearly the portion which is his own contribution as distinguished from the portion contributed by his collaborators. This statement shall be certified as correct by the supervisor as well as by the candidate. The candidate may also forward with his application three copies of any original contribution to the advancement of knowledge in the subject of his thesis, or any cognate subject published by him independently or jointly with others, upon which he relies in support of his candidature.

19. A thesis submitted for the degree of Doctor of Philosophy shall not be one for which a degree, or diploma, has already been awarded, but a candidate shall not be precluded from incorporating his own work which has already been submitted for a degree or diploma in this Institute or elsewhere in a thesis covering a wider field provided that he shall indicate in a statement accompanying the thesis any work which has been so incorporated.

20. Nothing contained in these regulations shall preclude a candidate from publishing, either independently or jointly with others, the results of the work incorporated in his thesis, at any time before submitting the thesis for examination provided that three copies of the paper shall be submitted with the thesis.

21. A candidate shall be deemed to have attained the requisite standard for the degree of Doctor of Philosophy if in his thesis and subsequent Viva-voce test he has given evidence of originality, a through grasp in the special field of research and a fair knowledge in the allied fields of study.

P.T.O.

22. On the recommendation of the Doctoral Scrutiny Committee and after considering the reports of the Board of Examiners and of Viva-voce test, the Academic Council shall decide whether the candidate may be admitted to the degree of Doctor of Philosophy.

23. For the degree of Doctor of Philosophy in any branch of study the graduate shall receive a diploma wherein shall be set forth the branch in which he has qualified.

24. Two copies of all theses ~~xxxxx~~ submitted shall be retained in the Institute.

India

Jan.27, 1966

P.G.Bose, M.A., Deputy Registra
Indian Institute of Technology,
P.O.Kharagpur Technology,
West Bengal, India

Your ref.IIT/2-2/B42/95(ARD)65

our ref.21/GN/lmv

Dear doctor Bose:

With regard to your letter of Jan.8, I wish to inform you that I have examined the thesis by Mr.A.R.Das: "Catalytic Synthesis of Lactic Acid and its Esters from Carbon Monoxide, Acetaldehyde and Water-Alcohols under High Pressure".

The work developed by the candidate is original and predominantly of experimental character. However, a thermodynamic investigation and the discussion of the reaction mechanism are also comprised. The work was carefully accomplished both with regard to the performance of the experiments and to the systematicity of the investigation.
Several experimental conditions have been tested and, in my opinion, those giving the highest possible yields by the catalyst systems investigated, have been found.
The results obtained can also be of practical interest, due to the applications of lactic acid and of its esters.

I personally think that the work developed by Mr.A.R.Das is worth of the Ph.D. Degree in Applied Chemistry.

Kindest personal regards.

Giulio Natta

Inviate anche tesi —

INDIAN INSTITUTE OF TECHNOLOGY
P.O. KHARAGPUR TECHNOLOGY
WEST BENGAL, INDIA.

P. G. Bose, M.A.,
Deputy Registrar.

No.IIT/2-2/B42/95(ARP)67
Dated: 4th October, 1967

To

Prof.G.Natta, Nobel Laureate,
Director, Institute of Industrial Chemistry,
Polytechnic of Milan, Milan,
I t a l y .

Sir,

I am directed by the Senate of this Institute to invite you to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic Vapour Phase Oxidation of Toluene to Benzaldehyde in Fixed and Fluidised Beds"

submitted by Shri A.R.Sundara Paripoornam a Research Scholar of this Institute in support of his candidature for the Degree of Doctor of Philosophy (Ph.D.). Under the rules, each member of the Board of Examiners is entitled to a token honorarium of Rs.100/-(Rupees One hundred) only. On receipt of your kind acceptance of the offer, I shall arrange to forward a copy of the thesis to you for adjudication.

The Ph.D. Degree is the first degree on research work characterised either by discovery of facts and theories. It should however bear evidence of the candidate's capacity for critical examination and judgement and also his ability to carry out independent investigation, development or design. A Ph.D.candidate is also required to show satisfactory evidence of advanced study, by Oral or Written examination.

The work of the Board of Examiners will be carried generally through correspondence and a foreign examiner is not required to come to the Institute.

The Institute also awards Doctor of Science (D.Sc.) Degree which is a higher Research Degree. The thesis of the D.Sc. Degree is a record of original research undertaken by the candidate and actually carried out by him.

I shall very much appreciate an early reply,

Yours faithfully,

4/10/67

(P. G. Bose.)
Deputy Registrar.

Indie

October 11, 1967

Your ref.: NoIIT/2-2/B42/
95(ARP)67

our ref.534/rl

P.G. Bose, M.A., Deputy Registra
Indian Institute of Techno
P.O. KHARAGPUR Technology
West Bengal (India)

Dear Mr. Bose,

with regard to your letter of October 4, 1967, I wish to inform you that I accept to act as a member of the Board of Examiners to adjudicate upon the thesis on " Catalytic Vapour Phase Oxidation of Toluene to Benzaldehyde in Fixed and Fluidised Beds ", submitted by Shri A.R. Sundara Faripoornam.

Therefore, at your earliest convenience, please send me a copy of the thesis.

Sincerely yours,

Giulio Natta

of Doctor of Philosophy (Ph.D.)

A candidate for a degree of Doctor of Philosophy must comply with requirements as prescribed below:

Registration:

A candidate desirous of entering on the curriculum for the degree shall apply to the Registrar in the prescribed form with prescribed fee stating his proposed major field of study. Registration shall ordinarily be made on the basis of a written test or interview or both as may be decided by the Doctoral Scrutiny Committee after considering the application.

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After registration, a candidate shall be required to devote a minimum period of three years' advanced study and research except as otherwise provided.

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A candidate who, in the opinion of the supervisor, has made adequate progress in his research work may apply for permission to submit the thesis enclosing two copies of the synopsis of the thesis. The synopsis shall be considered by the Doctoral Scrutiny Committee. In the case of a member of the academic staff permitted to work independently he may apply for permission to submit the thesis enclosing two copies of the synopsis of the thesis as and when his work is considered complete.

A research worker shall not be allowed to apply for permission to submit his thesis unles (i) he has been regular in his work and (ii) he has satisfied his supervisor about his progress.

The Academic Council shall determine the eligibility of a research worker to submit his thesis on the recommendation of the Doctoral Scrutiny Committee set up for the purpose and after considering the synopsis of the thesis.

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If the Doctoral Scrutiny Committee is of the opinion that the synopsis is of the standard required, it shall recommend to the Academic Council a panel of names of at least five specialists in order of preference to adjudicate upon the thesis under consideration. The Academic Council shall then appoint three examiners - one of whom shall be the supervisor and the other two from the panel of names

... 2.

recommended by the Doctoral Scrutiny Committee. These three examiners shall constitute the Board of Examiners. The Academic Council shall also appoint a Viva-Voce Board comprising the Supervisor and one External Examiner. In case both the External examiners are foreigners an Indian specialist shall be appointed as the second member of the Viva-Voce Board. In the case of a member of the staff of the Institute permitted to work independently the Board of Examiners and the Viva-Voce Board shall include in the place of Supervisor a senior teacher of the Institute in the allied field of specialisation or an outside expert to be appointed by the Academic Council on the recommendation of the Doctoral Scrutiny Committee. All correspondence with the Examiners shall be made by the Registry.

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Reports of the examiners shall be final. On receipt of the reports from the Registry, the Doctoral Scrutiny Committee shall consider them and recommend, if the reports are unanimous and favourable, that the candidate be required to appear before the Viva-Voce Board appointed for the purpose who shall test the depth and breadth of knowledge of the candidate in the special field of research and also in allied fields of study. The Viva-voce Board shall report on the competence of the candidate and submit its recommendation for consideration of the Doctoral Scrutiny Committee which shall place before the Academic Council the reports of the examiners of the thesis and the Viva-voce Examination. The candidate shall, ordinarily, be given one month's notice to appear before the Viva-Voce Board.

If the majority of the examiners report that the thesis is not upto the standard for the degree, the Academic Council may, on the recommendation of the Doctoral Scrutiny Committee, permit submission of a revised thesis on payment of the prescribed fee after a suitable time to be fixed by the Council. In no case, however, resubmission of a work without modification along the line of criticism made by the examiners of the thesis shall be allowed nor shall there be a case of resubmission of a thesis rejected for the second time.

In the event of a serious difference of opinion between the two external examiners of the thesis, the Academic Council, on the recommendation of the Doctoral Scrutiny Committee, may refer the thesis to a third external examiner whose verdict shall be deemed as final.

If the members of Viva-Voce Board are not satisfied with the oral examination, the Academic Council may, onthe recommendation of the Doctoral Scrutiny Committee, and the members of the Viva-Voce Board, permit the candidate to appear again at an oral examination afterxa a period of six months but within a period not exceeding one year from the date of the first oral examination.

Requirement of the Thesis:

The thesis shall be a piece of research work characterised either by discovery of facts or by fresh approach towards interpretation of facts and theories. It should bear evidence of the candidate's capacity for critical examination and judgement and also his ability to carry out independent investigation, development or design.

submitted in triplicate, typewritten or printed. In the case of typewritten copies, one shall be the original (ribbon) copy and the other two shall be clear and legible carbon copies. In the preface to the thesis, the candidate shall state whether the thesis is based on the discovery of new facts by the candidate or of new relations of facts observed by others or whether it constitutes mainly an exhaustive study and criticism of the published work of others, and how it contributes to the advancement of knowledge in the particular field of research dealt with. The candidate shall further forward a statement indicating the cources from which his information has been derived and the extent to which he has based his work on the work of others, and shall indicate which portion or portions of his thesis he claims as original. There a candidate presents a joint work, he shall state clearly the portion which in his own contribution as distinguished from the portion contributed by his collaborator. The statement shall be certified as correct by the supervisor as well as by the candidate. The candidate may also forward with his application three copies of any original contribution or contribution to the advancement of knowledge in the subject of his thesis, or any cognate subject published by him -- independently or jointly with others, upon which he relies in support of his candidature.

A thesis submitted for the Ph.D. Degree shall not be one for which a degree, or diploma, has already been awarded, but a candidate shall not be precluded from incorporating his own work which has already been submitted for a degree or diploma in this Institute or elsewhere in a thesis covering a wider field, provided that he shall indicate in a statement accompanying the thesis may work which has been so incorporated.

Nothing contained in the Ph.D. regulations ~~xhx~~ shall preclude a candidate from publishing, either independently or jointly with others, the results of the work incorporated in his thesis, at any time before submitting the thesis for examination provided that three copies of the paper shall be submitted with the thesis.

Two copies of all thesis submitted shall be retained in the Institute.

Doctor of Science

Graduates who has obtained Ph.D. or Master's degree or its equivalent may offer themselves for the degree of Doctor of Science. In the case of Master's degree holder or its equivalent a period of 3 years standing shall be essential.

A candidate for the degree shall have to apply in the prescribed form to the Registrar and submit a synopsis of the thssis for consideration of the Doctoral Scrutiny Committee.

After considering the synopsis of the thesis the Doctoral Scrutiny Committee shall forward recommendation to the Academic Council together with a panel of names for appointment of Examiners to adjudicate upon the thesis.

All candidates for the Degree of Doctor of Science shall with the approval of the Academic Council and on the recommendation of the Doctorate Committee submit for examination in triplicate a thesis or a published memoir or work. The thesis shall be a record of original research undertaken by the candidate and actually carried out, ans shall be accompanied by a declaration signed by him that the work has been done and the thesis composed by him.

Before acceptance for adjudication a thesis or an important part of it, shall have been published either as a book or in periodicals of recognised standing.

The Academic Council shall appoint three experts including at least one teacher of the Institute to examine the thesis and adjudicate upon the merit of the candidate.

The results of the independent examination of the thesis and of adjudication shall be reported to the Doctorate Scrutiny Committee who shall if they think fit make recommendation thereon to the Academic Council.

Two copies of all thesis submitted shall be retained in the Institute.

INDIAN INSTITUTE OF TECHNOLOGY
P.O. KHARAGPUR TECHNOLOGY
WEST BENGAL.
INDIA.

From : P. G. Bose, M.A.,
Deputy Registrar.

No. IIT/2-2/B42/95(ARD)65
Dated, the 1st December, 1965.

To

Prof. G. Natta
Nobel Laureate,
Director,
Institute of Industrial Chemistry,
Polytechnic of Milan,
Milan, Italy.

- 9 DEC 1965
653

Sir,

I am directed to inform you that the Senate of this Institute have decided to appoint you as a member of the Board of Examiners to adjudicate upon the thesis on

" Catalytic synthesis of lactic acid, methyl lactate and ethyl lactate from carbon monoxide, acetaldehyde, water/methanol/ethanol "

submitted by Sri A. R. Das, Research Scholar of this Institute

in support of his candidature for admission to the degree of Doctor of Philosophy (Ph.D)/~~Doctor of Science (D.Sc.)~~. I am, therefore, to approach you kindly to agree to act as a member of the Board of Examiners. Under rules, each member of the Board of Examiners is entitled to a token honorarium of Rs.100/- (One hundred) only.

On receipt of your acceptance of the offer I shall arrange to forward a copy of the thesis to you for adjudication.

I shall very much appreciate an early reply.

Yours faithfully,

1/12/65

(P. G. Bose)
Deputy Registrar.

INDIAN INSTITUTE OF TECHNOLOGY
P.O. KHARAGPUR TECHNOLOGY
WEST BENGAL, INDIA.

Mpen
fen a Parcel
18/1/66

From : P. G. Bose, M.A.,
Deputy Registrar.

No. IIT/2-2/B42/95(ARD)65
Dated, the 8th Jan. 1966.

To

Prof. Giulio Natta
Istituto Di Chimica Industriale
Del Politecnnico
Piazza Leonardo Da Vinci, 32
Milano, Italy.

Dear Sir,

I thank you for your letter dated 10.12.65. accepting our offer to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic synthesis of lactic acid, methyl lactate and ethyl lactate from carbon monoxide, acetadehyde, water/ methanol/ethanol".

submitted by **Sri A.R. Das, Research Scholar of this Institute**

for admission to the Degree of Doctor of Philosophy (Ph.D.).

I have despatched to-day one copy of the thesis by Registered Parcel/ Air Mail with the request that you would kindly examine the same and forward your report by AIR MAIL if convenient by the **1st week of February, 1966.**

I also request you to kindly return the copy of the thesis by Surface Mail and the enclosed Bill for remuneration duly signed along with your report.

A copy of the Regulation for Ph.D. Degree is enclosed. It may please be noted that -

a) the candidate is normally not required to pass any written examination on a prescribed curricula of studies,

b) if the Board of Examiners report favourably on the thesis the candidate will normally be required to satisfy another Board of Examiners in a Viva-voce Examination on the thesis and in closely allied subjects of study.

A copy of the Rules for D.Sc. Degree which is the higher Doctorate Degree awarded by the Institute, is also enclosed for reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Yours faithfully,

Enclo : as stated above

8.1.66

(P. G. Bose)
Deputy Registrar.

INDIAN INSTITUTE OF TECHNOLOGY
P.O. KHARAGPUR TECHNOLOGY
WEST BENGAL, INDIA.

From : P. G. Bose, M.A.,
Deputy Registrar.

No. IIT/2-2/B42/95(ARD 1965
Dated, the 8th Jan. 1966.

To

Prof. Giulio Natta
Istituto Di Chimica Industriale
Del Politecnmico
Piazza Leonardo Da Vinci, 32
Milano, Italy.

Come d'accordo, esaminin per vopre pierte fer cuite expense PL

Dear Sir,

I thank you for your letter dated **10.12.65.** accepting our offer to act as a member of the Board of Examiners to adjudicate upon the thesis on

"Catalytic synthesis of lactic acid, methyl lactate and ethyl lactate from carbon monoxide, acetadehyde, water/ methanol/ethanol".

submitted by **Sri A.R. Das, Research Scholar of this Institute**

for admission to the Degree of Doctor of Philosophy (Ph.D.).

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a) the candidate is normally not required to pass any written examination on a prescribed curricula of studies,

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A copy of the Rules for D.Sc. Degree which is the higher Doctorate Degree awarded by the Institute, is also enclosed for reference.

I shall be much obliged if you would kindly acknowledge receipt of the thesis.

Yours faithfully,

Encl : as stated above

(P. G. Bose)
Deputy Registrar.

10.12.1965

Mr. P.G. BOSE, Deputy Registrar
Indian Institute of Technology
P.O. Kharagpur Technology
West Bengal - India

your ref. IIT/2-2/B42/95/(ARD)65
OUR REF. N. 653/r1

Dear Mr. Bose,

with regard to you letter of December 1, 1965, I wish to inform you that I accept to act as a member of the Board of Examiners to adjudicate upon the thesis on "Catalytic synthesis of lactic acid, methyl lactate and ethyl lactate from carbon monoxide, acetaldehyde, water/Methanol/Ethanol" submitted by Sri. A. R. Das.

Therefore, at your earliest convenience, please send me a copy of the thesis.

Sincerely yours,

Giulio Natta

Yerile Training (India)

24.5.1966

your ref.: No.IT/Cash/FE

Mr.K.C.Dutta, Asstt.Registrar
Indian Institute of Technology
P.O.Kharagpur Technology
Kharagpur, S.E.Rly (India)

Re : Remuneration for examining thesis of Sri A.R.Das

Dear Sir,

I acknowledge receipt of the Demand Draft No.015216/12/2 dt. 27.4.66 you kindly sent to me on May 6, 1966. Thanking you, I send you my best regards.

Sincerely yours,

(Prof.G.Natta)

Telephone : Hijli-222
Telegram : Technology, Kharagpur

BY AIR MAIL

INDIAN INSTITUTE OF TECHNOLOGY

P.O. KHARAGPUR TECHNOLOGY
KHARAGPUR, S. E. Rly.

No.IT/Cash/FE/ Dated,the 6th May,1966.

To

Prof.G. Natta N.L.
Institute Di Chimica Industriale
Del Politechnico,
Piazza Leonardo Da Vinci 32,
Milene, Italy.

Sub:- Remuneration for examining thesis of
Sri A.R. Das.

-.-.-.-.-

Dear Sir,

In enclosing herewith a Demand Draft No. 015216/12/2 dt. 27.4.66 for I.Lire 12,980.00, Italian Lire Twelve thousand nine hundred eighty*** on account of your remuneration for acting as a Member of the Board of Examiners for the aforesaid thesis, I am to thank you for all your help and co-operation in this connection.

I would be grateful if you would kindly acknowledge receipt of the Demand Draft.

Yours faithfully,

(K.C. Dutta.) 7.5.66
Asstt.Registrar (P).

Encl:- One Demand Draft.

sending it up. Pacor

sede Milano

Prof. O. Natta

21-5-66 190

Fattura 15216 a
Montedison Milano lit 12080.-

Rimborso pol. provvisorie

Girata a Pampuro
(assegno)

CR
12.5.66

UNIVERSITY OF CALCUTTA

SENATE HOUSE,

CALCUTTA—12.

No. 5557/D.Sc. ~~XXXXXX~~

The 23rd June, 1967.

26 JUN 1967

Professor G. Natta, N.L.,
Institute di Chimica Industriale del Politecnico,
Milan, Italy :

Dear Sir,

I have the honour by direction of the Vice-Chancellor and Syndicate to invite you to act as a member of the Board of Examiners to adjudicate upon the undermentioned thesis submitted for the ~~D.Phil.~~ D.Sc. ~~X~~ Degree of this University.

Each member of the Board of Examiners is paid an honorarium of Rs. 100 (one hundred rupees) only. The thesis covers 184 typed pages.

In case you accept the appointment it will be expected that your report will be made available to the University within three months.

I shall feel obliged if you would kindly let me know, at your earliest convenience, whether you are agreeable to examine the thesis.

A copy of the thesis will be forwarded to you in case you condescend to accept the appointment.

Yours faithfully,

(J. C. MUKHERJEE),
Assistant Registrar.

Name of the candidate : Sri Nirmalkumar Das, M.Sc., Class I

Title of the thesis : "Studies on Cationic Organoboron Complexes" :

SB.

SCUP—28R—27-10-65—5,000.

India

July 10, 1967

Mr.J.C.Mukherjee, Asstn.Registr
University of Calcutta
Senate House,
Calcutta-12

yur ref.3557/D.Sc.
our ref.412/lmv

Dear Mr.Mukherjee:

Thank you for your letter of June 26, 1967. As I never particularly studied the organometallic compounds of boron, I prefer not to examine the thesis: "Studies of Cationic Organoboron Complexes" by Sri Nirmalkumar Das.

Hoping to be of some help to you on another occasion, I send you kindest regards.

Giulio Natta