

Omuta 30th. 9, 1952

Prof. Ing. Ginlio Natta
Milano Politecnico
Piazza Leonardo da Vinci 32

Dear Sir

At my visiting of Milano-Politecnico on 7th. Jan. 1952 it was very glad for me that I could meet you by Prof. Padovani's introduction and visit your laboratory. I take this occasion to express my sincerest thanks for your kindness of showing me your laboratory. I hope that you will excuse me for my not writing you earlier. We are studying on the synthesis of acrylic acid ester from acetylene carbonmonoxide and alcohol and now it's technical research in pilot plant is in progress. Therefore we have read the abstract of Mr. Pino's article on oxo-reaction in recent Chemical Abstract (46 7079 1952) with much interests and we are especially so interested in the reaction of $C_2H_2 + 2CO + 2CH_3OH \rightarrow (CH_2COOCH_3)_2$ that we want to read their originals:

Gazz. Chim. ital.	<u>81</u>	625-34	(1951)
Chimica e industria	<u>31</u>	245	(1949)
Ibid	<u>27</u>	84 - 7	(1945) —
Ibid	<u>32</u>	201-7	(1950)

(We can understand Italian language.)
We would be very fortunate if you send us their copies under Mr. Pino's good understanding.

As application of carbonylation we have further studied on not only synthesis of acrylic acid ester but also aromatic and aliphatic acids or their esters and applied some patents in Japan. The former is sufficiently applicable for the manufacture of terephthalic acid and the later methyl acetate, of which we will inform you after publication. Accordingly we are also interested in your German Patent No. 820303 in this field that is abstracted in Chemisches Zentrallblatt 123 Nr. 21, 3405 (1952). Would you please present us it's specification. We will wait for your reply with much expectation.

Yours very truly,

K. Yoshikawa

Dr. K. Yoshikawa
Leader of Research
of

Mitsui Chemical Industry Co., Ltd.
P.O.B. No.17 Omuta
Kyushu, Japan

KYOTO UNIVERSITY
DEPARTMENT OF INDUSTRIAL CHEMISTRY
FACULTY OF ENGINEERING
YOSIDA, KYOTO, JAPAN

938
new star

T. Fueno
Département de Chimie Industrielle
Faculté de Science de l'Ingénieur
Université de Kyoto.
Yoshida, Kyoto, Japon

Déc. 16, 1955

Docteur G. Natta
Istituto di Chimica Industriale
Piazza Leonardo da Vinci
Milano, Italia

Monsieur le docteur,

Je porte intérêt à la problème concernant polymères isotactiques.

Je vous serais très obligé de m'envoyer la copie de votre article intéressant "Polymères Isotactiques," qui a été publié dans Makromol. Chem., 16, 213 (1955).

Veuillez agréer, monsieur, mes salutations empressées.

*Chiedere
how is it?*

J. Fueno

T. Fueno

~~442-3~~
177-8-9
181-4-6

H. L. 56



Vare
Museum Yiq

217

HYDE PARK HOTEL, KNIGHTSBRIDGE,

LONDON, S.W.1.

31st July, 1955
London.

Dr. Giulio Natta
Istituto di Chimica Industriale
Del Politecnico, Milano

Dear Dr. Natta,

Thank you for your letter,
which I got on July 25 at Cairo.
As it is impossible for me to come
to Zurich this time, I don't think
it possible to see you this time.

With best regards,

Sincerely yours,

Naoto Kaneyama.

July 5, 1955

Prof. Dr. G. Natta
Institute of Chemical Industry
Piazza Leonardo da Vinci 32,
Milano

7p
#-Strawins same

Dear Dr. Natta:

I am leaving here on July 20 for Oslo in order to attend the meetings of ICSU which are to be held from August 6 to 13. On way to Oslo I expect to visit National Research Council of Egypt and then fly to London through Minalowhere I shall arrive on July 29. I shall be most happy if you will be so kind to let have a chance to visit your Institute one afternoon either on July 29 or July 30.

Will you please write to me at c/o Dr. A. Riad Tourky, President, National Research Council, Dokki, Cairo and let me know if my visit to your Institute would not give you any inconvenience?

With my best wishes,

Very sincerely,

Naoto Kameyama
Naoto Kameyama
Scientific Research Institute
Komagome Bunkyo-ku, Tokyo

NK/sy

こゝにも通信文を記載することができます

This space is also for correspondence.

Naoto Kameyama
Scientific Research Institute
Komagome Bunkyo-ku, Tokyo



AEROGRAMME

Prof. Dr. G. Natta
Institute of Chemical Industry
Piazza Leonardo da Vinci 32,
Milano

I T A L Y

PAR AVION
航空

この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.



折込線

折込線

This space is also for correspondence.

こゝにも通信文を記載することができます

July 11, 1955

91

K. Stouffer

Dr. Naoto Kameyama
c/o Dr. Riad Tourky, President
National Research Council
DOKKI - Cairo

Dear Dr. Kameyama,

I received your letter of July 5, and I am sorry but, as I attend the International Congress of Pure and Applied Chemistry and the Macromolecular Symposium at Zurich, I shall be there from July 20 to 30 at the Hotel Plaza. If you have the opportunity of coming to Zurich, I shall be very glad to meet you there.

With best regards,

Very sincerely yours,

Giulio Natta

Omuta den 26. 1. 1955

An die
Herren Prof Dr. G. Natta und P. Pino
Istituto di Chimica Industriale
Piazza Leonardo da Vinci
Milano

Sehr geehrte Herren !

Ich wünsche Ihnen glückliches neues Jahr !

Ich habe Ihnen lang nicht geschrieben. Ich möchte Ihnen meine Hochachtung für Ihre fortlaufenden Arbeiten über die Carbonylierung aussprechen. Ein Teil unserer Arbeiten über die Acrylestersynthese usw. haben wir in dem Bull. Chem. Soc. Japan veröffentlicht, so haben wir Ihnen eine Reihe der Sonderdrücke mit der anderen Post übersandt.

Nun wäre ich sehr dankbar, wenn Sie mir Ihre Sonderdrücke von Gazz. Chim. ital. 84, 443 - 452, 453 - 462 (1954), die ich deren kurze Vorstellung in J. Appl. Chem, 4, ii, 365 (1954) gefunden haben, übersenden könnten.

Mit den besten kollegialen Grüßen
Ihr sehr ergebener

K. Yamamoto

K. Yamamoto.

c/o Miike Senryo
P.O.B. No. 17 Omuta
Fukuoka, Japan

February 2, 1955

Mr. K. Yamamoto
c/o Miike Senryo
P.O.B. No. 17 Omuta
Fukuoka, Japan

Dear Sir,

I received your kind letter and I reciprocate the best wishes for a Happy New Year. I thank you very much for the abstracts you sent me, and I send you, under separate cover, the abstracts of Dr. Pino and coworkers, that you asked me for, *and some abstracts of mine*

Dr. Pino joins me in sending you the best regards.

Very sincerely yours,

G. NATTA

560

Paris station

November 3, 1956

Prof. O. NOMOTO
Kobayasi Institute of Physical
Research
KOKUBUNZU, TOKYO , JAPAN

Dear Prof. Nomoto,

I wish to thank you very much for your interesting
paper on ultrasounds, you kindly sent to me.

With my best regards.

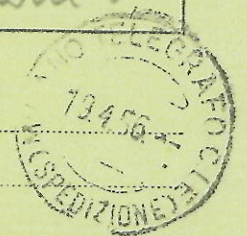
Sincerely yours,

Giulio Natta

INDICAZIONI D'URGENZA	Ricevuto il 19..... ore..... RICEVENTE	Le ore si contano sul meridiano corrispond dell'Europa Centrale. Nei telegrammi impressi a caratteri non dopo il nome del luogo di origine rappresenta il secondo quello delle parole, gli altri la data e l'ora e i minuti della presentazione.		CT 14,30+	FR IDAY+
	Pel circuito N.			(ufficio)	
Qualifica	DESTINAZIONE	PROVENIENZA	NUM. 0	PAROLE	DATA DELLA PRESENTAZIONE
	C ^o FI -	19 APR. 56	0	19 35	Giorno e mese Ore e minuti
		R. MARTINO			Via e indicazioni eventuali d'ufficio Yam Stron

50 MLN FIRENZE 51200 12 19 910+

VISIT 14,30 FRIDAY MATSUMOTD +



Cy

333 A

Vane Stron

Kurashiki Rayon,
Kurashiki Plant.
Kurashiki, Okayama,
Japan
Feb. 20, 1956

Dear Prof. Natta

After joining the International Symposium on
Macromolecular Chemistry at Rehovot, I would visit
your laboratory about on April 20, if it would suit you.
I hear your participation, so I expect to see you in
Israel and then I would get the exact date which is
convenient for you. Seeing you soon, I hope.

Sincerely yours,

M. Matsumoto

Dr. Masakazu Matsumoto

Handwritten notes in Japanese:
23 1/2 ...
...

248A

March 2, 1956

vani stro

Dr. Masakazu Matsumoto
Kurashiki Rayon - Kurashiki Plant
Kurashiki, Okayama, Japan

Dear Dr. Matsumoto,

I received your letter of February 20, and I inform you that I am sorry but I cannot attend to the International Symposium on Macromolecular Chemistry to be held in Rehovot. Therefore, I shall be glad to meet you in Milan on April 20, and not later, as I shall be obliged to leave Milan on April 21 or 22.

With best regards.

Sincerely yours,

Giulio Natta

714 A
June 1, 1956

Marie Stro

MacDonald (Hong Kong) Ltd.
Importers & Exporters
Naka 12-Gokan (5-Go)
Marunouchi, Chiyoda-Ku
P.O.Box 855 Tokyo Central
TOKYO = JAPAN

Dear Sirs,

I received your letter of May 24 (Ref. G-13), that I have sent to the "Settore Progetti e Studi - Società Montecatini - Via F. Turati 18 - Milano (Italy)".

I wish to inform you that the Montecatini Co. possess all the rights on my patents, concerning the isotactic polymers production. Therefore, you may address yourself to the Montecatini, to obtain all the information you need.

Very truly yours,

Giulio Natta

December 19, 1956

910
Vani str.

To

Itoh & Co., Ltd.
Tokyo Branch
13, 1-Chôme, Horidomecho
Nihonbashi, Chuo-ku
T O K Y O - Japan

Polypropylene

Dear Sirs,

*quinate unione
Sup. Orsoni*

Referring to your letter of December 11, I wish to inform you that all rights on my patents on isotactic polymers are owned by Montecatini Company. Therefore, you may address yourselves directly to this Company, to the attention of Dr. Ing. B. Orsoni, Director Settore Progetti e Studi, Via F. Turati 18, Milano).

With best regards.

Very truly yours,

(Prof. G. Natta)

KYOTO UNIVERSITY
DEPARTMENT OF INDUSTRIAL CHEMISTRY
FACULTY OF ENGINEERING
YOSIDA, KYOTO, JAPAN

933A
~~124~~
Vane Shan

Apr. 19, 1956

Dr. G. Natta
Institute of Ind. Chem.,
Polytechnic of Milan
Milan, Italy

Dear Dr. Natta,

Thank you very much for your kindness of sending
the valuable reprints of your interesting articles
concerning "Isotactic Polymers."

Sincerely Yours,

T. Fueno

T. Fueno

*Miss G. Natta
Polytechnic of Milan
Milan, Italy*

413
vare Natta

20 Ottobre 1956

Dr. K. YAMAMOTO
Mitsui Miike Senryo
OMUTA - Fukuoka - Japan

Egregio Dottore,

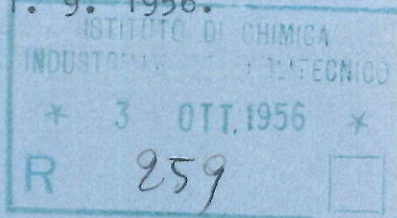
Facendo seguito alla mia lettera dell'8 Ottobre, sono lieto di informarLa che ho pregato l'Ufficio Brevetti della Società Montecatini di inviarLe direttamente le copie dei brevetti da Lei richiesti.; Nei prossimi giorni Le invieranno perciò copia dei primi brevetti italiani che risultano già pubblicati.

La prego di gradire i miei migliori saluti.

Giulio Natta

An den
Herrn Prof. Dr. G. Natta
Istituto di Chimica Industriale del
Politecnico,
Milano, Italia.

Omuta, den 21. 9. 1956.



Sehr geehrter Herr Dr. G. N A T T A !

Wie geht's Ihnen? Ich habe die Nachricht von Ihnen gehört, daß Sie in Amerika gefahren sind, Wie lange sind Sie dort geblieben? In Japan sind Ihre glänzenden Leistungen über die isotaktischen Polymere hochgeschätzt. Auch unsere Firma Mitsui Chemical Industry Co. Ltd. hat das große Interesse insbesondere an die Herstellung von Polypropylen.

Jüngst habe ich ein Buch "Simposio Internazionale di Chimica Macromolecolare", erschienen von "La Ricerca Scientifica" zur Hand gehabt, in dem ich Ihre zwei Abhandlungen mit großem Interesse durchgelesen. Ihre Theorie betreffs des Mechanismus der Polymerisation des Äthylens unter Anwendung von Aluminiumalkylverbindungen, obwohl die Reaktionsbedingungen von denen in der Herstellung des Niederdruckpolyäthylens etwas verschieden seien, war mir sehr andeutungsvoll. Könnte man beim Niederdruckpolyäthylen (in Anwesenheit von Aluminiumalkyl und Titan-tetrachlorid) Titan anstatt des Aluminiums betrachten, da es sein kann, Titan dabei die Hauptrolle spielen müßte.

Ist es sehr unhöflich von mir, wenn ich Sie um folgende Sachen bitte?

1) Ich möchte Ihre neue Abhandlung über die stereospezifischen Polymere von alpha-Olefinen bekommen, die in "La Chimica e l'industria" 38, 124 (1956) veröffentlicht wurde, deren kurze Übersicht ich in "Chem. Abs." gelesen hatte.

2) Es würde meine außerordentliche Freude sein, wenn Sie mir eine Kopie von italienischer Patentschrift Ihrer Erfindung über Polymerisation von Propylen besorgen könnten, falls es schon publiziert worden ist.

Ich habe die von Ihnen übersandten italienischen Abhandlungen bestimmt ins Japanisch übersetzt und deren Übersetzungen weit in meiner Firma verteilt.

Es tut mir leid, daß ich Italianisch lesen aber noch nicht Italianisch schreiben kann.

Ich wünsche Ihnen, daß Sie immer noch großen Erfolg haben.

Es grüßt Sie Ihr sehr ergebener

K. Yamamoto

Dr. K. Yamamoto
Mitsui Miike Semyo

Omuta, Fukuoka, JAPAN.

190-191-192-
194-5-6-7-8
199-2012-3-
-4-5-

ここにも通信文を記載することができます

This space is also for correspondence.

折込線

航空
PAR AVION

Egregio

Dr. G. N A T T A

Istituto di Chimica Industriale
del Politecnico, *di*
MILANO, ITALIA.



この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.

折込線

K. Yamamoto, Mitsui Miike Senryo,
Omuta, Fukuoka, JAPAN.

This space is also for correspondence.

ここにも通信文を記載することができます

8 Ottobre 1956

Dr. K. Yamamoto
Mitsui Miike Senryo
OMUTA - FUKUOKA - JAPAN

Egregio Dottore,

Ricevo la Sua gentile lettera del 2 Ottobre e rispondo a quanto Lei mi chiede. Il lavoro pubblicato nel volume de "La Ricerca Scientifica" dedicato al Simposio Internazionale di Chimica Macromolecolare del 1954, riguardava solo la produzione di bassi polimeri dell'etilene. Noi non abbiamo studiato la cinetica della produzione di alti polimeri dell'etilene, perchè al nostro lavoro si è concentrato principalmente su polimeri di altre olefine, in particolare del propilene. Nel caso che pubblicassimo dei lavori sulla cinetica della polimerizzazione del propilene Le manderò gli estratti relativi.

Per quanto riguarda il meccanismo della reazione di polimerizzazione in presenza di catalizzatori eterogenei, si è discusso molto della cosa nella "Gordon Research Conference on High Polymers" in America nel Luglio scorso, ma le idee dei diversi sperimentatori sono diverse. Alcuni considerano la formazione di complessi intermedi ciclici di coordinazione, altri attribuiscono la polimerizzazione ad un meccanismo particolare di "step-wise addition", caratteristico per le sintesi metallo-organiche, e diverse dalle altre polimerizzazioni. Io ritengo che si tratti di un meccanismo di natura ionica come ho pubblicato nella conferenza che ho tenuto a Bad Nauheim e di cui Le invio l'estratto.

Per quanto riguarda le copie del brevetto da Lei richieste, io non dispongo delle copie dei brevetti sui nuovi polimeri poichè di tali argomenti si occupa la Società Montecatini. Ritengo che negli ultimi tre anni siano stati richiesti in Italia già circa 60 brevetti sui nuovi polimeri da parte della Società Montecatini.

Ringraziandola per i Suoi auguri, La prego di gradire i miei migliori saluti.

Giulio Natta

Dr. K. Yamamoto

Omuta, den 25. 2. 1956.

355 A

Herrn Pro.Dr. G. Natta,
Institut d. Ind. Chemie
Polytechnik, Milano.

Yamamoto
Omuta

Sehr geehrter Herr Doktor G. N A T T A !

Ich habe eine Reihe Sonderdrucke Ihrer Abhandlungen über neue Olefinchemie mit herzlichsten Dank empfangen.

Da sie mir so interessant sind, daß ich sie auf einen Zug durchgelesen habe. Es ist mir erstaunlich, daß Sie in diesem neuen Gebiete, doch in so kurzer Weile, erfolgreiche Arbeiten durchgeführt haben.

Die Beschreibung, daß Sie Ihre Arbeit über Kinetik von Polymerisation von Äthylen mit Ziegler-Katalysator in Simposio Chimica macromolecolare di Torino e Milano in 1954 mitgeteilt haben, zieht mich sehr an. Ist es sehr unhöflich von mir, wenn ich Sie um ein Exemplar davon bitte, wenn es erlangbar ist ?

Mit Ihrer Freundlichkeit sende ich Ihnen mit anderer Post ein Exemplar des von mir und meinem Mitarbeiter übersetzten Buches (natürlich japanische Übersetzung) von " Prof. Dr. G. Natta; Chemie und Technik der Acetylen-Druck-Reaktionen".

Ich glaube, daß Sie vielleicht Japanisch nicht verstehen könnten, freue ich mich daran, daß Sie mein Buch in Ihrem Bücherschrank seine Stelle besorgen könnten.

Ich möchte ich über neue Polyäthylen zurückkommen. Wie Sie wohl wissen, wird Niederdruckpolyäthylen von Ziegler durch die Wirkung von Organoaluminiumverbindung mit Titanchlorid hergestellt. Ich möchte mich nach Ihnen nach folgenden Fragen erkundigen, wenn es Ihnen recht ist.

Können Sie bei Ihren röntgenographischen Untersuchungen einigen Polymerbestandteil erkennen können, das ^{sich} mit Polyäthylen an einem Kettenende mit Hauptvalenz verbunden ist ?

Es scheint mir, daß der Polymerisationsgrad von Polyäthylen beim Ende des Polymerisationsverlaufes immer, aber langsam, wächst. Nach Ihrer Untersuchung können Sie diese Erscheinung aufklären ?

Nochmal sage ich Ihnen meinen besten Dank aus und wünsche ich Ihnen, daß Sie immer großen Erfolg haben.

Mit den besten Grüßen

Ihr sehr ergebener

K. Yamamoto

Abs. K. Yamamoto,
Mitsui Mitise Senryo
Omuta, Fukuchika,

ここにも通信文を記載することができます

This space is also for correspondence.



AEROGRAMME

Egregio
Dottore G. N A T T A
Istituto di Chimica Industriale
Del Politecnico
Piazza Leonard Da Vinci, 32

MILANO

ITALIA

PAR AVION
航空



この郵便物には何物も封入又は添附できません

Nothing may be contained in or attached to this letter.

折込線

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

323 A

14. März 1956

Herrn Dr. K. Yamamoto - Mitsui Miike Senryo
Omuta, Fukuoka - Japan

Marie
Kramlich

Sehr geehrter Herr Doktor Yamamoto,

ich danke Ihnen sehr für Ihren freundlichen Brief vom 25.2.956 und es freut mich zu hören dass auch Sie sich mit Polymerisationen beschäftigen. Die Arbeiten des Internationalen Symposiums für Makromolekulare Chemie 1954 sind verspätet veröffentlicht worden und ich habe bisher noch nicht die Sonderdrucke meiner Arbeiten erhalten. Ich werde mich beeilen Ihnen ein Exemplar zuzusenden sobald ich sie zur Verfügung habe. Ich danke Ihnen sehr für die Bücher die Sie mir freundlicher Weise übersandt haben und denen ich sehr gespannt entgegensehe.

Was das Polyäthylen anbetriift, ist die Kette während der Polymerisation tatsächlich an einen Metallkomplex gebunden, und wir sind der Auffassung dass das Kettenwachstum durch Einschleiben von Äthylenmolekülen zwischen den Komplex und die wachsende Kette stattfindet. Auf diesem Gebiet haben wir Arbeiten im Gange, von denen ich Ihnen Sonderdrucke zusende, sobald sie mir zur Verfügung stehen. Der Reaktionsmechanismus ist ionischen Typs und das Kettenwachstum verläuft mit geringerer Geschwindigkeit als bei den radikalischen Polymerisationen.

Ihnen von neuem dankend, sende ich Ihnen di besten Grüsse

(Prof. G. Natta)

Omuta, den 12. Nov. 1955.

701
Vane
then

Herrn Prof. Dr. G. Natta
Istituto di Chimica Industriale del Politecnico,
Milano, Italia.

Sehr geehrter Herr Dr. N A T T A !

Jüngst habe ich die kleinen Δ behandlungen von dem Herrn Prof. Dr. Ziegler und seinen Herren Mitarbeitern über neue Olefinchemie in "Angew. Chem. 67, 426 '55" durchgelesen, in denen ich mit außerordentlicher Freude gefunden habe, daß Sie schon in diesem neuen Gebiete einige großen Erfolge gehabt haben. Wahr zu sagen, ist die Mitsui Chemical Industry Co., zu der ich gehörig bin, der ausschließliche Lizenznehmer von Ziegler-Polyäthylen in Japan. Von April d.J. bis Juni hatte ich die Ausübung der Polymerisation des Äthylens ihrem Auftrag gemäß beim Max-Planck Institut für Kohlenforschung in Mülheim unter Leitung von dem Herrn Prof. Ziegler durchgeführt. Die Forschung der Chemie des Kohlenoxyds untergebrochen, beschäftige ich mich seither mit der Industriallisierung der Polymerisation des Äthylens. Daß ich sie unterbrechen mußte, war mir zwar bedauerlich, aber das hat mich zur Durchführung neuen Dienstes ermühtert, daß mein hochachtungsvoller Herr Prof. Dr. Natta auch an dasselbe Gebiet mitgenommen ist.

Obwohl ich leider dem 4. Petroleumkongress der Welt in Roma nicht beiwohnen konnte, habe ich aber die Gelegenheit haben können, die französische Wiederhervorbringung Ihres Vortrags zur Hand zu haben und ich habe sie mit großem Interesse durchgelesen. Ich habe noch nicht einen Erfolg, Ihnen zu sagen. Jedoch ich hoffe, daß so ein schöner Tag kommen würde, daß ich meine Resultate in neuem Gebiete mit den von Ihnen wechseln kann.

Ich glaube, Sie würden auch Ihre Arbeiten über Carbonylierung fortsetzen.

Grüßen Sie, bitte, den Herrn Dr. P.Pino von mir.

Mit der größten Hochachtung verbleibe ich

Ihr sehr ergebener

K. Yamamoto

K. Yamamoto

b./Miike Senryo Kogyosho
Mitsui Chemical Industry Co.Ltd.
Omuta, Fukuoka, Japan.

ここにも通信文を記載することができます

This space is also for correspondence.

折込線

PAR AVION
航空

Herrn

Prof. Dr. G. NATTA

Istituto di Chimica Industriale

del Politecnico, Centro Studi

di Chimica Industriale del C.N.R.,

MILANO, ITALIA.



この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

682
December 14, 1955

*venie
stew*

Mr. K. Yamamoto
B./ Miike Senryo Kogyosho
Mitsui Chemical Industries Co. Ltd.
OMUTA, FUKUOKA, Japan

Dear Dr. Yamamoto,

I received your kind letter of November 12
and I am glad to know that you too are working in the
field of olefins polymerisation.

I am sending you, under separate cover, reprints of
some of my papers on this subject, and I shall be grateful if
you will be so kind to send me reprints of your papers, when
it is possible.

With best personal regards and best wishes, I am,

Very sincerely yours,

G. Natta

ここにも通信文を記載することができます

This space is also for correspondence.

K. Yamamoto, Mitsui Miike Senryo, Chemical
P.O.E. No 17 Omuta, Japan.
Industri
Co.

折込線

この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter



折込線

This space is also for correspondence.

航空
PAR AVION

Egregio Dottore
G. NATTA
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo Da Vinci 32
MILANO ITALIA



AEROGRAMME

45

ここにも通信文を記載することができます

C o p i a

Omata, 24 ottobre 1956

Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo da Vinci, 32
Milano, Italia

Egregio Dottore !

ricevo la Sua gentile lettera del 8 ottobre coi ringraziamenti.

Prima di tutti debbo domandare per la mia impertinenza che ho richiesto a Lui in merito ai brevetti di polipropilene. Credo che, in ogni caso, nostre società che ha interesse a polipropilene forse proporrà ufficialmente alla Società Montecatini sul trasferimento dei brevetti.

Come previamente Le ho scritto, nostre società è la unica società cui fu accordata una licenza di Ziegler-Polietilene nel Giappone ed è stabilendo l'impianto di 1000 toni per mese in Iwakuni vicina a Hiroshima che è diventato famoso dalla 1^a bomba atomica.

Se aumenta la produzione di etilene, propilene che sottoprodotto deve essere naturalmente usato. Ora crediamo la produzione di fenolo, ma l'aumento illimitato di fenolo non è possibile perchè il trattamento di acetone eccessivo è la problema importante

Könnten Sie mein Italienisch verstehen ?

Ich muss das Italienisch noch fleißig studieren, um die geschickten Sätze zu beschreiben.

Ich danke Ihnen vielmals für Ihre Freundlichkeiten.

Ringraziando, ricambio centuplicati cari auguri.

fto: Kasumi Yamamoto.

ISTITUTO DI CHIMICA
INDUSTRIALE DEL POLITECNICO
* 11 OTT. 1956 *
R 327

Government Chemical Industrial
Research Institute, Tokyo
Hatagaya-Shibuyaku, Tokyo,
Japan

August 23, 1956

my friend
arrived 2/26
one to me left

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

Dear Professor Dr. G. Natta:

I should very greatly appreciate receiving a copy of your interesting paper on the methanol synthesis, which appeared in the Chimica e Industria, 35, 705-725 (1953), if the copy is available for distribution. With great interest we have read your article in the "Catalysis" Vol. 3, which describes the outline of your excellent research on the methanol synthesis, and wish to know the research on the rate of the synthesis in greater detail.

my friend
arrived
arrived

I beg you will accept copies of our recent papers on the catalyst for methanol synthesis together with those on the synthetic ammonia catalyst and others, which I am sending you under a separate cover. As for the effect of chromia addition upon the catalyst performance, we have attained to a conclusion somewhat different from yours: namely the addition of chromia changes the activation energy of methanol decomposition. We are as yet doubtful whether the change in the activation energy is also true in the methanol synthesis, and hence are now making a study on the methanol synthesis at the high pressure.

With highest regards,

Very truly yours,

2

H. Uchida
H. Uchida

168-188
18/10/56
Natta, with
per Natta

October 27, 1956

Dr. H. UCHIDA
Government Chemical Industrial
Research Institute, Tokyo
Hatagaya-Shibuyaku, Tokyo

(Japan)

Dear Mr. Uchida,

I received only few days ago, your kind letter of August 23, and I wish to inform you that I have sent to you, under a separate cover the reprints on the methanol synthesis you asked for.

I thank you very much for your sending to me copies of your recent papers on the same argument. I do not receive them till now, but I hope they will arrive shortly.

With kindest regards, I am,

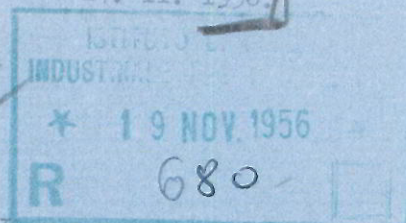
Very truly yours,

Giulio Natta

Egregio dottore G. Natta
Istituto di Chimica Industriale del
Politecnico,
Milano.

Omuta den 14. 11. 1956

G. Natta



Sehr geehrter Herr Dr. G. Natta!

Ich habe keine Entschuldigung dafür, dass ich Ihnen meine Beantwortung für Ihren Brief vom 20. v.M. zu spät schreibe. Von der Firma Montecatini habe ich die Nachricht der Absendung der Kopien von den italienischen Patentschriften betreffs der von Ihnen ausgefundenen Herstellungsverfahren isotaktischer Polymere Nr. 526101, 535712, 537425 empfangen. Vielen Dank für Ihre freundliche Behandlung.

Mit grossem Interesse habe ich Ihre Abhandlung "Stereospezifische Katalysen und isotaktische Polymere" veröffentlicht in der Angew. Chem. durchgelesen. Wir sind, um das technische Verfahren zur Herstellung von Niederdruckpolyäthylen festzustellen, zu beschäftigt, als dass wir leider gegenwärtig die publizierbaren Grundforschungen systematisch durchführen könnten. Jüngst bin ich von der Redaktionsabteilung der Zeitschrift "Kagaku" (Chemie) um einen Beitrag der Revue über "Katalysen bei den Reppe- und Ziegler-Reaktionen" ersucht worden, als ein Abschnitt der nächsten März zu erscheinenden Sondernummer "Katalyse".

Da Ihre Abhandlungen betreffs sowohl der Carbonylierung wie der isotaktischen Polymere, wegen der kleinen Anzahl der Chemiker, die Italienisch verstehen können, in Japan nur durch "Chem. Abs." bekannt sind, möchte ich Ihre Freundschaft bei dieser Gelegenheit dadurch erwidern, sie den japanischen Chemikern soviel als möglich vorzustellen.

Wohl meine Revue natürlich auf Japanisch beschrieben wird, möchte ich Ihnen einen Sonderdruck widmen, wenn sie erscheint, in der Sie Ihren Namen vielmals finden werden.

Ich könnte Ihnen unwillig sein, dass Ihre Arbeiten über isotaktische Polymere in einem Paragraph der Ziegler-Reaktionen behandelt werden. Ich möchte Ihre Einwilligung erhalten, da ich folgenden Ausdruck bereit halte.

§ Isotaktische Polymere.

Es kann nicht geeignet sein, die von Prof. Dr. Natta vom Istituto di Chimica industriale del politecnico [Milano] ausgefundenen isotaktischen Polymere als ein Ring der Ziegler-Reaktionen zu behandeln, da sie im Gebiete der Kunststoffe epochmachend und deren weitere Entwicklungen erwartet sind. Aber von der Tatsache, dass Aluminiumalkyl auch dabei als ein Bestandteil des Katalysators verwendet ist, möchte ich ihren Umriss in diesem Paragraph als ein Ausweg geben.

Ihr sehr ergebener

K. Yamamoto

K. Yamamoto
c/o Mitsui Miike Senryo
Omuta P.O.B. No. 17
Omuta, Fukuoka, Japan.

ここにも通信文を記載することができます

This space is also for correspondence.

Dr. K. Yamamoto, Mitsui Milke Senryo



Egregio
 Dr. G. N A T T A
 Istituto di Chimica Industriale
 del
 Politecnico Milano,
 MILANO ITALIA

PAR AVION
航空
 (Italy)



この郵便物には何物も封入又は添附できません
 Nothing may be contained in or attached to this letter.

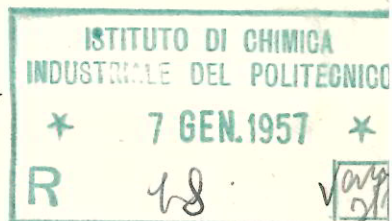
折込線

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

TOKYO INSTITUTE OF TECHNOLOGY
LABORATORY OF POLYMER CHEMISTRY
Ookayama, Meguro, Tokyo, Japan



Katsuhiko Maeda,
Kambara-Laboratory,
Tokyo Institute of technology,
Ookayama, Meguro, Tokyo,
Japan.
Dec. 25th, 1956.

Illustrissimo Prof. G. Natta,
Dirretore dell'Istituto di Chimica Industriale,
Politecnico di Milano,
Citta degli Studi, Milano, Italy.

Dear Sir,

I received your reprints from Dott. W. Suetaka studying in Milano.
I thank you for your kindness.

Yours truly,

Katuhiko, Maeda.

November 11, 1957

Mr. K. YAMAMOTO
Mitsui Chemical Industry Co., Ltd.
Miike Dyestuff and Chemical Work
Omuta, Fukuoka, Japan

N° 1896/

Dear Mr. Yamamoto,

I thank you very much for your kind letter of September 19, and for the beautiful and characteristic keepsake you were so kind as to send me from Japan, which Mr. Kimura gave me last monday before leaving Milan.

He stopped long time in Milan in hospital, suffering from heart disease, but I was glad to see him completely recovered, when he left Milan.

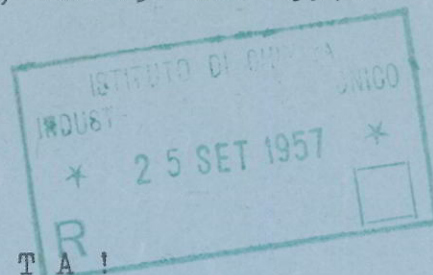
With my best wishes, I remain

Yours sincerely

G. Natta

Omuta, den 19. IX. 1957.

Herrn Prof. Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo da Vinci, 32
MILANO



Sehr geehrter Herr Dr. N A T T A !

Vielen Dank für Ihr wertees Schreiben vom 10. d.M. und eine technische Broschüre betreffs Moplens.

Glücklicherweise haben wir eine Menge Probeerzeugnis (Granul und Pulver) von Moplen durch einen Einfuhrhandel zur Hand haben können eben nach der Absendung meines vorigen Schreibens an Sie.

Jetzt sind die verschiedenen Untersuchungen hinsichtlich der Eigenschaften in Gang.

Ihre Nachricht, daß Firma Montecatini Ziegler-Polyäthylen auch herstellt, ist für uns andeutungsvoll, da dies meinen könnte, daß Montecatini an die Erschließung des Anwendungsgebietes des Moplens fest erzeugt ist.

Unter Berücksichtigung nicht nur von technischen, sondern auch von japanischen wirtschaftlichen und rohstofflichen Bedingungen soll unsere Politik über Polypropylen bei der Hauptgeschäft zu Tokio entschieden werden.

Für Ihre Großmut und Freundlichkeit gegen meinen persönlichen Fragen sage ich wiederum herzlich dank. In kurzem wird ein Herr unserer Firma, Chef der Verarbeitungsabteilung (processing dept.), dessen Name Kimura ist, Ihr Vaterland besuchen. Er soll Sie in Ihrem Institut besuchen und dabei Ihnen mein kleines Geschenk überreichen, das ich mir von ihm habe überbringen lassen.

Inzwischen habe ich auch einen Sonderdruck Ihrer Abhandlung (Angew. Chem.) dankbarlich empfangen.

Indem ich Ihren großen Erfolg wünsche, bleibe ich

Mit den besten Grüßen

Ihr sehr ergebener

Dr. K. Yamamoto

ここにも通信文を記載することができます

This space is also for correspondence.



AERGRAMME

Egregio Dr. G. N A T T A
Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo Da Vinci, 32

MILANO ITALIA

(Italy)

PAR AVION
航空

この郵便物には何物も手入又は添附できません
Nothing may be contained in or attached to this letter.



折込線

Dr. K. Yamamoto, Mitsui Mike Senryo,
Omuta, Fukuoka, JAPAN.

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

Dr. G. Natta

Istituto di Chimica Industriale
del Politecnico
Piazza Leonardo da Vinci, 32
MILANO

Egregio Dottore,

Come sta?

Ora ho l'onore che posso Le introdurre il signore T. Kimura, il capo della divisione d'elaborazione (Chief of Processing Division) della nostra fabbrica, chi Le porta questa lettura.

Io spero che Lei le discorra sui Suoi lavori.

Per favore receva il mio regalo piccolo che ho domandato la presentazione al signore Kimura come un segno del mio ringraziamento per la Sua giornaliera amichevolezza.

Pregando di gradire i miei migliori saluti.

K. Yamamoto

Dr. K. Yamamoto

10 September, 1957

Ref.n.1431

Giuseppe

Mr. Dr. K.YAMAMOTO
Mitsui Miike Senryo,
OMUTA, Fukuoka, Japan

Dear Mr.Yamamoto,

Please excuse my delay in answering your kind letter of August 2, but I have been back just now to Milan after a holiday period.

I am sending you enclosed a bulletin concerning the polypropylene properties. Your trouble, that polypropylene may be in competition with vinyl chloride and polythene is not completely founded as these three products have properties very different and peculiar fields of application.

The polypropylene shows mechanical properties and melting temperature higher than polythene, it can give completely clear films, with high mechanical strength, and can be heated to temperature higher than 100°C without deformation: it can be therefore used for packing which are to be sterilized at temperature higher than 100°C.

Polypropylene fibres show properties greatly interesting and very different from those of polythene and vinyl chloride. I think that polypropylene will represent the cheaper fibre with mechanical properties like to nylon.

The Montecatini Co., that is producing at present more than 20,000 tons/year of vinyl chloride and that will reach shortly the 16,000 tons/year of high pressure polythene, and that is producing also the Ziegler polythene, is now beginning an industrial production of polypropylene and they are sure that each product will have their own applications.

It is most probable that the polystyrene market will suffer some damage from polypropylene competition.

With my best personal regards, I am,

Very sincerely yours,

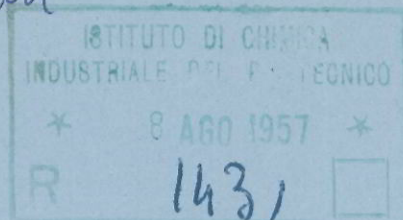
Encl.

G.Natta

Dr. K. Yamamoto,
Mitsui-Miike Senryo,
Omuta, Fukuoka, Japan.

Omuta, den 2. 8. 1957.

Herrn Prof. Dr. G. N A T T A
Istituto di Chimica Industriale
del Politecnico,
Milano.



Sehr geehrter Herr Doktor!

Vielen Dank für Ihr freundliches Schreiben vom 12.7., in dem Sie mir Ihre werten Meinungen ausgesprochen und die Absendung einer Reihe von Sonderdrucken Ihrer Abhandlungen freundlich vorherverkündigt haben. Ich danke Ihnen wiederholentlich dafür bestens.

Ich habe von dem Herrn Shimoyama, Direktor unseres Zentrallaboratoriums zu Tokyo, der Sie in Mailand besucht hat, gehört, daß er Sie leider wegen Ihres schlechten Gesundheitsstandes nicht sehen konnte.

Nun stellt unsere Firma die Untersuchungen darüber an, ob sie die Lizenz zur Herstellung des Polypropylens von der Firma Montecatini nehmen soll oder nicht. Wie Sie wohl wissen, hat unsere Firma das ausschließliche Recht auf die Herstellung Niederdruckpolyäthylens in Japan und dessen Herstellung soll am Ende d.J. von der Schwesterfirma angefangen werden. Es handelt sich bei unserer Firma darum, daß die drei Kunststoffe, Polypropylen, Niederdruckpolyäthylen und Polyvinylchlorid, auf den Markt einander Konkurrenz machen können. Wir stellen schon diese zwei Kunststoffe her. Auch im Fall, daß wir Polypropylen herstellen, soll das Nachzügeln keines Kunststoffes davon erlaubt sein. Die Firma Montecatini hat die Herstellung des ND-Polyäthylens nicht, sondern diejenige des Polypropylens angefangen. Besitzt das Polypropylen die als ND-Polyäthylen vorzüglicheren Eigenschaften? Zum Beispiel, kennen wir, daß ND-Polyäthylen ziemlich leicht einen oxydativen Abbau erleidigt. Was ist die Lage der Dinge beim Polypropylen? Es tut uns sehr leid, daß Herr Shimoyama Ihre Meinungen nicht hatte hören können. Darüber hinaus würden wir sehr froh sein, wenn er einige Muster aus isotaktischem Polypropylen, die wir noch nicht gesehen haben, hätte bekommen können.

Auf jeden Fall müssen wir ohne Aufschub unserem eigenen Schluß ausfinden. Könnten Sie mir aber persönlich darüber raten, so würde das mich freuen. Ich warte gespannt auf die Ankunft Ihrer Sonderdrucke und ich verbleibe

mit freundlichen Grüßen Ihr sehr ergebener

K. Yamamoto

ここにも通信文を記載することができます

This space is also for correspondence.

1131

折込線

Abs. Dr. I. Yamamoto, Utsuta, Japan

AEROGRAMME

45

Dr. G. N A T T A

Istituto di Chimica Industriale

del Politecnico

MILANO

ITALIA

(ITALY)

PAR AVION
航空

この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

frappo

July 12, 1957

Dr. K. YAMAMOTO
MITSUI MIIKE SENRYO WORKS
OMUTA = FUKUOKA = JAPAN

Rif. No. 1202/r1

Dear Dr. Yamamoto,

I received your kind letter of June 6, 1957 and the reprints you kindly sent to me.

The study of the reaction mechanism in the polypropylene polymerization was developed by us recently, and I have in mind to expose my ideas in this regard during the opening conference at the Paris Congress on July 1957. In this conference I shall explain the reasons for which I think that there are anionic catalysts and the importance of coordination complexes in such a catalysis. I will send you reprints, as soon as they were available.

I do not believe that our results may be interpreted as you wrote to me; in fact, it has been shown that $Ti(C_5H_5)_2(C_6H_5)_2$ without Al-organic compounds does not polymerize the ethylene, whereas the catalysts prepared from $Ti(C_5H_5)_2(C_6H_5)_2$ and $Al(C_6H_5)_3$ polymerize the ethylene. The different reactivity of $Ti-C_2H_5$ and $Ti-C_6H_5$ bonds is not sufficient to explain these results. During our further researches, not yet published, we showed that it is possible to activate, with special means, the $Ti-C_6H_5$ bond, so that it will become catalytically active. These results, also, agree with the fact that, when Ti-C and Al-C bonds are present in the same complex, the ethylene polymerization is induced by Al-C bonds.

212
I wrote also an other paper concerning the kinetics of stereospecific polymerizations, of which I am sending you a copy, under separate cover.

With my best regards.

Sincerely yours,
G. Natta

Milano, June 24, 1957

B O Z Z A

Rif. N. 1202/rl

Dr. K. YAMAMOTO
MITSUI MIIKE SENRYO WORKS
OMUTA FUKUOKA JAPAN

Dear Dr. Yamamoto,

I received your kind letter of June 6, 1957.

The study of the reaction mechanism in the polypropylene polymerization was developed ~~by~~ by us recently, and I have in mind to expose my ideas in this regards during the opening conference at the ^Paris Congress on July 1957. In this conference I shall explain the reasons for which I think that there are anionic catalyses and the importance of coordinated complexes in such a catalysis. I will send you reprints, as soon as they are available.

1957-6-24
Noi non pensiamo che i nostri risultati possano essere interpretati nel senso da Lei indicato; infatti è risultato che il $Ti(C_5H_5)_2(C_6H_5)$ senza composti alluminio-organici non polimerizza l'etilene mentre i catalizzatori preparati da $Ti(C_5H_5)_2(C_6H_5)_2$ e $Al(C_6H_5)_3$ polimerizzano l'etilene. La diversa reattività dei legami $Ti - C_2H_5$ e $Ti - C_6H_5$ non è sufficiente a spiegare tali risultati. In nostre ulteriori ricerche non ancora pubblicate, abbiamo d'altra parte dimostrato che con mezzi opportuni è possibile attivare il legame $Ti - C_6H_5$ in modo tale da renderlo cataliticamente attivo. Anche tali risultati sono però in accordo con il fatto che qualora siano presenti legami $Ti - C$ e $Al - C$ in uno stesso complesso, la polimerizzazione dell'etilene viene indotta dai legami $Al - C$.

I write also an other paper concerning the kinetics of stereospecific polymerizations, of which I am sending you a copy, under separate cover.

With my best regards.

Sincerely yours,

Giulio Natta

Mitsui Miike Senryo Works
P. Iino

Dr. K. Yamamoto
Mitsui Miike Senryo Works,
Omuta, Fukuoka, Japan.

Omuta, den 10. VI. 1957

Herrn Prof. Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico, Milano.



Sehr geehrter Herr Dr. N A T T A !

Vielen Dank für Ihren Brief vom 22. 5. d.J., in dem ich Ihre werten Meinungen über synthetischen Kautschuk habe kennen können. Auch in Japan scheint das Polyisopren kostbar zu sein.

Nun habe ich ein Resümee Ihrer neuen Abhandlung, die Sie zur Chim. e Ind. 39, 19 (1957) beigetragen haben, im Chem. Abs. 51, 7049 gelesen. Ihre neue Arbeit gibt eine wichtige Andeutung hinsichtlich des Mechanismus der organometallischen Polymerisation.

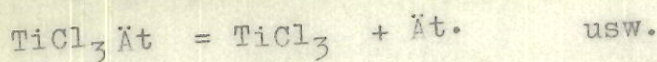
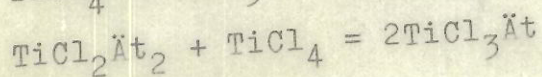
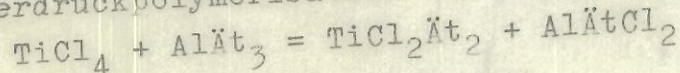
Das weiß ich, der ich mich mit der Arbeit in gleichem Gebiet beschäftige, wohl gut, wie würde es schwierig sein, die Ti-C-Bindung enthaltende Verbindung darzustellen. Ich bezeige Ihnen dafür meine Hochachtung, daß Sie sich bestrebt hatten, um diese Schwierigkeit zu überwinden und daß Sie schöne Resultate erhalten haben.

Meiner bisherigen Meinung nach würde die Ti-Verbindung die Hauptrolle und die Al-Verbindung, wenn gleich sie zur Polymerisation unentbehrlich ist, die Hilfsrolle spielen, da man NaH oder Na-Alkyl anstatt der Al-Alkylverbindung anwenden kann.

Aber es scheint mir, daß die von Ihnen erhaltene Resultate die Folgenden andeuten:

- 1) Von Ti-Verbindung wird die Polarisierung von Al-Verbindung ($Al^{\oplus} - C^{\ominus}$) veranlassen und dann findet die Addierung von Äthylen statt.
- 2) Das braucht nicht anzunehmen, daß Alkyl- oder Arylgruppe von Al-Verbindung zu Titan umwandelt.

Im allgemeinen sagt man, daß die folgenden Umsetzungen bei der Niederdruckpolymerisation des Äthylens stattfinden;



Wenn es so ist, so muß eine Phenylgruppe in $Ti(C_5H_5)_2(C_6H_5)_2$ mit derselben in $Al(C_6H_5)_3$ identisch sein.

Angesehen von anderen Gesichtspunkt ist es unter Annahme, daß eine ähnliche Umsetzung zwischen $Ti(C_5H_5)_2(C_6H_5)_2$ und $Al\dot{A}t_3$ stattfindet, so zu erklären, daß das Äthylen Molekül leichter zwischen die Ti - Ät Bindung eindringt als zwischen die Ti - Ph Bindung.

In neuen Ti-Dicyclopentadienabkömmlinge muß Titan in niedrigere Valezstufe reduziert werden ? und in welche Gestalt ?

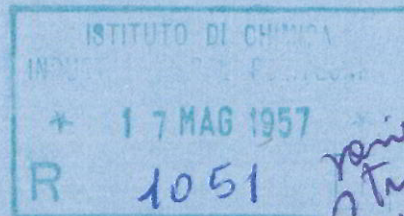
Sagen Sie mir bitte, was Sie darüber denken. Darüber hinaus wenn Sie mir betreffenden Sonderdruck übersenden, so würde es mich sehr freuen.

Mit den besten Dank und Grüßen
Ihr sehr ergebener

Dr. K. Yamamoto

Omuta, den 11. 5. 1957.

Herrn Prof. Dr. G. Natta
Istituto di Chimica Industriale
del
Politecnico, Milano.



Sehr geehrter Herr Doktor !

Wie geht es Ihnen?

Ich habe Ihnen lang nicht geschrieben.

Wie ich Ihnen mitgeteilt habe, ist meine Revue "Katalyse in den Reppe- und Zieglerreaktionen" erst jüngst erschienen.

Obwohl das natürlich auf Japanisch beschrieben ist, habe ich Ihnen einen Sonderdruck abgesandt.

Ich glaube, daß Herr Shimoyama von unserer Firma Sie in Mailand besucht hat und Ihnen gesagt, daß unsere Firma die Absicht habe, daß sie Polypropylen herstellen will. Ich beschäftige mich noch jetzt mit der Arbeit über Niederdruckpolyäthylen. Aber diese Arbeit soll inzwischen industriisiert werden.

Nach dieser Arbeit möchte ich mich mit der Arbeit über isotactische Polymerisation beschäftigen.

Im Jahre 1950 auf dem Weg nach Deutschland hatte ich über Italien übergeflogen. Das kann ich nicht vergessen. Könnte ich schönes Mailand besuchen, so würde ich mich sehr freuen.

Ich hoffe ferner herzlich, daß Sie ins Japan kommen und einen Vortrag halten könnten.

Ihr sehr ergebenster

K. Yamamoto

Dr. K. Yamamoto
Mitsui Miike Senryo.
Omuta, Fukuoka, JAPAN.

ここにも通信文を記載することができます

This space is also for correspondence.

Handwritten notes in blue ink, possibly "1001" and other illegible characters.

折込線

Dr. K. Yamamoto, Mitsui Milke
S. U. yo, Omuta, Fukuoka, Japan.



AEROGRAMME

Dr. G. N A T T A
Istituto di Chimica Industriale
del Politecnico,
Piazza Leonardo da Vinci, 32

MIANO, ITALIA

PAR AVION
航空

この郵便物は何物も封入文は添附できません
Nothing may be contained in or attached to this letter.



折込線

ここにも通信文を記載することができます This space is also for correspondence.

Mai 22, 1957

Dr. K. YAMAMOTO
Mitsui Miike Senryo
OMUTA, FUKUOKA (Japan)

Rif. n. Q051/rl

Dear Dr. Yamamoto,

many thanks for your kind letter of Mai 11. I am glad to know that you are interested to our works on poly-alpha-olefines. Besides the polypropylene, we succeeded in having interesting results also with poly-alpha-butene and isotactic polystyrene.

The industrial production of polypropylene is starting in Ferrara, and I think that the Montecatini will give licenses for its production in other countries, only after the industrial production and the affirmance on the market.

We are now carrying out studies in the field of synthetic rubbers, but we studied less the poly-isoprene because we think that the raw material is too expensive.

With best personal regards, I remain,

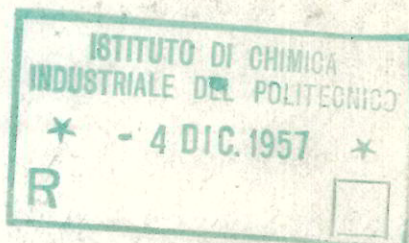
Very sincerely yours,

Giulio Natta

Prof. M. V. Varda?
M. V. Varda?
mi ha secondo con
dette serie

Messrs.
MITSUI CHEMICAL Ind. Co., Ltd.
No. 1-2-Chome, Nihombashi-
Muromachi, Chuo-Ku
T O K Y O (Japan)

December 3, 1957



Our ref. 105/83 - dV/ma

Gentlemen:

Proposed Polypropylene Plastics Manufacturing License
in Japan

Following to our letter of November 21, 1957, and to the detailed explanations given to Mr. Nakamura in Milan on December 2nd and 3rd, we enclose:

- a) draft, dated December 2, 1957, of the proposed Agreement between Montecatini and Mitsui Chemical Co.,
- b) draft of the attached Corollary Letter of the same date,
- c) draft of the attached Schedule A,
- d) list of Montecatini's polymerization cases.

The terms and conditions contained therein are to be considered a binding offer until January 31st, 1958.

It has been agreed that if Mitsui Chemical Ind. Co. Ltd. should not be able to secure the full approval of Japanese Authorities within May 31, 1958, the Agreement even if executed (of course not later than January 31, 1958), shall be considered cancelled and Montecatini will be free from any obligation whatsoever with respect to Mitsui.

Very truly yours,

"MONTECATINI"

(F. to Ing. de Varda-Dr. Ferratini)

original by airmail registered with encls. (1 copy)
copy by airmail registered two days later with encls. (1 copy)
1 copy with 5 copies of encls. handed over directly to Mr. Nakamu

December 2, 1957

E. 54

POLYPROPYLENE PLASTICS LICENSE AGREEMENT

THIS AGREEMENT, entered into this day
of by and between MONTECATINI Società
Generale per l'Industria Mineraria e Chimica Anonima, an
Italian Corporation having offices at Via Turati 18, Milan,
Italy (hereinafter called "MONTECATINI" or "Licensor"),
and
.
having offices at
(hereinafter called "Licensee")

W I T N E S S E T H

WHEREAS Montecatini represents that on its own account and
as an agent of Prof. Dr. Karl Ziegler (Kaiser Wilhelm Platz
1, (22a) Mulheim, Ruhr, Germany, hereinafter called "ZIEGLER")
it has the exclusive right to grant licenses and manufacturing
and selling rights in Japan under patent applications
jointly owned by Montecatini and Ziegler or by Montecatini
alone as listed in the attached Schedule A;

WHEREAS Montecatini and Ziegler are conducting independently
further research which may result in the discovery of other
improvements in the "Agreement Field";

WHEREAS Licensee desires to acquire a non-exclusive license

in Japan to use processes and to manufacture and sell products, compositions and articles according to the terms of this Agreement;

WHEREAS between Montecatini and Ziegler it has been agreed that no "Patent Rights" as defined herein, will be considered as dominated by any earlier Japanese Patent, belonging to either of them;

WHEREAS Montecatini is possessed of valuable technical knowledge and information relating to the production of polypropylene;

NOW, THEREFORE, in consideration of the premises and of the mutual and dependent covenants, the parties hereto mutually agree as follows:

ARTICLE I: Definitions

Wherever used in this Agreement the following terms have the following meaning:

1. The term "Patent Rights" shall mean all Montecatini's and Montecatini and Ziegler's Japanese patent applications and patents and/or those parts of each

of said patent applications and patents, which are applicable to the Agreement Field and relate to inventions patent applications covering which have been first filed prior to January 1st 1960.

2. The term "Agreement Field" shall include only the following:

- (a) Any process or processes whereby through the use of any catalyst and/or promoter, disclosed by any Patent Application(s) listed in schedule A, one may produce propylene polymers having molecular weight above 2000 and a linear structure with substantially no branchings longer than CH_3- , provided said polypropylene is used in the plastic field only;
- (b) the processes used in the preparation of said catalysts and/or promoters (but excluding any process concerning the preparation of the components of said catalysts and/or promoters), provided such catalysts and/or promoters are employed in the polymerization processes as defined under (a) hereof;
- (c) processes for purifying monomers provided such purified monomers are employed in the polymerization processes as defined under (a) hereof;
- (d) any process or method of separating, purifying or stabilizing said polypropylene products;

- (e) any apparatus suitable for carrying out any of the processes defined under (a) (b) (c) (d) (f) and (i) hereof;
- (f) all propylene polymers for use in the plastics field which are obtained by the processes defined under (a) and (i) hereof, as well as any process or method for separating, purifying and stabilizing said polymers;
- (g) any composition for use in the plastics field made out of such polypropylene as defined under (f) hereof, including resins and molding materials and excluding elastomeric compositions, or compositions apt to be transformed into elastomeric compositions or articles, as defined in Section 6 hereof;
- (h) articles made out of such products and compositions defined under (f) and (g) hereof, including films, foils, sheets, tapes, tubes, pipes, molded and extruded products and other shaped articles, and excluding fibers and elastomeric articles as defined in Section 5 and 6 hereof;
- (i) any process and/or method for improving the characteristics of said products and compositions as defined under (f) and (g) hereof as well as improved processes for transforming them into films, foils,

sheets, tapes, tubes, pipes, molded and extruded products and other shaped articles as defined in (h) hereof;

Therefore the processes of transforming polymers and compositions into textile fibers and elastomeric products, elastomeric compositions and elastomeric articles, fibers and elastomers themselves and their uses are in no case included in the Agreement Field of this Agreement.

3. The term "Licensee" shall include all companies fifty percent (50%) or more of the voting stock of which shall be owned directly or indirectly by Licensee, provided said companies accept in writing the obligations of the present Agreement.
4. The term "Net Sales Price" shall mean the gross sales price to customers, less quantity or prompt payment discounts, container costs, transportation, insurance and delivery expenses and allowances for returns, when any such deductions are separately stated on invoices or bills submitted to the customer by Licensee, and any duty or taxes based directly on sales or turnover or delivery of material produced under this Agreement, which is absorbed by Licensee.
5. The term "Fiber" shall mean a unit of matter having a length at least 100 times its diameter or width, and having a definitely preferred orientation of its

molecules with respect to a specific axis; and which can be spun into a yarn or made into a fabric by interlacing in a variety of methods, including but not limited to weaving, knitting, braiding, felting, and twisting.

6. The term "Elastomer" shall mean a material which at room temperature can be stretched repeatedly to at least twice its original length and, upon immediate release of the stress, will rapidly return to its approximate original length. An "elastomeric product" or "elastomeric composition" or "elastomeric article" is a product or composition or article made of or forming any "Elastomer".

ARTICLE II - License Grant

Montecatini hereby grants to Licensee until the expiration of the last of the Patent Rights to expire, a non-exclusive license limited to Japan under the Patent Rights to use any or all of the processes of the Agreement Field to manufacture in a plant having a maximum production capacity of 5000 t/y of polypropylene any or all of the products, compositions and articles of the Agreement Field and to use or sell the products, compositions and articles so obtained with the right of granting sublicenses to Licensee's customers on any licensed claim for transforming said products and compositions into foils,

films, sheets, tapes, tubes, pipes, molded and extruded articles and all other shaped articles except fibers and elastomeric articles.

ARTICLE III: Consideration and royalties

1. Licensee shall pay subject to the provisions of Article VII within 30 (thirty) days starting from the date on which the present Agreement is approved by the Japanese Government, the following sums which in no case will be reimbursable:
 - (a) 300,000 U.S. Dollars (three hundred thousand United States Dollars) as initial and partial consideration for the license under Patent Rights.
 - (b) 200,000 U.S. Dollars (two hundred thousand U.S. Dollars) as prepaid royalty creditable against future royalty payments provided for in Section 2 of this Article, to the extent of 30% (thirty percent) of each royalty payment as it becomes due by Licensee.

2. A running royalty as directed below for all products, compositions and articles within the Agreement Field produced by Licensee and sold by Licensee to third parties or utilized by Licensee, where either such

products, compositions or articles or such processes, or both, are covered by any one or more claims of any unexpired Patent Rights, except claims which have been:

- (1) abandoned, or
- (ii) finally denied without possibility of appellate review in any action or decision by the appropriate Patent Office or by any tribunal on appeal therefrom, or
- (iii) declared invalid by a decree of a court of competent jurisdiction not appealed from or not appealable.

The rate of such royalty shall be of 5 (five) percent of the Net Sales Price of the products as sold provided however that:

- (a) for all the sold products not being uncoloured polypropylene the 5% royalty shall be computed only on the Net Sales Price of the uncoloured polypropylene material contained therein. For the purposes of this Article the Net Sales Price of the uncoloured material shall be the price at which, at the time of computation, Licensee sells uncoloured polypropylene in its earliest commercial form, including only impurities arising from the manufacturing operations and stabilizers, provided polypropylene in such form is sold in sufficiently large amounts to establish a fair market price to customers;

(b) In case there does not exist a Net Sales Price of the uncoloured material, said price shall be computed by deducting from the Net Sales Price of the nearest coloured composition all the additional direct supplies and labor cost (to which direct costs a 20% shall be added to take into account all indirect and undivided costs as well as overhead) which is or would be incurred in the transformation of the uncoloured material into said coloured composition.

(c) The compositions containing 98% or more by weight of Propylene Polymers shall for the purpose of the royalty calculation be considered as if they were 100% Propylene Polymers.

In the event that Licensee shall use Propylene Polymers and compositions for further processing, fabrication or otherwise either for the production of articles for ultimate sale or for use by Licensee in its own operations for any purposes other than for reasonable tests carried out by Licensee, they shall be deemed for purposes of calculating royalties to have been sold by Licensee at the Net Sales Price of the uncoloured material (in the form as used) as sold by Licensee preferably during the month of such use.

The royalties shall be payable until the expiration date of the last Patent Rights patent to expire.

Only one royalty shall be payable by Licensee on any pound of material made under the present license.

ARTICLE IV: Increase of productive capacity.

Licensee will be permitted to increase its productive capacity either by enlarging the 5000 t/y plant provided for in Article II or by the building of new plants.

For each such increase, Licensee shall:

- (a) give Licensor a detailed notice in writing at least 3 (three) months before the date in which actual work for the increase of the capacity of the existing plant or for the erection of a new plant is planned to begin;
- (b) pay Licensor within 60 (sixty) days from the date of the notice referred to under (a) above as initial and partial consideration for the enlargement of the scope of the license granted under Article II of the present Agreement to include the relevant increase in productive capacity, the following amounts which in no case will be reimbursable and which shall not be creditable against running royalties:
 - (1) \$ 210,000 (two hundred ten thousand U.S. Dollars) for any such increase up to a total productive capacity (i.e. a productive capacity inclusive of that of the first plant) of 10,000 t/y

(ii) \$ 390,000 (three hundred ninety thousand U.S. Dollars) for any such increase up to a total productive capacity (i.e. a productive capacity inclusive of that of the first plant) higher than 10,000 t/y and not exceeding 20,000 t/y

(iii) \$ 540,000 (five hundred forty thousand U.S. Dollars) for any such increase up to a total productive capacity (i.e. a productive capacity inclusive of that of the first plant) of more than 20,000 t/y

As soon as the relevant sum provided for under (b) has been paid, the license granted under Article II shall be deemed to cover also the enlarged or new plant, and all provisions of the present Agreement (except for Section 1 of Article III) shall apply.

ARTICLE V: Limitation on License - Exports

1. The license herein granted extends to Japan only, and does not confer any rights whatever in any country other than Japan except for the provisions of Sections 2 and 3 of this Article.
2. Licensee is free to export any Propylene Polymers and compositions manufactured under this license, as

well as any articles obtained therefrom, into the following countries:

Nationalist China	Burma	Thailand
Southern Korea	British Borneo	Vietnam
Hong Kong	Federation of Malaya	
Macao	Indonesia	
Philippines	Singapore	
Timor	Sarawak	

provided said Propylene Polymers and compositions, and the articles obtained therefrom either in Japan or in any of the above countries, are finally consumed in one of said countries and are not re-exported into countries other than those listed in this paragraph.

3. Licensor warrants that neither Montecatini nor any other licensee under any patent or rights under patents belonging to Montecatini or controlled by Montecatini and corresponding to the Patent Rights licensed under the present Agreement, will at any time hereafter assert in any country of the world said patents or rights under patents, to prevent the import, use or sale in such country of fabricated articles (manufactured wholly or partly from the Propylene Polymers made by Licensee under this Agreement) provided said articles are in their final

form and ready to be sold as such to and employed by their intended ultimate consumer, and do not need therefore any further treatment and/or processing.

ARTICLE VI: Books of Account and Reports.

1. Licensee shall keep true books of account containing an accurate and complete record of all data necessary for the computation of royalties payable according to this Agreement.

2. On or before the last day of February, May, August, and November of each year during the life of this Agreement, Licensee shall furnish Montecatini with two copies of a written statement (signed by an authorized official of Licensee) covering the calendar quarter year ending two months previously and showing:
 - (a) the number of pounds of each of the various products, compositions and articles manufactured under the license herein granted , respectively produced, sold, utilized or processed during the calendar quarter year covered by said statement; and
 - (b) the detailed computation of all royalties then due.

in the event that Licensee does not use the license granted during any calendar quarter of any year, Licensee shall so advise Montecatini within the time the said written statements would otherwise be due.

3. Licensee shall permit Montecatini during regular business hours (at Montecatini's own expense and upon 5 (five) days' prior written notice) by an independent certified public accountant selected by Montecatini (except one to whom Licensee has some reasonable objection) to examine and take abstracts from the relevant records of Licensee to such extent as may be reasonably necessary to enable such accountant to verify or determine royalties paid or payable under this Agreement. The report of any such accountant indicating for each licensed product, composition or article the amount of royalty due, if any, shall be made available by Montecatini to Licensee.

Such accountant shall not disclose to Montecatini any information relating to the business or affairs of Licensee other than such information as properly pertains to the computation of the amounts produced and of the royalties due hereunder, if any.

ARTICLE VII: Payments.

1. Montecatini represents that the lump sum and royalties payable by Licensee under this Agreement belong 70% to Montecatini and the balance to Ziegler.

2. Royalties payable by Licensee under this Agreement shall be payable together with the statements required under Article VI and within 60 (sixty) days following any termination or expiration of this Agreement prior to or during any such reporting period.
3. The lump sum and royalty payments payable by Licensee under this Agreement shall be paid in United States Dollars as follows:
 - (a) for the part of the payments, belonging and payable to Montecatini, to Montecatini in Italy as Montecatini will direct;
 - (b) for the part of the payments belonging and payable to Ziegler, to Ziegler in Germany as Ziegler will direct.
4. If any amounts payable to Montecatini or to Ziegler pursuant to this Agreement shall be subject to Japanese taxes which Licensee is required to pay or to withhold, Licensee shall pay such a sum or compute the royalty at such a rate, as to yield to Montecatini and to Ziegler respectively after payment of any such Japanese taxes, the full amounts provided for in this Agreement.
5. Any overdue payment shall bear interest at the rate of 6% per annum.

ARTICLE VIII: Secrecy

Licensee agrees that all unpublished Patent Rights, which Montecatini undertakes to disclose to Licensee as soon as practicable after the relevant applications have been filed in Japan, shall be treated as confidential disclosure and shall be maintained in confidence while they remain unpublished.

ARTICLE IX: Licensee's Inventions.

1. (a) If at any time prior to January 1st, 1960, Licensee, as a result of its own research, shall have filed or if it shall have acquired by that date a patent application or a patent or licensing rights in any country, dominating a material part of the Agreement Field in such country Licensee agrees that, to the extent it can do so without payment by it (unless such patent is reimbursed to it) it shall offer a non-exclusive license for the whole life of the relevant patent(s) in each said country on uniform terms, to all the other licensees in that country of the Licensor under the Agreement Field or under a part of it, who have agreed or will agree through the Licensor to grant comparable licenses to Licensee. Any such license granted by Licensee shall provide for the payment of reasonable royalties by the licensee in question, said royalties to be determined by mutual agreement between Licensee and such other licensee, but at

a rate not higher than the corresponding royalty rate of this Agreement. Montecatini agrees to incorporate a similar provision in all future agreements made with licensees of the Licensor in the Agreement Field. When requested from time to time by Licensee, Montecatini will give the names of all its licensees who have agreed to grant to Licensee such comparable licenses mentioned above.

(b) The obligations provided for under (a) above are undertaken by Licensee subject to its previous engagement deriving from agreements entered into prior to the date of the present Agreement, which engagements are listed and defined in detail in Enclosure C to the present Agreement. The engagements towards the Licensee of the other licensees who have accepted or will accept in their agreements with Licensor a provision corresponding to (a) above, are or shall be undertaken excluding the countries and/or fields in which, as a consequence of the said engagements listed in Enclosure C, Licensee has undertaken no obligation towards said other licensees.

The other licensees in their turn shall have the right to undertake the obligations provided for under (a) subject to their previous engagements entered into prior to the date of their agreement

with Montecatini or Licensor, and the same provisions shall apply.

2. If Licensee, as a result of its own research or by acquisition in any manner, has obtained or shall obtain a patent or patents or licensing rights in any country, having a priority date earlier than January 1st, 1960 and with at least one claim applicable to the Agreement Field, Licensee shall offer a non-exclusive license on said patent(s) or rights for the whole life thereof to Montecatini in each such country, on Montecatini's request and in Germany to Ziegler or to Ziegler's German licensees on Ziegler's request. Any such license shall provide for the payment of reasonable royalties by the licensee in question, said royalties to be determined by mutual agreement between Licensee and such licensee but at a rate not greater than the corresponding royalty rate of this Agreement.

ARTICLE X: Term of Agreement

This Agreement shall become effective after its execution by both Licensee and Montecatini upon its approval by the Japanese Authorities and shall continue in effect until the expiration of the last to expire of the Patent Rights.

ARTICLE XI: Termination.

1. In the event of failure of Licensee to make reports and/or payments when due, Montecatini at its election may terminate this Agreement and the licenses granted to Licensee hereunder, upon 60 (sixty) days' written notice and without waiver or loss of its rights, or it may continue this Agreement in force and proceed to the collection of payments as due. If, during the running of any 60 (sixty) days' notice period, and provided Licensee shall have otherwise fulfilled its obligations under this Agreement, Licensee shall supply all statements and pay all sums and interest then due under this Agreement, this Agreement and the licenses herein granted to it shall remain in full force and effect.

2. In the event that bankruptcy or similar proceedings respecting the solvency of Licensee shall prevent Licensee from complying with any of the provisions of this Agreement, Montecatini may at its election terminate this Agreement and the licenses granted to Licensee upon 60 (sixty) days' written notice.

3. In the event that within three years and a half after the execution of the present Agreement by Licensee and Montecatini, Licensee's plant as provided for under Article II will not be in operation, Licensor at its election may terminate this Agreement and the licenses granted to Licensee hereunder upon 60 (sixty) days' written notice and Licensee shall not be entitled to recover any of the payments made by him under this Agreement.

ARTICLE XII: Effect of termination.

Termination of this Agreement shall not affect

- (1) Licensee's obligations arising out of the provisions

of Article VIII hereof;

- (ii) Licensee's obligations to report and pay royalty on and to keep records and permit inspection with respect to all products, compositions or articles made or contracted for before such termination, even though actually used or sold after such termination,
- (iii) any license granted or required to be granted under Article IX hereof as a result of events occurring prior to such termination,
- (iv) Licensee's obligations under Article XVI.

ARTICLE XIII: Assignability.

1. This Agreement shall be assignable by Licensee to and binding upon any successor to the entire polymer business of Licensee, provided Licensee has obtained prior written consent from Montecatini and provided further that such assignee accepts in writing the provisions of this Agreement and agrees to be bound in all respects thereby in the place and instead of Licensee.
2. This Agreement may be assigned by Montecatini provided the right to grant the license herein granted is also granted to such assignee, and provided further that such assignee accepts in writing the provisions of this Agreement and agrees to be bound in all

respects thereby in the place of and instead of Montecatini. Such assignment shall not alter the duty and obligation of Montecatini and of Ziegler to insure that Japanese Patent Rights are included among the patents under which Licensee is licensed in accordance with the provisions of Article II.

ARTICLE XIV: Validity of Patents.

Licensee shall not at any time directly or indirectly question or dispute or aid in questioning or disputing the validity of any Montecatini's or Montecatini and Ziegler's or Ziegler's patent or patent application having at least one claim applicable to the Agreement Field.

ARTICLE XV: Notices.

All notices given hereunder shall, if intended for the Licensor, be sent by cable or airmail (and both confirmed by seammil) to Società Montecatini (Brevetti), Via Turati 18, Milan (Italy) or, if intended for Licensee shall be similarly sent to Licensee at its address set out hereinabove; provided, however, that either of such addresses may be changed by two weeks, written notice thereof to the other party.

Any notice given by cable and seammil shall be effective two days after being sent. Any notice sent by air and seammil shall be effective five days after being sent.

ARTICLE XVI: Arbitration.

1. All disputes arising out of or in connection with the present Agreement, any performance or nonperformance thereof, or the consequences of any of the foregoing, shall be finally settled by arbitration.
2. The arbitration shall take place in Switzerland. The dispute will be submitted to three Arbitrators, of which two shall be appointed one by each of the parties and the third one (who shall be a national of a country other than Italy and Japan) by the former two. In the event that either of the parties, although duly requested in writing, shall fail within 60 (sixty) days to designate its arbitrator, or in the event that the said arbitrators shall fail within 60 (sixty) days to designate such third arbitrator, such arbitrator shall be appointed by the President of the Court of Appeals of the Canton of Zürich, Switzerland, upon the application of either party.
3. The arbitrators shall determine their own procedure in pursuance of the basic rules of procedure of

the Canton of Zürich.

4. The arbitrators shall decide according to what they deem just and equitable. The award to be rendered shall be final and conclusive and binding upon all the parties without any right to appellate or other review.

Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof and in any event the parties agree, provided this is possible according to the Swiss law, to submit to the jurisdiction of any Court in Switzerland to enter judgment on said award.

5. The compensation for licenses under Article X, Section 1 and 2, shall be determined in the same way, in case of disagreement.

ARTICLE XVII: Approval of the Japanese Authorities.

This Agreement is conditional upon the obtaining by Licensee, within four months from the execution thereof by both Licensee and Montecatini, of the approval of the Japanese Authorities as provided for under Article X. If said approval is not obtained within the said term, Montecatini will be free from any obligation with

respect to Licensee.

COROLLARY LETTER No. 1

December 2 , 1957

MITSUI CHEMICAL

TOKYO

Dear Sirs,

With reference to the Polypropylene Plastics License Agreement (hereinafter called the Polypropylene Agreement) entered into between our Companies on it is agreed by this Additional Agreement that the following shall apply notwithstanding anything to the contrary in the Polypropylene Agreement:

1. The definitions of the terms given in the Polypropylene Agreement shall also apply to the provisions of this Additional Agreement.
2. In addition to the license provided for in the said Polypropylene Agreement, we agree to grant you a non-exclusive license, without any down payments, on the same terms including royalty rates provided for in said Agreement under each and all Montecatini's Japanese applications and patents, if any, whose basic patent applications are filed prior to January 1, 1960, covering all polymerization processes by means of

metallorganic catalysts outside the Agreement Field by which olefines may be transformed into propylene polymers having molecular weight above 2000 and a linear structure with substantially no branchings longer than CH_3 , provided said polypropylene is used in the plastic field only.

The above additional license is subject to all the provisions of the Polypropylene Agreement except for the provisions of Article VII Sections 1 and 3 instead of which the following shall apply:

Royalties payable by Licensee under the additional license hereby granted shall be paid to Montecatini in Italy as Montecatini will direct.

3. As indicated in Section 2 of Article I of the Polypropylene Agreement, by the said Agreement Licensor has granted Licensee manufacturing rights only with respect to propylene polymers for use in the plastics field (i.e. excluding propylene polymers to be employed in the manufacture of elastomeric compositions and articles and of textile fibres).

This limitation has been made necessary by the fact that Licensee has chosen not to acquire Montecatini's know-how.

Should Licensee desire to sell propylene polymers also to manufacturers of elastomeric compositions and articles or of textile fibers, Montecatini undertakes to cancel the said limitation from the Agreement, provided Licensee employs Montecatini's know-how.

Said know-how shall be available to Licensee against payment of the sum of \$ 400,000 (four hundred thousand United States Dollars), in addition to the consideration of Article III 1 (a), for the productive capacity of 5,000 t/y provided for under Article II of the Polypropylene Agreement.

In cases of greater total productive capacities the total sums to be paid to Montecatini (i.e. in addition to the considerations provided for under Article III 1 (a) and Article IV of the Polypropylene Agreement) shall be the following:

- (a) for a total productive capacity (i.e. productive capacity inclusive of that of the first plant) of 10,000 t/y
U.S. Dollars 680,000 (six hundred eighty thousand)
- (b) for a total productive capacity (i.e. a productive capacity inclusive of that of the first plant) of 20,000 t/y
U.S. Dollars 920,000 (nine hundred twenty thousand)
- (c) for a total productive capacity (i.e. a productive capacity inclusive of that of the first plant) of more than 20,000 t/y
U.S. Dollars 1,120,000 (one million one hundred twenty thousand)

Said figures are binding for Montecatini up to December 31, 1960 and will not be creditable against running royalties.

4. The above described enlargement of the scope of the license shall in no case be construed as affording Licensee the right:

(a) to sell propylene polymers to manufacturers of elastomeric compositions and articles or of textile fibers who have not obtained from Montecatini a license under Montecatini's relevant Japanese patent applications and patents in said fields;

(b) to transform propylene polymers into elastomeric compositions and articles or into textile fibres. To be entitled to do so, Licensee will have to negotiate an additional Agreement with Licensor providing for additional considerations (additional down payments plus additional running royalties);

Licensor is willing to discuss with Licensee the grant of a license in said fields provided the scope of the polypropylene Agreement has been enlarged as hereinabove indicated under 3).

5. All the payments due under the Polypropylene Agreement and the present Corollary Letter can be made in pound sterlings in amounts equivalent to the amounts in dollars mentioned above, calculated at the rate of exchange of the day in which the payments will be made.

Very truly yours

" M O N T E C A T I N I "

Accepted at

on

MITSUI CHEMICAL

.

December 2, 1957

A

Reference	Japanese Patent Application No.	Filing date		" Subject Matter"
		Italy	Japan	
34Ut.76	15.591/55	June 8) July 27) 1954 August 6)	June 8, 1955	Basic Patent on alpha olefin polymerization with generic catalysts from compounds of metals of 1st subgroup of 4th to 6th group. (including Th and U) and metals, alloys, hydrides, or organo-metallic compounds of 1st to 3rd group).
.73a	31.441/55	Dec. 4) Dec.16) 1954	Dec. 3, 1955	Selective production of "isotactic" or "atactic" polymers
	32.690/55	Dec.16, 1954	Dec.16, 1955	Catalysts from Al alkyls and Iron compounds
	18.406/56	July 15, 1955	July 14, 1956	Catalysts from reaction of Al-Ti alloys with organic halides
	18.989/56	July 19, 1955	July 17, 1956	Extension of the temperature range in the polymerization to between -18 to 220°C. The degree of polymerization changes in function of the temperature
	24.754/56	Sept.26, 1955	Sept.26, 1956	Polymerization of alpha olefins in the absence of solvents
	26.410/56	Oct. 19, 1955	Oct. 15, 1956	Polymerization in the presence of hydrogen to lower average molecular weight of the polymers.
	28.123/56	Nov. 8, 1955	Nov. 5, 1956	Polymerization in the presence of volatile solvents such as propane and butane
	15.002/57	June 20, 1956 Nov. 30, 1956	June 18, 1957	Catalysts from alcoholates or acetylacetonates of transition metals supported on silica, alumina or their mixtures.

ence	Japanese Patent Application No.	Filing date		"Subject Matter"
		Italy	Japan	
		Dec. 4, 1956		Extraction of a crude polypropylene, obtained by using a catalyst from titanium trichloride and aluminum alkyls, with high boiling solvents to obtain a higher-melting-point product
		Dec. 20, 1946		Catalysts containing the usual metal alkyls and at least two compounds of different transition metals
		July 16, 1957		Be-alkyls with $TiCl_3$ to obtain highly isotactic polypropylene
		Nov. 7, 1957		Improvement in the process of polymerizing vinylic monomers to high polymers of high cristallinity
		Nov. 12, 1957		Improvement in the process for polymerizing alpha olefins to substantially isotactic high polymers by means of catalysts obtained from berillium alkyls.
	23.460/57	Sept. 21, 1956	Sept. 21, 1957	Improvements in or relating to tubes and their production
	24.494/57	Oct. 9, 1956	Oct. 5, 1957	Improvements in or relating to resinous dispersions
	25.704/57	Oct. 19, 1956	Oct. 18, 1957	Thermoplastic film materials

Reference	Japanese Patent Application No.	Filing date		"Subject Matter"
		Italy	Japan	
	25.703/57	Oct. 19, 1956	Oct. 18, 1957	Hollow articles produced from thermoplastic materials
	25.705/57	Oct. 23, 1956	Oct. 18, 1957	Production of moulded articles from compositions based on crystalline polymers
41	26.468/57	Nov. 2, 1956	Oct. 26, 1957	Electric cables for telecommunication purposes
		Nov. 30, 1956		Improved method of joining materials
		Dec. 10, 1956		Improvements in or relating to thermoplastic compositions
7	30.623/56	Dec. 6, 1955	Dec. 5, 1956	Process for improving the mechanical and processing properties of linear high polymers of propylene
	7.089/57	March 30, 1956	March 25, 1957	Articles of manufacture from linear high polymers of propylene and process for their preparation
	7.088/57	March 30, 1956	March 25, 1957	Films from linear high polymers of propylene and process for their production
o)	12.140/57	May 23, 1956	May 18, 1957	Transparent films from linear propylene high polymers
	14.112/57	June 13, 1956	June 8, 1957	Improvements in or relating to electrical components

Reference	Japanese Patent Application No.	Filing date		"Subject Matter"
		Italy	Japan	
(*)	14.111/57	June 13, 1956	June 8, 1957	Improvements in or relating to writing materials and their preparation
	18.503/57	August 2, 1956	July 26, 1957	Photographic film base material
	20.824/57	August 23, 1956	August 23, 1957	Magnetic materials
+0.36 (*)	26.207/57	Oct. 24, 1956	Oct. 23, 1957	Improvements in or relating to the improvements of the mechanical properties of elongated articles
5	24.281/57	Oct. 4, 1956	Sept. 30, 1957	Porous and cellular materials
11	24.933/57	Oct. 11, 1956	Oct. 9, 1957	Sheets and foils of linear alpha-olefin high polymers with high degree of crystallinity
12	24.934/57	Oct. 11, 1956	Oct. 9, 1957	Laminated materials and the production thereof
20	25.384/57	Oct. 11, 1956	Oct. 15, 1957	Containers of plastics for substances to be thermally insulated
18		Nov. 6, 1956		Improvements in or relating to electric conductors
14+D.117+U.132		Nov. 20, 1956		Improvement in or relating to corrosion resistant articles
		July 10, 1957		

(*) Exclusively Montecatini Cases

December 2, 1957

DOL Exclusively Montecatini Polymerization Cases

Reference	Japanese Patent Application No.	Filing date		"Subject Matter"
		Italy	Japan	
	24.449/56	Sept. 28, 1955	Sept. 22, 1956	Process for polymerizing olefins with catalysts containing organo-tin compounds
	7.727/56	March 29, 1955	March 26, 1956	Process for polymerising olefins with catalysts containing alkyl lead compounds

THIS LIST REFERS TO COROLLARY LETTER No. 1 - SECTION 2.



% Mitou & Co., Ltd.
Bucklersburg House 83
Cannon St., London E.C.4
England

June 9, 1959

Messrs. Prof. G. Natta's Laboratory
Istituto di chimica Industriale
del Polytechnico, Milano, Italy

Dear Sirs,

I have been studying with Dr. Overberger in Polytechnic Institute of Brooklyn, New York, and am now visiting European countries on my way back to Japan.

I should like to visit your laboratory on Friday morning, June 12th, if it does not disturb you. I think Dr. Overberger has already sent you a letter kindly introducing me to Professor Natta.

I shall arrive in Milano on Thursday 12.34 p.m., June 11th, by train from Paris and stay at GRAND HOTEL, VIALE S. MARTINO 214, LÈRE CATÈGORIE, MILAN.

I should be very pleased, if you could give your contact with me in Milano.

Vinite to H. Yuki
Com Pomi
Venerdi 12/6 -

Sincerely yours,
H. Yuki

Prappone

June 3, 1959

Dr. Heimei Yuki
Mitsui & Co.Ltd. (London Branch)
2nd floor-Bucklersbury House
Cannon Street,
London E.C.4.

our ref. 677/lv

Dear Dr.Yuki,

Professor Overberger communicated me that you shall come to Milano on the 12th of June.

Unluckily I suppose I shall not be in Milano on the day, because of previous engagements. I do not know if I succeed in changing the date of my leaving: if I can, I shall be very pleased to meet you and to show you my laboratories; otherwise I shall charge my co-workers to welcome you and to show you my Institute.

Best regards,

G.Natta

Ward
Frederic
Giappone

16 Febbraio 1960

Prot.N.124/rl

Dr. Kazumi Yamamoto
Miike Works
Mitsui Chemical Industry Co. Ltd.
OMUTA, Fukuoka - Japan

Egregio Dottore,

La ringrazio della Sua gentile lettera del 10.2. Spero che l'accordo tra la Montecatini e la Mitsui Chemical Industry Co. venga approvato dal Vostro Governo e da parte mia sono stato ben lieto che la Montecatini abbia concluso l'accordo proprio con la Mitsui, tra le numerosissime richieste da parte di altre Società sia Giapponesi che Americane per impianti di polipropilene in Giappone.

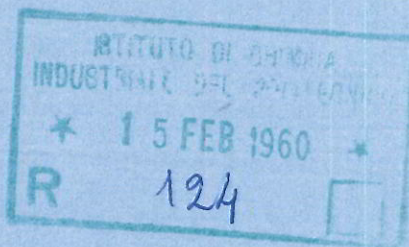
Ho appreso con molto piacere che Lei ha cominciato a studiare l'italiano; è la prima volta che ricevo una lettera in italiano dal Giappone. Purtroppo non posso fare altrettanto perchè sono troppo vecchio per cominciare a studiare il giapponese!

Spero di avere presto l'occasione di incontrarla. La prego di gradire i miei migliori saluti.

(Prof.G.Natta)

Omuta, 10. II. 1960

Prof. Dr. G. Natta
Politecnico, Milano
Piazza Leonardo da Vinci, 32
Milano, Italia



Stimat. Dr. Natta,

Come sta?

Non ho scritto Gli una lettera a lungo.

Ho prima desiderato che il nostra societa, Mitsui Chemical Industry Co., Ltd., prenda la licenza sulla fabbricazione del polipropilene dalla Soc. Montecatini.

In prinzipio di questo anno il vicedirettore della nostra societa ha visitato la Soc. Montecatini e finito da fare il contratto riguardo alla licenza concernete.

Se il governo giapponese ne riconoscesse, degl' ingeneri della nostra societa vadano in Italia per appropriarsi le tecniche della polimerizzazione di propilene.

Sarei lieto, se potressi andare in Italia e li vederLo. Sotto questi intnzione impararo Italiano fervente.

Con mille saluti cordiali

Dr. Kazumi Yamamoto

Miike Works

Mitsui Chemical Industry Co., Ltd.

Omuta, Fukuoka, Japan

ここにも通信文を記載することができます

This space is also for correspondence.

Dr. K. Yamoto, Mike Works,
Mitsui Chemical Industry Co.
Omuta, Fukuoka, Japan



All'egregio

Prof. Dr. G. Natta

Politecnico, Milano

Piazza Leonardo da Vinci, 32

Milano, I T A L I A

PAR AVION
航空

この郵便物には何物も封入又は添附できません
Nothing may be contained in or attached to this letter.

ISUFIMPER
FRANZIAMENTO PER INDIRIZZO
INDICATO NEL 10226610R
A CONDIZIONI DI FAVORI

折込線

折込線

This space is also for correspondence.

ここにも通信文を記載することができます

3 Maggio 1960

*(Vani Stranieri
Giappone)*

Prot.N.423/r1

Dr.K.YAMAMOTO
Mitsui Chemical Industry Co?,Ltd.
Miike Works
OMUTA (Japan)

Egregio Dottore,

ho ricevuto la Sua lettera del
15.4 che ho trasmesso all'Ufficio Brevetti della
Società Montecatini, la quale Le risponderà
direttamente.

Molti cordiali saluti.

(Prof.G.Natta)

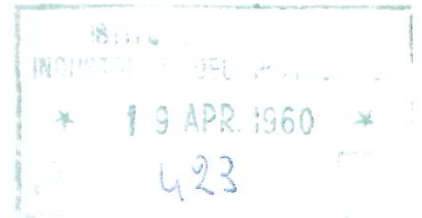
Dr. K. Yamamoto

Mitsui Chemical Industry Co., Ltd.
Miike Works
Omuta, Japan

Prof. Dr. G. Natta
Istituto di chimica industriale
del politecnico
Milano, Italia

Omuta, 15. 4. 1960

fare copia per Petrucci



Egregio Dottore,

La ringrazio della Sua gentile lettera del 16. 2. Già è l'aprile. Malgrado alla premura dei direttori della società nostra non ancora viene approvato il contratto tra la Montecatini e la Mitsui da Nostro Governo.

Mi pare, la competizione nei campi dell'applicazioni tra politene con alta cristallinità e polipropilene isotattico, in altre parole, la incertezza in quanto alla domanda di quest'ultimosia una causa principare. Ma, ora una nuova situazione accade. Cioè la Nuova Giappone Azoto Soc. che una delle grandsociete chimico-industriale nel Giappone, ha sollecitato al governo riguardo all'importazione della tecnica, da cui l'Avisun in Stati Uniti fabbrica polipropilene. La N.G.A.S. annuncia che il processo dell'Avisun è indipendente dal quello della Montecatini. Come Lei conosce bene, l'Avisun già fabbrica il polipropilene 10,000 t/a. in Stati Uniti e ha il progetto da produrre 50,000 t/a. del quello. È il problema importante non solo per la società nostra ma anche per la Montecatini.

Per favore, mi indichi la Sua opinione sulle seguenti questioni.

1. Il processo dell'Avisun è affatto indipendente dal quello della Montecatini, compreso il catalizzatore?

2. Il brevetto giapponese dell'Avisun che asserisce dell'impiego d'acetilido del metallo è venuto pubblicato recentemente. Si può preparare il polipropilene isotattico col detto catalizzatore?

La prego di gradire i miei migliori saluti.

K. Yamamoto

Dr. K. Yamamoto

MONTECATINI

Società Generale per l'Industria Mineraria e Chimica

Brevetti e Documentazione Tecnica

Vene Giovanni
Piero Giustini

Data
5 maggio, 1960

PROMEMORIA

R - 6 MAG 1960
2131

per il Signor.....

Ing. Piero GIUSTINIANI

e P.C. AVV. DELVECCHIO
Prof. NATTA
Ing. ORSONI

e P.C. Sig. AVV. Mario G.E. LUZZATI

Oggetto: Dipendenza processi Avisun da brevetti
Montecatini -

Mi riferisco alla lettera diretta al prof. Natta dal Dr. Yamamoto della Mitsui il 15/4/60, per sottoporre bozza di risposta che riterrai opportuno inviare a questo signore.

Con ossequio.

[Signature]
all' *tel. Bureau*

May, 1960

Dr. K. YAMAMOTO
Mitsui Chemical Industry Co., Ltd.
Miike Works
Omuta, Japan

Re: Avisun processes depend upon Montecatini's Patents

We are replying to your letter of April 15 addressed to Prof. Natta.

- 1) Avisun commercial processes are not independent of Montecatini's patents. In fact the samples of Avisun polypropylene we have examined up to now do all result as manufactured using Montecatini catalysts.
- 2) Our technicians have not yet succeeded in producing commercial polypropylene using only Avisun process and it is very improbable that they can succeed in the future.
- 3) Our competitors probably think that they can play on a patent situation still uncertain to confuse the ideas of the Japanese concerned.
Luckily our Japanese patent situation in this field is already clear and is becoming more and more established as the time passes.

In short we do not see any legal possibility for Avisun in Japan either to import or to manufacture commercial polypropylene or to have it legally manufactured by third parties in Japan.

Yours faithfully,

"M O N T E C A T I N I"

COPIA

Dr K. Yamamoto
Mitsui Chemical Industry Co., Ltd.
Fujikawa Works
Omura, Japan

Omura, 15.4.1960

Prof. Dr. G. Natta
Istituto di Chimica Industriale
del politecnico
Milano, Italia



Egregio Dottore,

La ringrazio della Sua gentile lettera del 16.2. Già è l'aprile. Malgrado alla premura dei direttori della società nostra non ancora viene approvato il contratto tra la Montecatini e la Mitsui da Nostro Governo.

Mi pare, la competizione nei campi dell'applicazione tra polietilene con alta cristallinità e polipropilene isotattico, in altre parole, la incertezza in quanto alla domanda di quest'ultimo sia una causa principare. Ma, ora una nuova situazione accade. Cioè la Nuova Giappone Azoto Soc. che una delle gran società chimico-industriale nel Giappone, ha sollecitato al governo riguardo all'importazione della tecnica, da cui l'Avisun in Stati Uniti fabbrica polipropilene. La N.G.A.S. annuncia che il processo dell'Avisun è indipendente dal quello della Montecatini. Come Lei conosce bene, l'Avisun già fabbrica il polipropilene 10,000 t/a in Stati Uniti e ha il progetto di produrre 50,000 t/a del quello. E' il problema importante non solo per la società nostra ma anche per la Montecatini.

Per favore, mi indichi la Sua opinione sulle seguenti questioni.

1. Il processo dell'Avisun è affatto indipendente dal quello della Montecatini, compreso il catalizzatore?
2. Il brevetto giapponese dell'Avisun che asserisce dell'impiego d'acetilido del metallo è venuto pubblicato recentemente. Si può preparare il polipropilene isotattico col detto catalizzatore?

La prego di gradire i miei migliori saluti

Dr. K. Yamamoto

27 dicembre 1960

Giappone

ns.rif.1053/1v

Dr. Ing. K. Yamamoto,
Mitsui Miike Senryo Works,
Mitsui Chem. Ind. Co., Ltd.
Omuta, Fukuoka,
Giappone

Egregio Ingegnere,

rispondo con ritardo alla Sua lettera dell'1.12.1960, perchè solo da pochi giorni sono rientrato a Milano dopo un periodo di convalescenza in seguito ad un'operazione chirurgica.

Ho appreso con piacere il contratto tra la Montecatini e la Mitsui. Sarò molto lieto di vederLa a Milano nel prossimo mese di febbraio.

Osservo dalla Sua ultima lettera che Lei ha fatto molti progressi nella lingua italiana e mi rallegro molto con Lei, date le notevoli difficoltà che ha dovuto superare.

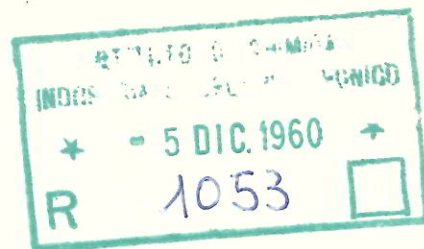
I migliori saluti.

G. Natta

Mitsui Miike Senryo Works
Mitsui Chem. Ind. Co., Ltd.
Omuta, Fukuoka, Japan

Omuta, 1. 12. 1960

Prof. Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico
Milano, Italia



Egregio Dottore;

Il contratto fra la Montecatini e la Mitsui è approvato dal governo giapponese nel mese scorso.

Come L'ho già avvertito, in 1955 sono andato a Mülheim / Ruhr in Germania, dove ho esercitato la tecnica della polimerizzazione dell'etilene a bassa pressione presso il Prof. Dr. K. Ziegler. Dopo tre anni è stato costruito l'impianto del polietilene a capacità di 1000 t./m. in Iwakuni dal nostro Know How.

Da due anni in qua mi sono adoperato al lavoro della preparazione delle materie prime del poliuretano (toluendiizocianato e polipropilenglicole). In conseguenza fino a recente giorno non ho potuto pregiudicare se possa partecipare allo studio del polipropilene.

Essendo state felicemente stabilite la base delle loro industrializzazione, è diventato quasi certo che posso andare in Italia da esercitare la tecnica della produzione del polipropilene. Naturalmente sarò lieto di vederLa a Milano. Il tempo sarà il febbraio dell'anno prossimo.

Mi duole avere solo un po' di progresso in lingua italiana, soprattutto in conversazione, perché non ho punto d'occasione da parlare italiano in Omuta. Sto parlando per mezzo dei dischi e del segno di pronuncia e dei cinematografici. L'ostacolo della lingua è la più grande sofferenza per me. Domando d'ora innanzi il Suo aiuto al mio lavoro.

I migliori saluti

Dr. Ing. K. Yamamoto

19.4.1961

Prof. Natta

Egr. Dr. K. Yamamoto
Mitsui Chemical Industry, Co.
Omuta Works
Omuta - Japan

Prot. N. 375/r1

Egregio Dottore,

mi è dispiaciuto non averLa potuta vedere prima della Sua partenza, avrei potuto chiarire a voce certe Sue impressioni che ritengo infondate.

Per quanto riguarda le Sue osservazioni sulla produzione di polipropilene, ho trasmesso la Sua lettera alla Società Montecatini.

Per quanto riguarda il $TiCl_3$, esso viene preparato sia nei laboratori di Novara sia di Ferrara, in forme che presentano un'elevata attività, non inferiore a quella dei migliori campioni ricevuti dall'America.

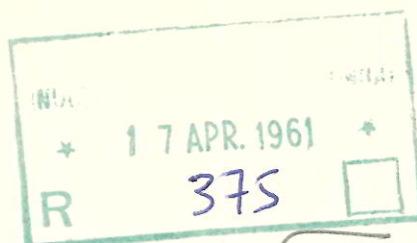
Ho provveduto a farLe inviare, in plico a parte, gli estratti da Lei richiesti.

I migliori saluti.

G. Natta

Omuta, il 11, 4, 1961

Prof. Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico
Milano, Italia



Egregio Professore;

Come ho avvertito alla Sua moglie, sto indagando nei miei laboratori per stabilire il procedimento della polimerizzazione del propilene.

A dirla schietta, ho avuto l'impressione che lo stabilimento per fabbricare il polipropilene della Montecatini non sia ancora completamente compito. Quindi devo lavorare da migliorare i procedimenti detti in base alla tecnica della Montecatini. Ma credo che possiamo superare le difficoltà in futuro vicino.

Ho ricevuto le liste dell'alticoli nel campo dei polimeri stereo-ordinati presso il Suo istituto, alcuni estratti di cui ho già ricevuto durante il soggiorno in Ferrara. Poichè ma i miei soci in Omuta vogliono leggere gli altri seguenti, vuol spedirmeloro?

No. 29, 53, 54, 64, 74, 88, 89, 108, 110,
138, 144, 153, 158, 177, 182, 192 and 198

Credo che la chiave per industrializzare la fabbricazione del polipropilene è la produzione del triclورو di titanio con l'attività forte e costante. La Montecatini ne importa adesso da America. Per sviluppare la Sua invenzione preziosa la Montecatini abbia dovuto sforzasi più riguado a questo punto. Che ne pensa? Tanti complimenti alla Sua moglie!

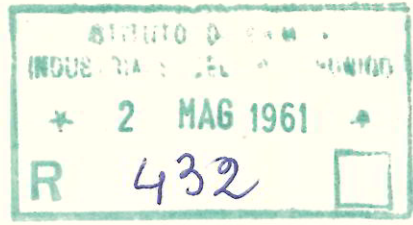
I migliori salti,

K. Yamamoto

Proffone

Omata, il 26, 4, 1961

Prof. Dr. G. Natta
Istituto di Chimica Industriale
del Politecnico
Milano, Italia



Egregio professore,

Ho ricevuto la Sua lettera e la quella dell'Ing. Giustiniani del 19, 4, che non me n'ho aspettato.

Spero che la mia espressione presuntuosa non influisca sull'amica relazione vecchia fra me e Lei. Credo che non mi avrebbe frainteso se avessi potuto visitarLa ancora una volta prima della mia partenza.

Ho avuto niente affatto la volontà che biasimo la tecnica della Montecatini. Come Lei conosce, il concorso nel mercato del polipropilene in Giappone è molto severo, quindi credo che mi devo sforzare specialmente per il miglioramento del prodotto. Giacchè la tale volontà abbia accupato sempre la mia testa, L'ho scritto la lettera del 11, 4.

Bramo anche d'ora in poi la Sua gentile direzione.

I migliori saluti.

K. Yamamoto

K. Yamamoto

Omuta, April 26, 1961

Ing. Piero Giustiniani
M O N T E C A T I N I
Largo G. Donegani, 1 - 2
Milan, Italy

copy

Dear Ing. Giustiniani,

Thank you for your kind letter of 19, 4. I did not think that my careless expression in my letter I addressed to Prof. Natta on April 11 would have caused receiving the letter from you who is a famous engineer in the world and an old friend of Japan.

Your good talks comprise a lot of precepts for me. Now informing you that my expression " non sia ancora completamente compito " means " on the way of improvements " and that I know well the famous anecdote "Columbus' egg", I will explain myself.

I hope that my personal letter would have no important effect upon the friendly relationship between our company and yours.

Sincerely yours

Dr. K. Yamamoto
Mitsui Chemical Industry Co.
Omuta, Japan

Copy: To Prof. Dr. G. Natta.

12.5.1961

*verità
atenuanti
G. Natta*

Egr. Dr. K. YAMAMOTO
Mitsui Chemical Industry Co.
Omuta Works
O m u t a - Japan

Egregio Dottore,

ho ricevuto la Sua gentile lettera del
6.5 e ^La ringrazio molto per la bella fotografia che
mi ha inviato. Con molti cordiali saluti anche da parte
di Mazzanti e Crespi,

Giulio Natta

Omuta, il 6, 5, 1961

Prof. Dr. G. Natta
Via Mario Pagano 54
Milano, Italia

Egregio Professore,

Con ciò mando una fotografia che ho fotografato all'istituto. Perchè è stato scuro nella camera, secondo la mia memoria ha fatto il cattivo tempo in tal caso, le altre sono divenute vaghe per il muover della macchina. Quindi, per favore dica ai dottori Mazzanti e Crespi che non si ha potuto stampare ~~lei~~ altri che essi sono stati fotografati con Lei.

Nella fotografia Lei potrei vedere le gomme del copolimero di etilene e propilene davanti a Lei.

Tanti saluti alla Sua signora.

I migliori saluti

K. Yamamoto

Dr. K. Yamamoto

Mitsui Chemical Industry Co.

Omuta Works

Omuta, Japan

*su un
gentil
all'ist
mi
bell
cl
ha
bel
de
K. Yamamoto
Mitsui
Crespi
Mazzanti*

*Maria
Stuenkel
Giappone*

January 18th, 1961

Prof. Kozo Hirota
Science Faculty
Osaka University
Nakanoshima, Osaka
(Giappone)

our ref. 31/eg

bis

Dear Professor Hirota,

Thank you very much for your kind letter of January 12. I am much honoured you have nominated me to a candidate for the Nobel Prize for Chemistry for 1961.

I herewith enclose the list of my papers in the field of the stereospecific catalysis, published after 1954, of which I have copies.

The papers prior 1954 are about 170: I shall send you a list of them as soon as ready, even if these works mostly do not concern macromolecular chemistry. They mainly deal with X-Ray studies on the structure of organic and inorganic substances, with works on chemical kinetics, with studies of the selectivity of some catalysts and their structures, with the causes of the aging processes.

Research works by X-Rays and electron rays on high polymers were already performed in 1933, and works on polyaddition processes by subsequent concurrent reactions were already made in 1954, solving systems of n differential equations to determine the relative kinetic constants.

Under separate cover and by air mail, I send you reprints of some papers of mine.

I wish to inform you that in 1960 we have obtained the asymmetric synthesis of optically active polymers starting from monomers which do not possess centres of optical asymmetry, using catalysts which contain asymmetric groups. I herewith enclose a reprint of this work. Other papers on the asymmetric synthesis cannot be indicated since they will be published in 1961.

./.

January 18th, 1961

- 2 -

Thanking you again heartily, I send you my kindest regards.

Sincerely yours

G.Natta

P.S. The papers I send you under separate cover are in English, French, German, since the Italian language is not admitted by the Nobel Prize Foundation.

Encl/

Osaka, Jan. 12, 1961

Prof. G. Natta
Istituto di Chimica
Industriale del Politecnico,
Milano, Italle

Dear Professor Natta

I have the honour to nominate you to a candidate for the Nobel Prize for chemistry for 1961, due to your splendid discovery on the synthetic method of isotactic polymers. If you have no objection to it, will you please to send me your treatises or other documents which can be referred to my letter of suggestion, to Stockholm, as soon as possible.

Yours sincerely,

P.s. For the sake of reference, photo-copies from the the "Noblekommittee" are enclosed.

Kozo Hirota

Kozo HIROTA
Professor of Physical Chemistry
Science Faculty,
Osaka University,
Nakanoshima, Osaka
Japan

KH/mk

(Translation.)

SWEDISH ROYAL ACADEMY OF SCIENCE
NOBEL COMMITTEE FOR CHEMISTRY

Strictly confidential

Dear Sir,

In the name of the Swedish Royal Academy of Science, we have the honour to invite you to nominate a candidate for the Nobel Prize for Chemistry for 1961.

In accordance with the terms of the Code of Statutes of the Nobel Foundation, a copy of which has been forwarded to you, the suggestion you may be pleased to make should be accompanied by a statement of the discovery or improvement on which the claim to the award of the Prize is based, and likewise a reasoned justification of the claim, supported by copies of such treatises and other documents as may be referred to therein. Works of an earlier date can only be considered in the event of their importance not having been demonstrated until recently. No suggestion will be considered that reaches the Nobel Committee after January 31st, 1961. The envelope containing the suggestion should be addressed:

The Nobel Committee for Chemistry
Stockholm 50 (Sweden)

It should also be stated on the envelope that the contents are a suggestion for the award of the Nobel Prize for Chemistry.

Stockholm, Sept. 1960.

THE NOBEL COMMITTEE FOR CHEMISTRY

ARNE WESTGREN
CHAIRMAN

THE SVEDBERG

ARNE TISELIUS

KARL MYRBÄCK

ARNE FREDGA

ARNE ÖLANDER
SECRETARY

Professor Kozo Hirota

Osaka

På uppdrag av Kungl. Svenska Vetenskapsakademien hava undertecknade, medlemmar av dess Nobelkommitté för kemi, äran inbjuda Eder att inkomma med förslag till utdelning av Nobelpriset i kemi för 1961.

I enlighet med föreskrifterna i Nobelstiftelsens grundstadgar, som till Eder översänts, bör den upptäckt eller förbättring angivas, för vilken prisets utdelande föreslås, varjämte förslaget bör vara motiverat och åtföljt av de skrifter och andra handlingar, som åberopas. Äldre arbeten kunna bliva föremål för belöning allenast för så vitt deras betydelse först under senaste tiden blivit ådagalagd. Förslag måste, för att kunna upptagas till prövning, vara inkommet till Nobelkommittén före den 1 febr. 1961. Förslagsskrivelsen bör adresseras till:

Kungl. Vetenskapsakademiens Nobelkommitté för kemi
Stockholm 50

varjämte å omslaget bör angivas att försändelsen innehåller förslag till utdelning av Nobelpris i kemi.

Stockholm i sept. 1960.

Arne Westgren

ORDFÖRANDE

The Svedberg

Karl Lagerberg

Arne Tiselius

Arne Hildebrand

Ann-Ola Larsson

SEKRETERARE



SUMITOMO CHEMICAL COMPANY, LTD.

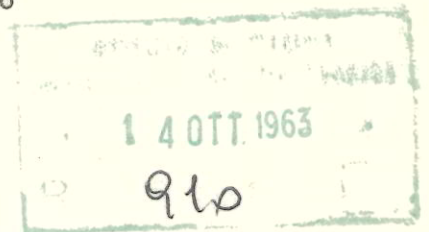
15 5-CHOME. KITAHAMA
HIGASHI-KU. OSAKA. JAPAN

Manufacturers & Exporters

CABLE ADDRESS:
CHEMISUMIT OSAKA

October 8, 1963

Prof. Dr. Giulio Natta
Istituto Di Chimica Industriale De Politecnico
Piazza Leonardo Da Vinci, 32-Milano
Italy



Dear Dr. Natta,

I have had the privilege to receive from Dr. Mangione of Montecatini a special issue of Makromolekular Chemie published in celebration of your 60th birthday.

Taking this opportunity I wish to extend my hearty congratulations to you for your celebrating 60th birthday and renew my respect of your grand achievement accomplished in this field.

The publication will certainly be very enlightening and of valuable reference to us all and for the benefit of mankind I sincerely wish that your achievement is further carried over and expanded with the collaboration of your gifted staffs.

With best personal regards,

Very truly yours,

SUMITOMO CHEMICAL CO., LTD.

S. Kodama

S. Kodama
Senior Managing Director

*inquis
V. Venturi
Verheem*

SK:AK

UNIVERSITY OF MIYAZAKI
Miyazaki, Japan

February 3, 1964

ms. Iwamura

Dr. Giulio Natta
Centro Nazl. Chim. Macromolecole
Milan
Italy

Dear Professor Natta:

Allow me to offer my sincerest congratulations on your acceptance of the Nobel Prize in chemistry in 1963.

Your great achievement is doubtless due to the fact that you have been so much attentive to all nature before you, and to the great God Himself, I believe.

May peace and happiness be yours in your future life.

I have the honour to be,
Sir,

Yours faithfully,

Iwao Iwamura

Iwao Iwamura
President, Miyazaki University
(ex-Professor of Biochemistry)

II:ma

Prof. Furukawa

March 11, 1969

Prof. Junji Furukawa
Kyoto University
Department of Synthetic Chemistry
Faculty of Engineering
Yoshida, Kyoto - Japan

Dear Professor Furukawa,

Thank you very much indeed for your
heartfelt words of sympathy about the loss of my dear wife. They
are of great comfort to me.

Yours,

Giulio Natta

March 4, 1969.

Dear Professor Natta :

I know the death of Mrs. Natta by your recent letter written to Dr. Nakaniwa. It is a great shock for me, as I had seen her last summer, when she was in good health condition. I hope you will believe in the sincerity of my sorrow for you. Believe me, with best love and deepest sympathy, Your affectionate,

Junji Furukawa

ISTITUTO DI CHIMICA
INDUSTRIALE DEL POLITECNICO

- 1 GIU. 1970

122

Prof. Giulio Natta
Istituto di Chimica Industriale
del Politecnico
Pizza Leonardo da Vinci 32
20133 Milano
Italy

Proffone

Gakken Co., Ltd.
4-40-5 Kamiikedai
Ohta-ku
Tokyo

May 18, 1970

Dear Prof. Natta:

Thank you for your manuscript for our new encyclopedia.

We received your manuscript with a great pleasure on April 13.
We present you our most cordial thanks for it.

When we have finished with translation of your copy into
Japanese, we will send you the Japanese translation with your
original copy.

If you have any additions of new information to the copy,
please let us know the information by letter.

We have taken the steps necessary to remit remuneration
to you. So you can get it in July.

Yours sincerely,

Miki

Fumio Miki
Manager of Encyclopedia Dept.

*dot
14.000
Zambelli*

FM/mm

PAR AVION 航空郵便

日本郵便 50



Prof. Giulio Natta

Istituto di Chimica Industriale del
Politecnico

Pizza Leonardo da Vinci 32

20133 Milano

Italy

はじめに ここをおる

First fold here

Second fold here

つぎに ここをおる

差出人郵便番号住所氏名

Sender's name, address and postal code

Fumio Miki, Manager of Encyclopedia Dept.

Gakken Co., Ltd.

4-40-5 Kamiikedai, Ohta-ku, Tokyo

Japan

この郵便物には なにも入れたりはりつけたりすることができません
Nothing may be contained in or attached to this letter.

To open cut here

RACCOMANDATA

April 3, 1970

Giulio Natta

our ref.No. 8/r1

Dr. Fumio Miki
Manager of Encyclopaedia Dept.
Gakken Co., Ltd.
4-40-5 Kamiikedai
Ohta-ku, Tokyo, Japan

Dear Doctor Miki,

please excuse my long delay in answering your kind
letter of January 8, 1970.

I am sending you, enclosed herewith, my contribution on "POLYPROPYLENE" for your Encyclopedia. I hope that this is convenient.

With best regards,

Giulio Natta

Encl/

Giulio Natta

Industrial Chemistry Dept., Polytechnic Institute of Milan.

Director

Istituto di Chimica Industriale del Politecnico, Piazza Leonardo da Vinci 32, 20133 Milano (Italy)

a) Polypropylenes are the polymers, whose chain consists of the repetition of $-\text{CH}_2\text{CH}(\text{CH}_3)-$ monomer units with head-to-tail arrangement; these polymers are obtained by polymerization of propylene (C_3H_6).

b) Each monomer unit constituting polypropylene contains a pseudo-asymmetric carbon atom.

When the configurations of the pseudo-asymmetric carbons of a single chain are either equal or opposite at random, polypropylene is called atactic; when all pseudo-asymmetric carbons of the same chain have the same configuration, polypropylene is called isotactic; when each pseudo-asymmetric carbon has a configuration opposite to that of the two first adjacent pseudo-asymmetric carbons (i.e. that preceding and that following it in the chain), polypropylene is called syndiotactic.

Atactic polypropylene is an amorphous product endowed with elastomeric properties.

Isotactic and syndiotactic polypropylenes are crystalline by X-rays and melt respectively at $\sim 175^\circ\text{C}$ and $\sim 130^\circ\text{C}$.

The melting point depends on steric purity.

Isotactic polypropylene may be obtained as fibers or films and finds industrial applications.

The various types of polypropylene are obtained by selective catalysts.

c) This type of polymerization that allows the control of the steric structure of the polymers is called stereospecific.

K.Ziegler and G. Natta were awarded with the Nobel prize in Chemistry in 1963 for their research works in this field.



No
interesan
scienze
Chimica

Prof. Giulio Natta
Via Mario Pagano 54
Milan.
Italy

GAKKEN CO., LTD.
4-40-5 Kamiikedai
Ohta-ku, Tokyo
Japan

rispondere scusatissimo per il ritardo

January 8, 1970

Dear Prof. Natta:

At the suggestion of your country's embassy in Tokyo, we take the liberty of approaching you with an earnest request to co-operate with us in our project of compiling a comprehensive encyclopedia.

Our company is Japan's largest publisher of educational books and magazines for all age levels. We are also pioneers in the fields of audio-visual education, research and development of educational toys, teaching machines, and other educational aids.

One of our most important achievements is the publication of a series of Japanese-language encyclopedias with an unprecedented variety. To mention a few examples, our "New Multi-color Contemporary Encyclopedia" (8 vols.), "Multi-color Illustrated Student's Encyclopedia" (8 vols.), "Multi-color Modern Science Encyclopedia" (10 vols.), "Contemporary Household Encyclopedia" (10 vols.) and others all enjoy a high reputation and have won a wide popularity among the Japanese reading public.

As part of the program to commemorate the 25th anniversary of our company's founding, we are now planning to compile a highly comprehensive Japanese-language encyclopedia which will have at least 24 volumes. This encyclopedia will be compiled on unique principles and will be superior to any which has ever been published in Japan. In fact, we believe that it may be compared favorably with any similar publication elsewhere in the world.

We are now beginning to make thorough preparations for this project. The encyclopedia will be international in scope and will follow the principle of "firsthand information from the most authoritative sources." This is why we are seeking the collaboration of leading scholars throughout the world.

We wish to request you to assist us by contributing an article on the subject mentioned in the attached sheet, on which we understand that you are the recognized authority. Your contribution may be written either in English or in the language of your preference. We will assume the responsibility of translating the article into Japanese. You will find additional information in the enclosed Guide for Contributors and specimen entry.

If you are unable to write the article yourself, would you be so kind as to recommend to us some other scholar who would, in your opinion, be a suitable contributor on this subject?

Your contribution will not only benefit the Japanese public; it will also promote understanding and amity between our two countries. We trust that you will kindly consider our request and are looking forward to your favorable reply. We shall be very much obliged if you will reply using the enclosed mail coupon.

Yours very sincerely,

GAKKEN CO., LTD.

F. miki

Fumio Miki
Manager of Encyclopedia Dept.

FM/mm
Enc. 2

GUIDE FOR CONTRIBUTORS

1. This encyclopedia is meant for the Japanese general public.
2. Subject on which you are requested to write:
Polypropylene
3. Total number of words:
about 300
4. Division of contribution into three parts
First part
Definition and summary (in a few lines)
Second part
Explanation in detail constituting the main body of the entry
Last part
Additional information, references, etc. (in a few lines)
5. Charts and bibliography:
Please include charts if necessary. At the end of your manuscript, please add a bibliography of books which probably are available in Japan.
6. Language:
English or the language of your preference
7. Remuneration:
Italian Lira 14,000
to be remitted upon receipt of your contribution
8. Time limit:
Please dispatch your manuscript by registered air mail not later than March 31, 1970.
Your cooperation in this respect will be particularly appreciated.
9. In the margin, please write:
 - a. Your name in full
 - b. The institution (university, etc.) to which you belong
 - c. Your position in the institution
 - d. Your address to which remittance is to be made

SPECIMEN ENTRIES FOR CONTRIBUTORS

Matushita Konosuke (1894 -)

(First part)

Businessman, a leader of the household electrical appliance industry in Japan

(Second part)

Born in Wakayama Prefecture, he left primary school without completing the course. He studied while working as an electrician. He founded the Matsushita Electric Ind. Co., Ltd. in 1918 and achieved success with the "National" trademark. After World War II, he received a certain setback with the dissolution of the zaibatsu, but entering into technical cooperation with Philips of the Netherlands in 1952, expanded his business of manufacturing electrical goods at the time when Japanese consumers were clamoring for household appliances.

(Last part)

He has been frequently listed as the largest income earner of the nation. He is also known as the initiator of a moral movement called PHP (Peace and Happiness through Prosperity).

Odessa

(First part)

Port city facing the Black Sea in the Ukrainian Soviet Socialist Republic of the U.S.S.R. Population 740,000 (1965).

(Second part)

An important Soviet seaport along the Black Sea coast. The city, which grew up on the hills at the northeast of the delta of the Dniester river, is noted for its scenic beauty. Odessa ships out agricultural and livestock products and receives shipments of oil, coal, and other industrial raw materials. It is a highly developed manufacturing center, with machine-building, metal working, sugar refining, tobacco, leather making, and chemical industries. It is a cultural center, with a university, an art school, and a museum. It is also famous as a health resort.

In antiquity, Odessa was a Greek colony. It became part of Russia at the end of the 18th century. Towards the end of the Czarist period, it became a center for the Narodniki movement. Early in the Russian Revolution, Odessa was a base for revolutionary activity, but the counter-revolutionary forces were also strong, and Odessa was at one time occupied by German and French forces. Complete liberation came only in 1920.

(Last part)

Odessa was the scene for the rebellion aboard the battleship Potemkin.

da fine leggere
da Lambell

Con il nome di polipropilene vengono definiti i polimeri lineari ottenuti da G. Natta e collaboratori per polimerizzazione del propilene mediante apertura del doppio legame, con formazione di una catena principale lineare costituita da gruppi $-CHCH_3-CH_2-$ legati tra di loro, avente un doppio legame terminale.

Data la presenza di un atomo di carbonio terziario in ogni unità monomerica della catena, si presentano dei fenomeni di stereoisomeria dipendenti dalla conformazione relativa degli atomi di carbonio terziari delle unità monomeriche.

Nel caso della polimerizzazione non stereospecifica si ottiene un polimero amorfo, avente proprietà elastomeriche, caratterizzato da una distribuzione random delle unità di diversa costituzione sterica.

Nel caso invece, che la polimerizzazione venga condotta in modo stereospecifico, si potranno avere dei polimeri cristallini aventi struttura isotattica o sindiotattica, a seconda che tutti gli atomi di carbonio asimmetrici presentano la stessa configurazione oppure si succedono regolarmente nella catena atomi di carbonio aventi configurazione opposta.

La polimerizzazione stereospecifica viene ottenuta con l'impiego di catalizzatori speciali stereospecifici quali, nel caso della polimerizzazione isotattica, gli alluminio alchili in presenza di $TiCl_3$ cristallino. Il polipropilene isotattico ha una temperatura di fusione che dipende dalla sua purezza sterica e può raggiungere i $170^\circ C$ circa. Può essere ottenuto sotto forma di fibre o film orientati per estrusione e successivo stiro. Le fibre di polipropilene isotattico hanno applicazione nel campo tessile. La presenza di atomi di carbonio terziari nella catena principale consente l'innesto di gruppi reattivi che permettono la vulcanizzazione dei prodotti ottenuti per stampaggio e per trafilatura mediante pressofusione.

POLIPROPILENE

Chiamato di *senza difetti i polimeri lineari sono per il P.M.M. e altri per*
Il polipropilene viene ottenuto per polimerizzazione del propilene mediante
apertura del doppio legame, con formazione di una catena principale ^{lineare} costi-
tuita da gruppi $-CH(CH_3)-CH_2-$ legati tra di loro, ^{o un'asse catena lineare} ed aventi un doppio legame ter-
minale.

Data la presenza di un atomo di carbonio terziario in ogni unità monomerica ^{della}
~~non terminale~~ ^{catena} si presentano dei fenomeni di stereoisomeria ^{dipendenti} a seconda della
conformazione relativa degli atomi di carbonio terziari ^{della} di ogni unità mono-
merica ^{che}.

Nel caso della polimerizzazione non stereospecifica si ottiene un polimero
amorfo, avente proprietà elastomeriche, ^{costituito da catene che si dispongono}
Nel caso, invece, che la polimerizzazione venga condotta in modo stereospe-
cifico si potranno avere dei polimeri cristallini aventi struttura isotattica o
sindiotattica, a seconda che tutti gli atomi di carbonio asimmetrici presen-
tano la stessa configurazione oppure si succedano regolarmente nella catena
atomi di carbonio aventi configurazione opposta.

La polimerizzazione stereospecifica viene ottenuta con l'impiego di cataliz-
zatori speciali stereospecifici quali, nel caso della polimerizzazione isotat-
tica, ^{gli allumini etilici o propilici e} il $TiCl_3$. ^{che dipende dalle reazioni che si verificano} Il polipropilene isotattico ha una temperatura di fusione, ^{di circa}
^{circa} 170 C. ³⁰⁰⁰⁰⁰ Può essere ottenuto sotto forma di fibre o film orientati ~~se ot-~~
~~tenuto~~ per estrusione e successivo stiro. Le fibre di polipropilene isotattico
hanno applicazioni nel campo tessile. La presenza di atomi di carbonio ter-
ziari nella catena principale consente l'innesto di gruppi reattivi che ^{consente} portano
~~alla~~ vulcanizzazione dei prodotti ottenuti per stampaggio o per trafilatura ^{per} ~~per~~ ^{mediante}
pressofusione.

January 13, 1971

Paffone

Dr. S. Kodama, Vice President
SUMITOMO CHEMICAL COMPANY, LTD.
15 5-Chome, Kitahama
Higashi-ku, Osaka

our ref. 1/eg

Dear Doctor Kodama:

Thank you very much for the beautiful calendar you kindly
sent to me.

I reciprocate kindest wishes and regards.

G. Natta



SUMITOMO CHEMICAL COMPANY, LTD.

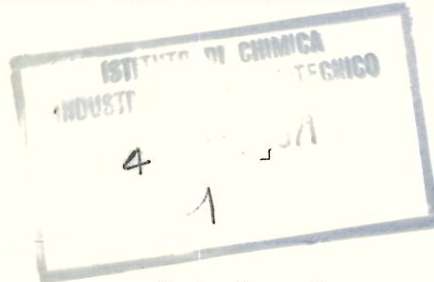
15 5-CHOME, KITAHAMA
HIGASHI-KU, OSAKA, JAPAN

CABLE: CHEMISUMIT OSAKA
TELEX: 0522-7541 CHEMISUMIT OSA

TELEPHONE: OSAKA (06)
203-1231

December 30, 1970

Prof. G. Natta
Istituto di Chimica Industriale del Politecnico
Piazza Leonardo da Vinci
32 Milano
Italy



Dear Prof. Natta,

We wish to take the pleasure of informing you that we have sent you, under separate airmail, a 1971 calendar of our company.

This calendar is prepared in Japanese language and we are afraid that you may find some difficulty to understand the meaning of some sentences thereon. But this calendar is special in a sense that it is made from synthetic paper "Spiax[®]" manufactured by the process developed by our company.

We hope you will find it of some interest to you.

It is our sincere wish that 1971 will be another year of prosperity for you.

With best regards,

Very truly yours,

SUMITOMO CHEMICAL CO., LTD.

S. Kodama

S. Kodama, Vice President

SK:TT

Prof. Natta

November 18, 1971

Prof. Junji Furukawa
Kyoto University
Department of Synthetic Chemistry
Faculty of Engineering
Yoshida, Kyoto, Japan

Dear Professor Furukawa,

Thank you very much for kindly sending
me a copy of lecture book prepared for the lecture trip in Usa last
July. I received it some days ago, and I will read it with much interest.

With my kindest regards,

Giulio Natta

KYOTO UNIVERSITY

DEPARTMENT OF SYNTHETIC CHEMISTRY
FACULTY OF ENGINEERING
YOSHIDA, KYOTO, JAPAN

July 10, 1971

Professor Dr. G. Natta
via Mario Pagano
Milano 54
Italy

Dear Sir:

Enclosed is a lecture book prepared for the lecture trip
in USA in July this year and sent for your use. Your acceptance
would be deemed a favor.

Yours sincerely,

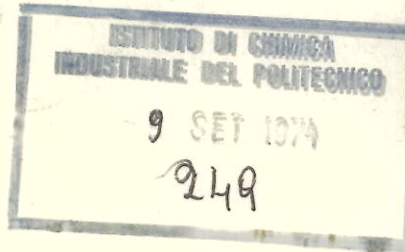
J. Furukawa

Junji Furukawa
Professor of Synthetic
Chemistry

JF:so
Encl.

*manipolazione
del libro che
ha scritto
con molto
interessi*

Professor of Polymer Processing,
or Chemical Engineering,
University of Milano,
Milano,
Italy



Graffoni
Aug. 1st 1974
Prof. Dr. Kensei Hayashida
Faculty of Textile Science,
Kyoto University of Industrial
Arts and Textile Fibers,
Matsugasaki, Sakyo-ku,
Kyoto / Japan
(Kyoto Kogei Sen-i Daigaku)

Dear Professor !

I have now the honor of writing you a letter. I'm taking charge of the professional chair of Chemical Engineering in our university and giving lectures on Polymer Processing and Chemical Engineering.

On the 1st of september of this year I shall start on a travel for the inspection of the present condition of research and education in the field of Polymer Processing in europe as a researcher despatched by Japanese Ministry of Education, and arrive at Roma on the 27th of October. Then I wish to visit your laboratory on 28th of october.

In order to utilize the given visit time most effectively I would like to ask you to prepare the following materials:

Curriculum for the course of polymer processing,
Explanation of laboratory (equipments, cost of research etc.),
Some reprints of treatises,
Another materials which exhibit the developements of polymer processing in Italy, etc.

When I shall visit you, I shall telephone to you beforehand. I hope to hear from you soon.

Very sincerly yours,

Kensei Hayashida