

# APRIL 2018

SOCAR Polymer Newsletter / Issue 4 / 2018

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528

Employees

15,254,248

Man-hours LTI Free

99.5%

PP Total progress in April

93.9%

HDPE Total progress in April



# Azerbaijan's chemical industry on the rise



Dear colleagues,

Following the economic development strategy formulated by the Head of State, SOCAR Polymer is upholding the cause of expanding the borders of and developing the chemical industry in Azerbaijan.

The chemical industry is an economically significant part of the whole industry of the world. It has expanded greatly throughout the 1990s globally. The EU, the United States and China have been the largest players. Asian countries are increasing their global chemicals market share. In 2007, China produced three times as much as in 2000.

The significance of the chemical industry in the international economy is even greater than statistical figures show, because chemicals are important components in a large proportion of the articles produced in other industries. Basic chemicals, consumer products, pharmaceuticals, cement, and paper production, mining and the pulp industry – all make use of chemistry-based technology. The computer industry, which has transformed society in recent years, could not have been developed if the chemical industry had not provided certain new chemicals, for example for processes for the manufacturing of computer chips. International trade in chemicals is growing at a substantially faster rate than production. The share of the

chemical industry in international trade exceeds 10%. It is the 3rd largest trade sector globally in a breakdown into 14 sectors. The trend is very clearly towards an integrated global market.

The chemical industry is the 4<sup>th</sup> largest manufacturing sector in Azerbaijan. It accounts for just over 6.2% of economic turnover in Azerbaijan's manufacturing sector. Growth in the national chemical industry is expected to increase over the next few years, as new enterprises form an industrial cluster around the SOCAR Polymer plants. We, as a company, have the honour of facilitating this process through our corporate contributions and strategic presence. I would like to thank everyone who has walked with us along this long road towards the accomplishment of our tasks for the development and prosperity of Azerbaijan.

**Farid Jafarov**



April 2018

# Site Photos



# PROGRESS ON SITE DURING APRIL

## HDPE plant

March 2018

Progress over April 2018

April 2018



### HDPE: Blending Silos.

Instrument cabling and Air manifolds installation to continue. Supports and Pneumatic pipe erection in progress



### HDPE: Organoleptic Structure and Effluent Treatment.

SS erection and cable tray installation ongoing. Erection of cooling water lines ongoing





**HDPE: Extrusion Structure.**  
RCC works completed. SS and piping erection in progress. Junction box and sandwich panel installation in progress



**HDPE: Polymerization.**  
Equipment erected. Piping & Support erection ongoing. SS, junction box, lighting, etc. installation in progress



**HDPE: Electrical Substation.**  
Rack room HVAC panels' cable connection, and instrumentation panels' cabling ongoing





HDPE:  
Polymerization  
Pipe Rack.  
Pipe support  
installation  
ongoing. Cable  
tray installation  
ongoing. Cable  
pulling in  
progress



HDPE: Reactor  
Dump tank.  
Electrical works  
in progress



HDPE: Catalyst  
Activation.  
SS erection in  
progress





HDPE: Bagging & Packing.  
Cladding in progress.  
Equipment installation ongoing



HDPE: Low Pressure Solvent  
Recovery.  
Instrument installation  
and cabling completed



# PP plant and U&O area

March 2018

Progress over  
April 2018

April 2018



PP/U&O:  
Electrical  
substation.  
Complete  
energization  
activity in  
progress



PP/U&O:  
Common Control  
Room.  
Pre-  
commissioning  
activities in  
progress



PP/U&O:  
Chemical  
& Additives  
Storage Building.  
Roof sheeting  
works completed



PP/U&O:  
Laboratory.  
Finishing works  
completed







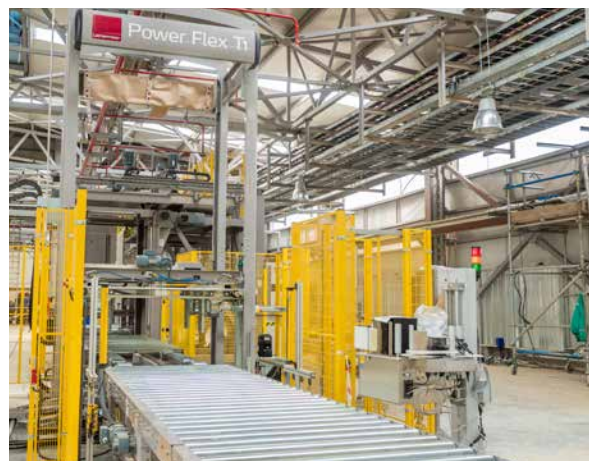
PP/U&O:  
Administration  
building.  
Finishing works  
completed



PP/U&O:  
Workshop.  
Most finishing  
works completed



PP/U&O:  
Bagging &  
Packing Building.  
Joint sealing  
works in  
progress



PP/U&O: Fire  
water Retention  
Basins and  
Pump House.  
Pre-  
commissioning  
in progress



March 2018

Progress over  
April 2018

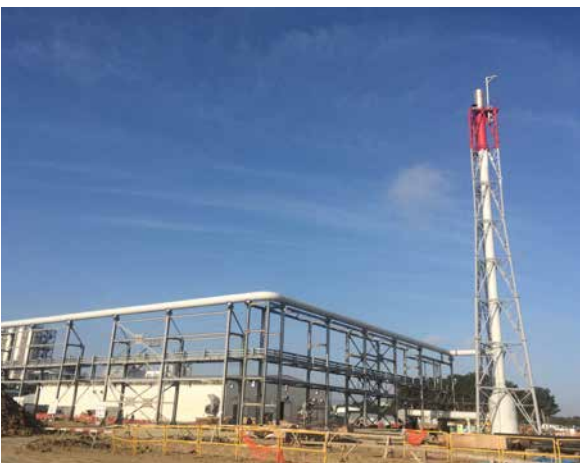
April 2018



PP/U&O: Air/  
HP Nitrogen  
Condensate  
Compressor  
Station's Storage  
& Pumping  
facilities.  
Pre-  
commissioning  
in progress



PP/U&O:  
Cooling Tower.  
Pre-  
commissioning  
activities in  
progress



PP/U&O: Flare  
Stack.  
Pre-  
commissioning  
activities in  
progress



PP/U&O: Valve  
house.  
Finishing works  
completed





PP/U&O: Gate/  
Guard House.  
Repair works in  
progress



PP/U&O: PP-  
Wet section /  
Polymerization.  
Equipment  
testing in  
progress



PP/U&O: PP  
Dry Section  
/ Extrusion  
building.  
Piping tests  
completed.  
Lighting System  
installed and  
powered up.  
Lift erection  
completed



PP/U&O:  
Homogenization  
/ Blender Silos.  
Commissioning  
activities in  
progress





PP/U&O: PP Dry section / Powder Silos.  
Pre-commissioning activities in progress



PP/U&O: Raw Water Storage Tank.  
All activities completed



Warehouse.  
Joint sealing works in progress





PP/U&O:  
Interconnecting  
Pipe Racks.  
Pipe testing  
completed



Nitrogen  
package.  
Commissioning  
activities in  
progress



Roads.  
Internal roads'  
construction  
ongoing. Laying  
of the first  
asphalt layer  
ongoing. Area  
lighting works in  
progress



# Project progress status

## PP Plant Progress

### Disciplines

### Cumulative Progress

Detailed Engineering



**100%**

Procurement Orders



**100%**

Subcontracting



**100%**

Material Supply – Manufacturing and Delivery



**100%**

Construction



**98.7%**

Overall



**99.5%**

## HDPE Plant Progress

### Disciplines

### Cumulative Progress

Detailed Engineering



**99.9%**

Procurement Orders



**99.9%**

Subcontracting



**100%**

Material Supply – Manufacturing and Delivery



**99.5%**

Construction



**87.2%**

Overall



**93.9%**

# SOCAR Polymer, strategic partner for Caspian Downstream

The international forum, Caspian and Central Asia Downstream. Trading, Logistics, Refining, Petrochemicals, took place at Boulevard Hotel in Baku on April 23 – 26, brought together 250 participants from 30 countries and featured 45 speakers from Azerbaijan, Georgia, Iran, Kazakhstan, Kyrgyzstan, Russia, Turkey, Turkmenistan, and Ukraine. This year's event also commemorated the 95<sup>th</sup> anniversary of National Leader Heydar Aliyev.



projects, pipeline capacities and infrastructure, seaports and railroad transportation, bulk petrochemical production capacity building and global petrochemicals price trends, as well as the need to adapt emerging IT technologies to raise production and management efficiency. Logistics appeared on the Forum's agenda for the first time.

Progress of large-scale Azerbaijani petrochemical projects under development was brought to the attention of the audience, along with the update on the capacious GPC venture. Among the high-profile Azerbaijan speakers were Energy minister Parviz Shakhbazov, SOCAR First Vice president Khoshbakht Yusifzade, Rector of Baku Higher Oil School Elmar Gasimov, BP-Azerbaijan Vice president Bakhtiyar Aslanbayli, Carbamide plant Director Khayal Jafarov, Azerkimya Deputy Executive Director Orkhan Jafarov and Director General of SOCAR Methanol plant Elnur Mustafayev.



The regional industry meeting point was introduced in 2016 by Azerbaijan State Oil Company SOCAR, with the support of the Baku Higher Oil School and the Confidence Capital Group, a British petroleum industry event organizer, to address the need for up-to-date, trustworthy, original-source industry news, analysis

and information sharing among the business, regulators and industry community. The initiative has been gaining momentum ever since, as the Forum's international attendance nearly doubled in 2018 as compared to 2017. SOCAR Polymer has become one of the strategic partners supporting the event.

The 2018 Forum was streamlined into four sessions, to review oil refining capacities in the region, the upgrade works refineries are undergoing or plan to undergo in near future, and the impact the temporary stopover in their operations are having on the regional markets, as well as feedstock sources and export routes for regional gas

Speaking about SOCAR Polymer's activity over the past year, Deputy General Manager Fuad Ahmadov reported on the status of construction and commissioning works at the company's Polypropylene and High-Density Polyethylene plants in Sumgayit. "The detailed engineering and procurement activities for the PP plant have been 100% completed, with the construction works having reached the 98.1% mark. The overall progress of works at the Polypropylene Plant reached 99.2% in early April. The plant will be launched in June this year." F.Ahmadov added that the tax exemptions, infrastructural support and other incentives provided to the residents of the Sumgayit Chemical Industrial Park have brought SOCAR Polymer \$100 mln USD in savings. The Deputy General Manager also emphasized the benefits of the SOCAR Polymer project to the economy and the people of Azerbaijan.

To tally an intensive three-day information swapping and processing, the delegates visited the Heydar Aliyev refinery in Baku and the petrochemical plants under construction in the chemical-industrial park in Sumgayit.

# Üstay celebrates World Health and Safety Day

As new industries develop, existing industries expand, and new technology is introduced, unfamiliar hazards to human health and environment arise. The challenge is to match protection of people and nature with the fast pace of industrial innovation.

As grim statistics runs it, 317 million accidents occur on the job annually. The human cost of this daily adversity is vast and the economic burden of poor occupational safety and health practices is estimated at 4 per cent of global Gross Domestic Product each year.

The World Day for Safety and Health at Work is an annual global advocacy campaign to promote safe, healthy and decent work. It is held on 28 April and has been observed by the International Labour Organization (ILO) since 2003.







On 28 April 2018 the SOCAR Polymer site team, led by Üstay fellow workers and joined by the KT-Kinetics Technology crew, celebrated 13 000 000 safe and LTI-free man hours of developing the PP and HDPE construction sites. Having implemented over 200 projects in 11 countries world-wide, including recently launched Wasteto Energy plant in Balakhani, Üstay, an Istanbul-based construction-contracting and trading company, has been awarded a subcontracting job to perform earthworks, infrastructure, piling, civil engineering, as well as mechanical, electrical and instrumentation erection, and pre-commissioning for the Polypropylene and High-Density Polyethylene plants. To encourage a culture of prevention and promote the “One Team” spirit, Üstay organized interactive games, and Q&A contests for the international staff at the SOCAR Polymer site. No man-made system is foolproof, and in chemical plants where a safety system failure would have devastating effects on people working there and those living around, the workforce absolutely must accept safety ethics as an integral part of their daily behavior, practice constant vigilance and be at all times aware of work-related hazards. At SOCAR Polymer we share and abide by these values.



# OPS Trainings



OPS (operations) trainings are offshore/onshore trainings conducted for SOCAR Polymer’s operation/maintenance/laboratory staff to expand their theoretical knowledge and practical skills regarding the technical aspects of operating/maintaining various types of equipment/facilities installed at the PP plant. Trainings are arranged by Tecnimont, SOCAR Polymer or Fluor, and are delivered at vendors’ facilities abroad or at appropriate institutions in Azerbaijan.

In the month of April, SOCAR Polymer employees attended the following trainings abroad:

OFFSHORE TRAININGS					
Training theme	Company/Location	Duration	Dates	Number of participants	Participants' positions
<b>Licensor training - Operations</b>	INEOS Lilo, Belgium	4 weeks	3 - 27 Apr	7	4 shift supervisors, 2 process engineers, and 1 polymer specialist
<b>Licensor training – Process Control</b>	INEOS Lilo, Belgium	4 weeks	3 – 27 Apr	3	1 DCS technician, 1 operator, and 1 instrument supervisor
<b>Licensor training - Laboratory</b>	INEOS Lilo, Belgium	1 week	23 – 27 Apr	2	2 senior lab technician, and 1 dayshift lab engineer

# On-the-job training sessions at the SOCAR Polymer plant site

The EPC contract with the Tecnimont company includes trainings which the Kinetics Technology (KT) company has been provided on daily basis since 28 August. An extensive Training Program has been carried out since August 2017 to date, covering all aspects of plant operations and comprising both Classroom training (480 hours total) by various specialists and vendors, and On-job training (1050 hours total) to be led by experienced technicians until the end of the project to ensure complete grooming of SOCAR Polymer operators for efficient handling of the Plant. The trainings are listed under four major disciplines/categories: electrical, instrumentation, mechanical and operation. Thus, the SOCAR Polymer plant personnel gets a better understanding of the principles of equipment operation, and grows better informed of the basic maintenance and troubleshooting processes.

More detailed information on some of the training sessions conducted on site in April is provided below:



Training title	Training Vendor	Duration	Dates	Number of participants	Participants' positions
<b>OHSAS Lead auditor course</b>	Intertek	1 week	9-13 Apr	2	1 construction HSE manager and 1 HSE supervisor
<b>Forklift Driver training</b>	SQA Group	4 days	17-20 Apr	3	3 operators
			23-26 Apr	3	3 operators
			30 Apr – 03 May	3	2 operators and a mechanical technician
<b>Emotional Intelligence</b>	HRC	1 day	13 Apr	8	3 shift supervisors, 2 bagging shift supervisors, 2 mechanical supervisors, and 1 electrical supervisor
			25 Apr	11	2 bagging shift supervisors, 2 mechanical supervisors, 5 senior lab analysts, 1 instrument technician, and 1 HSE team lead
<b>Basic Supervisory Skills</b>	HRC	1 day	26 Apr	6	2 bagging shift supervisors, 2 mechanical supervisors, and 2 shift supervisors
<b>Emergency Response Team Member training</b>	OTI	5 days	25-29 Apr	11	4 mechanical technicians, 2 electrical technicians, 2 instrument technicians, 2 operators, and 1 bagging operator
			30 Apr – 4 May	11	8 PP operators and 3 HDPE operators
<b>Emergency Response Team Lead training</b>	OTI	5 days	25-29 Apr	3	2 shift supervisors and an environmental specialist
			30 Apr – 4 May	3	2 shift supervisors and an HSE Lead

# The daily work routine of the Quality Assurance Department

Nowadays, the most popular word at the site is “a walkdown”, which implies “site inspections”.



Every morning, at 08:30, the representatives of SOCAR Polymer and the contractor company gather in the meeting room to plan inspection of sub-systems and to distribute work among their teams.

At 09:00, the teams gather on an agreed spot, and real quality control work starts. All the sub-system equipment and installations to be handed-over are inspected one at a time. All identified deficiencies, incomplete work, outstanding works, or non-conformities, if any, are then categorized and recorded. Based on these records, quality controllers communicate their comments to the Contractor's staff.

Gasified areas are a separate topic. It is well known that all electrical equipment and instrumentation to be installed in such areas of high explosion hazard must be specially

selected and certified. Moreover, the verification of this equipment and devices also requires additional knowledge, skills, experience and, most importantly, a higher level of responsibility, because even the smallest spark can create hazardous conditions. The required degree of responsibility is understood not only by the Quality Assurance Department but also by the Service Department employees who consistently and supportively work on this matter.

A few hours later, a site inspection session called “a walkdown” ends. The documents printed out on white paper in the meeting room at the dawn of the workday return from the site crumpled, torn, stained, greasy, folded several times, with margins full of notes and comments scribbled on them. And that is an evidence of hard work done and a busy day lived through.



However, the Quality Assurance Department's performance is not limited to fieldwork alone. All records made at the site must be neatly replicated in appropriate document forms, the new recommendations documented, and the resolved issues removed from the database.

Although everybody is responsible for issues within their area of specialization, it is cumulatively team work. For example, an electrical and instrumentation inspector always works in close collaboration with the mechanical,

insulation and piping inspectors. Sometimes the former turns in certain inspected items to them and sometimes accepts inspected items from them. The managers of the Quality Assurance and Hand-over/Acceptance departments, too, are involved in this process, but not only as managers, but also as specialists in their own areas of expertise. The main objective of such inspections is to keep our facilities and equipment functioning faultlessly, reliably and ceaselessly during their lifetime without any danger to human life.



# In commemoration of a worthy son of Azerbaijan

Ali Mustafayev Mustafa-oglu (14.04.1952 – 20.11.1991) was an Azerbaijani TV journalist, publicist, member of the Azerbaijan Journalists Union, and a frontline reporter during the Daglig-Garabagh conflict.



Ali Mustafayev was born on 14 April 1952 in the Qazakhbeyli village of the Qazakh region of Azerbaijan. Upon completion of secondary education in the Dash Salahly village in 1969, he served 2 years' term in the Soviet Armed Forces. From 1971 through 1976, he worked as a lathe operator at the Baku Electric Engineering Plant. In 1976, he entered Baku State University and graduated in 1981 with a degree in Journalism. Upon graduation, he started working for "News" broadcasts of the Azerbaijani State Television and Radio company. Shortly after, he received the "Best journalist of the year" and "Golden pen" awards. He was an energetic and fearless journalist pioneering to report from the frontlines when the Daglig-Garabagh war started. In 1989-1990, Ali was a Moscow-based parliamentary correspondent of the Azerbaijan Republic's Supreme Council (Ali Sovet).

Having a few times had narrow escapes from death, including survival from helicopter accidents, Ali Mustafayev nevertheless was not afraid of dangerous assignments.





**Ali Mustafayev died on 20 November 1991 among the 22 passengers and crew members of a helicopter that was carrying Azerbaijan's peacemaking representatives and was shot down by the Armenian forces at the height of 300 meters over the Garakend village of the Khojavend district in Daglig-Garabagh, Azerbaijan. There were no survivors of the crash. Ali Mustafayev was buried at the Martyrs' Lane cemetery in Baku. He was posthumously awarded the title of a National Hero of Azerbaijan. Mustafayev was also awarded the title of an Honored Journalist of the Azerbaijan Republic. A memorial info-board to this brave journalist has been put up at the "News and Information museum" in Washington D.C.**



A national hero of Azerbaijan, Ali Mustafayev was married to Lala Mustafayeva and had three sons: Togrul, Tural and Ozal. His son, Tural Mustafayev, a Senior Procurement Specialist at SOCAR Polymer, was invited on 14 April 2018 to the opening ceremony of a bust sculpture memorial erected on the premises of secondary school number 5 in Barda city in honour of Ali Mustafayev. The event celebrated the 66th anniversary of the national hero's birth and was organized by the Barda region's Executive Authority and Barda city Education Department.

Ali Mustafayev continues to live in the memory of the Azerbaijani people. Two documentaries have been filmed in memory of Ali Mustafayev. A tanker-ship in the Azerbaijan Caspian Shipping Company has been named after Ali Mustafayev as have 7 streets in the Baku, Shirvan, Shamakhi, Kurdemir, Goranboy and Khachmaz cities of Azerbaijan. State secondary school number 202 in Baku and a secondary school in the Gazakhbeyli village of the Gazakh region of Azerbaijan have also been named after Ali Mustafayev, with bust sculptures of him exhibited in their premises. A water spring was erected on the Gazakh Silk Road with a memorial plaque of the hero.

Ali Mustafayev's heritage includes 3 books of poems, with 13 songs composed to his lyrics.



### Lines from his poem to his spouse Lala

**Mustafayeva** (translated from Azerbaijani by Ilaha Hajiyeva)

("Lala" translates from the Azerbaijani language as "a poppy")

*So, when I die, may a poppy only  
Be the flower laid on my grave.  
May friendly soil grow poppies on me,  
To them alone is my bosom's rave.*

### Lines from his poem to his sons

(translated from Azerbaijani by Ilaha Hajiyeva)

*I've grown as an oak, branchy and tall,  
Hark, son, my seeds can't grow a shrub,  
On my strong roots I rested my soul  
To live like a small bee, not a grub.*

# The rise of polypropylene



**1956**

In 1956, Montecatini chemical company, located in the city of Ferrara near Milan, used the Ziegler–Natta catalysts for the first time in the commercial manufacture of various polyolefins.

**1959**

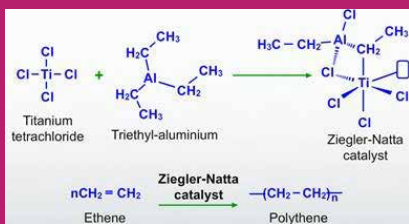
In 1959, Montecatini began production of fibers based on polypropylene.

**1962**

By 1962, polypropylene production lines emerged in all industrially developed countries, primarily in Japan and USA, and polypropylene became a formidable rival to other polymers.

**1965**

In 1965, the first polypropylene facility emerged in Soviet Russia, in 1977 – in Kazakhstan. By now PP takes up approximately 26% of the global polymer material market and keeps growing at a rate twice as large as that of steel, alumina, tin, paper, and glass.



The breakthrough in the commercial production of polyethylene and polypropylene occurred with the nascence of the Ziegler-Natta catalyst that nurtured polymerization process at mild temperatures and pressures.

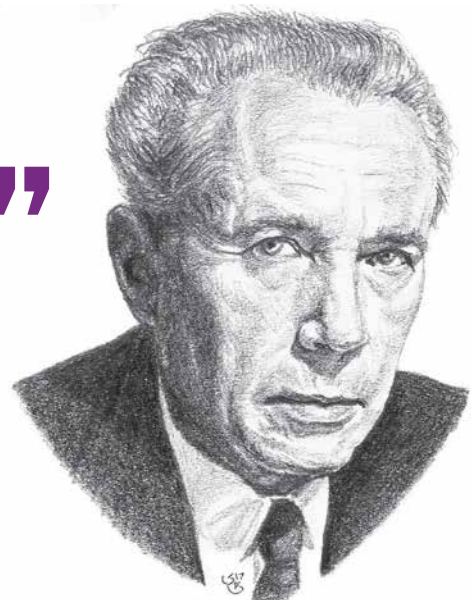
Usually, Ziegler catalysts refer to titanium-based systems for conversions of ethylene; and Ziegler-Natta catalysts refer to systems for conversions of propylene.



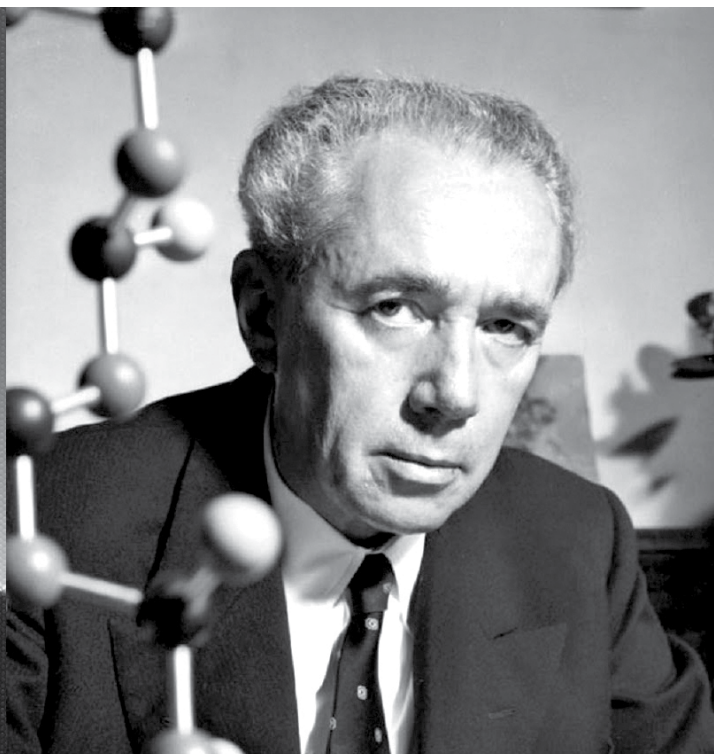
## Karl Ziegler and Giulio Natta

*The name of Natta is entwined inextricably with that of Ziegler, in the famous catalyst systems known by their names and used to make polyethylene and polypropylene.*

S. Sivaram, "Giulio Natta and the Origins of Stereoregular Polymers"







In 1952, Giulio Natta, Head of the Department of chemical engineering at Politecnico di Milano University, and a few of his fellow colleagues attended a lecture by Karl Ziegler, Director of the Max Planck Institute for Coal Research (Mülheim, Rhur, Germany), at a meeting of the German Chemical Society in Frankfurt. Ziegler, credited for much of the post-war resurrection of chemical research in Germany, was the co-founder of the Society and its President since 1949.

In that lecture, Ziegler described his work on the extension of a polymer chain by repetitive addition of an olefin across a carbon-aluminum bond. The majority of his audience did not find anything particularly catchy about the organometallic compounds.

However, Natta who enjoyed practical connections among the Italian industries immediately recognized the significance of Ziegler's findings, and upon return to Milan, persuaded a company called Montecatini to invite Ziegler to Italy.

It took Montecatini 600,000 Deutsche Marks, a sizeable fee in post-war Germany to say the least, to convince an academic professor to start working for them as of January 1953.

The historic experiment, which resulted in the extraction of solid polyethylene, was conducted and recorded on 26 October 1953. On 16 November 1953, the reaction was extended to propylene.

After Karl Ziegler developed a method for creating molecular chains using catalysts, Giulio Natta took it further. In 1955, he came across a catalyst that formed molecular chains with their parts oriented in certain directions. This made it possible to produce rubbery and textile-like materials. The discovery was announced publicly at the National Lyncean Academy in Rome in 1955.

In the 1970s, magnesium chloride was discovered to greatly enhance the activity of the titanium-based catalysts. These catalysts were so active that the residual titanium was no longer removed from the product. They enabled commercialization of linear low-density polyethylene (LLDPE) resins and allowed the development of non-crystalline copolymers. Together, these polymers represent the largest-volume commodity plastics, as well as the largest-volume commodity chemicals in the world.

The 1963 Nobel Prize in Chemistry was awarded to Karl Ziegler, for his discovery of first titanium-based catalysts, and to Giulio Natta, for using them to prepare stereo-regular polymers from propylene.



**Prize motivation:** "for the discoveries in the field of the chemistry and technology of high polymers".

Alfred Nobel, a Swedish chemical engineer and inventor of dynamite, bequeathed 94% of his fortune to the Nobel Foundation, constituted on 29 June 1900 as a private organization, that now forms the economic base of the Nobel Prize to "reward those who serve humanity".

In the 19th century the Nobel family were the leading representatives of foreign capital in Azerbaijan. Alfred's brother, Robert, was the first foreign investor in the oil sector in Baku. According to the Nobel family archives, it was Alfred's and Ludwig's decision to allow "withdrawal of Alfred's money from Baku that became the decisive factor that enabled the Nobel Prizes to be established".

## Now in Azerbaijan

The Nobel family wealth honours the scientific achievement that is bringing the Ziegler-Natta catalyst to manufacture polypropylene in Azerbaijan on a new spiral of technological advance.

# Magic carpets of polymer



Any length of time has its own temper and rhythm, that leaves no choice for its contemporaries than marching in tempo, prince and pauper, genius and average alike. Time, it seems, has been picking up speed since it was invented as a notion. The life before the turn of the twenty-first century was leisurely-paced and foreseeable. Man-made environment used to match the worldview in size and weight, it used to be grand, deliberate, set in stone or carved out of wood to outlive generations. However, as we grow into a new restless gadget-augmented species, we set our environment in polymer to better suit our newly-emerging needs. We are getting increasingly mobile and we prefer to travel light.



## Airlounge. Healthy inflation

This is an airlounge, a light inflatable settee made out of water-resistant rip-stop parachute nylon. The inner layer of the sky bag is made of polymer. Thanks to its sealing properties it can hold the air for as long as twelve hours. Sized 220 X 70 cm, it weighs 1100 grams, holds another 250 kg of an average family, and folds compactly to fit into a small bag. Suffice to straighten it out and give it a light shake, for it to breathe the air in and take the shape. No need for a pump.

The thing is cross-functional and works in a broad temperature range, on any surface – water, sand, snow, gravel or grass.

We've known hiking tartan rugs, sleeping bags, lilos, floaties, yoga mats, hammocks, and inflated beds for unexpected guests. The airlounge stretches the line of frameless furniture just a little bit further.





## Frame your business

The frameless poufs, floor cushions and bean bags, as specimen of anti-design and an outcry against rationalism, first emerged in Italy in the late 1960th. One day, an exasperate Italian designer decided to fill up a big sack with balloons and called his invention "Sacco", or sack.

No rigid frame, no breaks, no sharp corners and scratchy points, and no wonder the flower children loved it so much. An artefact of hippie chic, it went viral overnight. Having no wooden or metal pieces, a bean is basically made of two bags put into one another. An external one comes in a variety of fabric textures and colours, including genuine leather, and an inner one is made out of water-proof synthetic,

filled with polystyrene foam. It's virtually impossible to fall off a loose chair like this, as it adjusts and clings to any bodily position. Yet, kids love them, and young families find them a great value for money, a piece of furniture that brightens up interior décor at virtually no expense. Provident seniors stock them at their dachas. Movie houses install special "pouf halls" for films screenings for particularly gravity-sensitive viewers. Event organizers find them indispensable for mass rentals at international expos and fairs.





[www.socarpolymer.az](http://www.socarpolymer.az)

OPENING NEW FRONTIERS  
IN THE PETROCHEMICAL  
INDUSTRY OF AZERBAIJAN

 **SOCAR**  
**POLYMER**