

# 2<sup>nd</sup> QUARTER 2019

SOCAR Polymer Newsletter / Issue 26 / 2019

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**695**  
Employees

**1,242,745**  
Man-hours LTI Free

**SOCAR POLYMER**

# Set goals and achieve



Dear team,

Now that both plants of the SOCAR Polymer production facility have been constructed and put into operation we are setting new goals to progress towards and continue keeping up the traditional internal and external corporate activities to make SOCAR Polymer known as a company that has proven itself capable of not only successfully implementing innovative projects, but also establishing, organizing, maintaining and sustaining operation and production to accomplish economic targets in a context of an ever developing technical and industrial world.

We, as a company, continue participating and contributing into such social, marketing and networking events as exhibitions, forums, charity initiatives, and efforts in support of educational development. This year, too, we have made our presence tangible in the region's two large specialized events dedicated to the recent worldwide oil and gas

developments, the Caspian Oil & Gas Exhibition and SOCAR's International Forum. We have supported the prominent young participants of students' 1st scientific conference organized by the Baku Higher Oil School, as development of human resources has always been a priority target to us.

May the new production chapter in the history of our company have memorable stories of success recorded in the years to come! May we accomplish our subsequent goals together putting into use all the valuable experience and knowledge we have gained over the past years!

**Farid Jafarov**

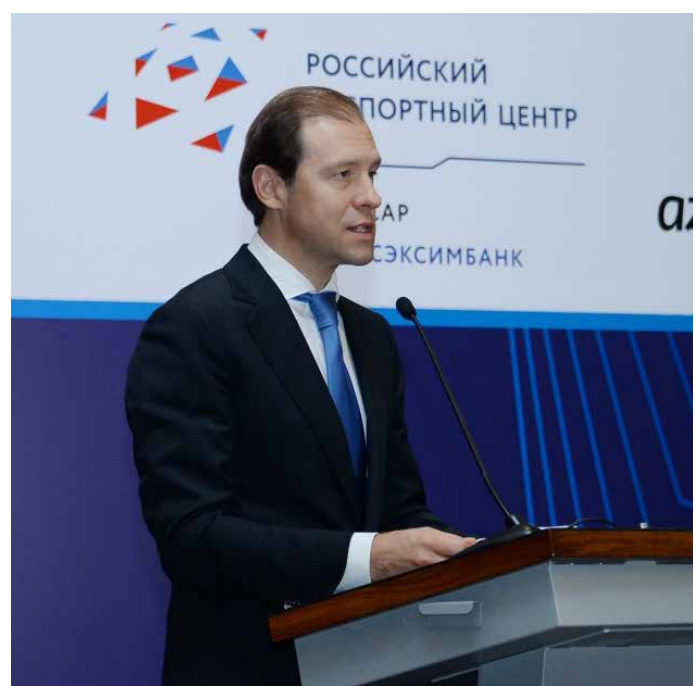
# SOCAR Polymer mentioned in the context of cooperation between Azerbaijan and the Russian Federation



On April 4, Baku hosted an Azerbaijan-Russian forum of industrial cooperation with participation of government officials and business representatives.

Speaking at the forum, the Minister of Economy Shahin Mustafayev emphasized that the heads of the two states had laid a solid foundation for strategic expansion of economic cooperation between the countries. He reminded that in 2018 alone the presidents met six times at events targeted among other things at implementation of projects and signing of important documents. Such, for instance, was the event in Sochi where the heads of the two states signed an agreement on development of industrial cooperation. A significant role in the development of bilateral cooperation is also played by the intergovernmental state committee on Azerbaijan-Russian economic cooperation.

Russia is one of Azerbaijan's key trade partners, a #1 in export of non-oil products. In 2018 alone, the commercial turnover with Russia increased by 20% in comparison with the previous year and reached 2.5 bln USD. This growth





trend is ongoing, as measures are undertaken to expand and diversify the trade ties, with Azerbaijan's trade representative office established in Russia and a trade house mechanism applied. The Minister of Economy also informed about the performance of the Russian export center's branch in Baku and the outcomes of the business workshop dedicated to Gazprombank's investment opportunities in Azerbaijan.

Underlining the two countries' successful investment cooperation, the minister mentioned presence of up to 700 companies functioning on the basis of Russian investment capital. So far, Russian investments into Azerbaijan economy have constituted cumulatively 4.4 bln USD. The scope of Azerbaijan's investments into RF has exceeded 1.2 bln USD. "Our country attaches great significance to further expansion of industrial cooperation with Russia. The SOCAR Polymer project, the pharmaceutical plant in Pirallahi Industrial Park, the cooperation between the Ganja automobile plant and

Russian "KAMAZ" and "Ural" plants, the implementation of joint projects by "Azermash" and "GAZ" are some of the significant projects in the field of mutual investment", the minister said.

The Minister of Industry and Trade of the Russian Federation, Denis Manturov emphasized the significance of the industrial cooperation forum that has assembled over 60 Russian companies to discuss mutually beneficial joint activities in the economic field. He underlined the potential for cooperation and positive dynamics in a number of areas including trade and investments.

Among other speakers of the forum were the Chairman of the Azerbaijan-Russian Business Council Samed Gurbanov, the Director of the Russian Export Centre Andrey Slepnyov, and the acting head of the Export and Investment Promotion Foundation in Azerbaijan (AZPROMO) Yusif Abdullayev.

# SOCAR Polymer contributed to Students' 1st Scientific Conference at BHOS



**BAKI ALİ NEFT MƏKTƏBİ**  
**BAKU HIGHER OIL SCHOOL**



The 1st Republican Scientific Conference of Students dedicated to the 96th anniversary of the national leader Heydar Aliyev, took start at the Baku Higher Oil School (BHOS) on 15 April 2019. The conference was attended by the School management and academic staff, as well as the management and other representatives of SOCAR and ANAS.

The 1st Republican Scientific Conferences of Students ended on the 19th April. The closing session was attended

by representatives of several companies that supported the event, such as the Integrated Drilling Works Trust of SOCAR, the SOCAR Polymer company, Huawei, Maire Tecnimont, ABB, Microsoft, Emerson Process Management, Avandis Group, and others.

On welcoming the guests, president of BHOS, Elmar Gasimov informed the audience about the results of the 4-day conference held at BHOS premises.



Then, he invited BHOS partner companies' representatives to partake in the ceremony of presenting awards to the students who had successfully delivered presentations on conference topics such as "Prospects of Chemistry and Chemical Engineering", "Petrochemical Processes", and "Polymers, Composites and Advanced Materials".

SOCAR Polymer's Technical Director, Gabil Mikayilov represented our company at this event and presented valuable gifts to the students who successfully delivered their presentations on such topics as "Polymers, Composites and Advanced Materials", "Oil and Gas Technology and Petrochemical Processes", and "Biotechnology, Pharmaceuticals and Software-based Chemical Engineering". Some motivational gifts and certificates were also awarded to selected students who had actively participated in and contributed to the conference outcomes.



# SOCAR Polymer plant visited by business representatives of the Caspian and Central Asia region



On April 22-25, the SOCAR Polymer plants in Sumgayit were visited by the senior representatives of fuel-energy companies, petrochemical facilities and logistic companies of the Caspian and Central Asia region who participated in SOCAR's 4th International "Caspian and Central Asia Downstream Forum: Trading, Logistics, Refining, Petrochemicals" forum dedicated to the 96th birthday anniversary of the all-national leader Heydar Aliyev.

The guests were taken on a bus tour round the production site and got familiarised with the general structure and operation of the plant. Then, they were ushered to the bagging building where the SOCAR Polymer Deputy Manager gave further details about the plant and the project and answered the guests' questions.

At the end of the event, business cards were exchanged, and memorable photos taken.









# SOCAR Polymer participated in SOCAR's IV International Forum



SOCAR Polymer LLC Finance Director Rauf Guliyev participated in SOCAR's IV International "Caspian and Central Asia: Trade, Logistics, Oil refining, Petrochemicals" forum.

The forum was attended by about 300 senior officials, leading specialists and other representatives of fuel-energy companies, petrochemical facilities and logistic companies of the Caspian and Central Asia region.

Speaking at the forum, Rauf Guliyev gave a presentation about the SOCAR Polymer project implemented with an





investment amount of about 800 mln USD. He informed that the Polypropylene Plant launched in the 3rd quarter of 2018 and the High-density Polyethylene Plant launched in the 1st quarter of 2019 will satisfy the local demand for polymers and export the remaining volume (around 75% of produced products) to Turkey, Europe and CIS countries.

R.Guliyev also informed that the Project was financed with 60% Debt and 40% Equity capital. During Financial Closure around 35 agreements were signed by different parties.

Wrapping up the presentation, he demonstrated the most recent photos of the plants and the consumer products that can be produced from polymers.



# SOCAR Polymer once again at the annual Caspian Oil & Gas Exhibition



On 29 May 2019, the 26th International “Caspian Oil & Gas” Exhibition took start in the Baku Expo Center. The SOCAR Polymer company once again participated in this annual event which gathered the leading experts of the global and regional oil and gas industry, attracting attention to Azerbaijan. This exhibition is a key meeting place for industry professionals and an opportunity to catch up with colleagues and clients. The organizers of the event are the “Iteca Caspian” and “ITE Group” companies.

At its stand, the SOCAR Polymer company demonstrated samples of polypropylene and high-density polyethylene pellets, as well as some samples of industrial, construction and consumer products that are currently produced by several local companies from our polymers used as feedstock down the production chain.

The Silver sponsor of the exhibition, SOCAR Polymer attracted large numbers of visitors to its stand. Our company representatives answered their questions, addressed their inquiries and facilitated contact for potential cooperation.

A large video screen demonstrated a 4-minute short video about the SOCAR Polymer company, its history, goals, achievements and advantages, as well as the diversity of social and educational events and initiatives undertaken



to boost not only the economic, but also the professional human resource potential of our country.

Also, a large touchscreen installed at the stand offered rather detailed information about the structure of the company, the different phases of the Project Implementation Period, a gallery of photos of the production site and of significant events in the history of the Project, a list of polymer grades to be produced and their characteristics, description of polymers' application areas, etc. – all accessible through an engaging interface with inquisitive visitors. All videos are available for viewing on SOCAR Polymer company's official youtube channel.



**PP plant**

**Design capacity**

184,000 KTA      120,000 KTA

**Licensor**

LyondellBasell      INEOS

**EPC contractor**

Tecnimont S.p.A      Tecnimont S.p.A

**Process technology**

Spheripol      Innovene S, slurry phase

**Polymer types**

Homopolymers      Natural and black grades

High-impact copolymers

Random copolymers

SCIP



**SAP ERP**

**Smart Management at SOCAR Polymer LLC**

Quality Management

Sales and Distribution

Production Planning

Materials Management

Plant Maintenance

Cost Control

Training Management

Financial Supply Chain Management

**QUALITY CONTROL**

**ISO**      **SOCAR POLYMER**      **ASTM**  
TEST METHODS      SINAQ ÜSULLARI      INTERNATIONAL  
Standards Worldwide

PHYSICAL-MECHANICAL TESTS  
THERMAL-PHYSICAL TESTS  
CHEMICAL TESTS  
CHROMATOGRAPHY  
SPECTROPHOTOMETRY  
RHEOLOGY



**SALE DESTINATIONS**


Local market      Turkey and European markets

25%      75%



Current export  
Future export

**Transportation means:**



# Sharing SOCAR Polymer's success story and best exhibition practices



On April 30, a month before the start of the annual Caspian Oil & Gas exhibition, a SOCAR Polymer representative took part in the professional breakfast networking event for local and international companies-exponents to highlight the key items on an exhibition preparation activities checklist. The event organized by the Iteca Caspian company assembled over 50 business owners, managers and PR representatives of exponent-companies at the Shusha Hall of the Hyatt Regency conference building.

The event was aimed at giving those present tips and best practice example of securing most productive outcomes from the 4-day international event, as well as at providing favourable networking conditions for different exhibition participants to meet, plan ahead, raise common issues pertaining to the process of preparation for exhibitions, and share ideas and experiences – all in a nothing less than business atmosphere created amidst a nice breakfast setting.





A speaker on behalf of the organizers gave a presentation on “Tips and Hints for Making Exposition Experience Most Rewarding” while the audience actively took notes. Then, a few event participants were given the floor to share their past experience in the annual Caspian Oil & Gas Exhibition to let the audience gain some inspiration from business success stories straight from the source. Showcasing some quite original success stories, this inspirational start to the day saw the proven business leaders offer an insight into the practical reality of their business journey facilitated by such large exhibition events. The audience heard how they overcame obstacles; what drove them to go to the next level; how they scaled up a winning idea quickly; and where they found the right sources of information and advice.

Speaking on behalf of the SOCAR Polymer company, our PR specialist gave a brightly illustrated and detailed presentation about our company’s progressive experience in showcasing annual achievements and demonstrating the company’s consistent growth. The event participants exhibited live interest in the presentation and asked questions in its course and afterwards.

Following these sessions, the audience was given a chance to further communicate, exchanging business cards and contact information.



# SOCAR Polymer employees' support to BHOS students



With the support and encouragement of the SOCAR Polymer company, during the month of May the Senior Process Engineer Narmin Aslanova reviewed Baku Higher Oil School students' diploma works. There were 8 papers prepared by the students of the Chemical Engineering department. Narmin read the papers to provide official feedback which characterized the papers as good pieces of work that met all the important requirements. Apart from some minor disadvantages, the papers were in comprehensible language and conformed to the standards.

Another colleague of ours, the Head of HDPE Production Operations, Asif Mammadov has given lectures in the Baku Higher Oil School (BHOS). The lectures on "Energy generation and Utilization" and "Separation Processes" were given to 4th and 5th year students, respectively. Additionally, Asif has also supervised the diploma work of a group of 6 students. The topic of the diploma work is "PMMA (Polymethylmethacrylate) production in Azerbaijan". This potential project is divided into 6 different parts and each student had simulated those parts in the ANSYS HYSYS software, doing all the necessary calculations and providing a cost analysis for the project. PMMA is one of valuable polymers that are highly priced on the market, making the design project very interesting for the students. In the end, the students prepared a poster describing PMMA in detail and successfully presented their diploma work.

Thus, our company continues the tradition of extending support to students studying relevant disciplines.







# PMMA Production Plant



BAKI ALI NEFT MƏKTƏBİ  
BAKU HIGHER OIL SCHOOL

## Main Product

### Poly(Methyl Methacrylate)

- Light Transmission: 92%
- Glass Transition Temperature: 108°C
- Melt Flow Rate: 1.5-4.0 g/10min
- Tensile Strength: 75 MPa
- Degrades at: ~300 °C
- Molecular Weight: 520000 g/mol

#### Additives:

- n-Dodecanthiol
- Plasticizers
- Fillers
- TiO<sub>2</sub> (white)
- CdS (yellow/orange)
- Cr<sub>2</sub>O<sub>3</sub> (green)

## Byproducts

### Phenol

- Amount: 120000 ton/year
- Price: 1800 USD/ton
- Revenues: **USD 217,345,000**

### Ammonium Bisulfate

- Amount: 85500 ton/year
- Price: 1200 USD/ton
- Revenues: **USD 103,000,000**

### Methacrylic Acid

- Amount: 2000 ton/year
- Price: 570 USD/ton
- Revenues: **USD 1,100,000**

## Raw Materials

### Raw Materials

Raw Materials	Demand (tons/year)
Benzene	146000
LPG	83000
Sulfuric Acid	125000
Sodium Hydroxide	0,19
Methanol	35500
Hydroquinone	0,87
AIBN	320
Natural Gas	37000 (1000m <sup>3</sup> /year)
Ammonia	28000 (1000m <sup>3</sup> /year)

**Total Cost of Raw Materials:**  
**\$ 371,000,000**

## Process Diagram

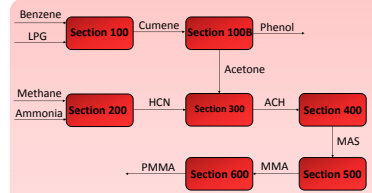


Figure 3. Block diagram of PMMA production plant.

## Authors

- Oktay Gafarov
- Elshad Mammadov
- Yadigar Nazarov
- Ilkin Ibrahimli
- Elmira Mustafayev
- Oqtay Khalilov

## Supervisor

- Asif Mammadov

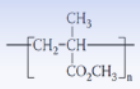


Figure 1. Poly(methyl methacrylate) segment.



Figure 2. PMMA pellets



Figure 3. PMMA sheets

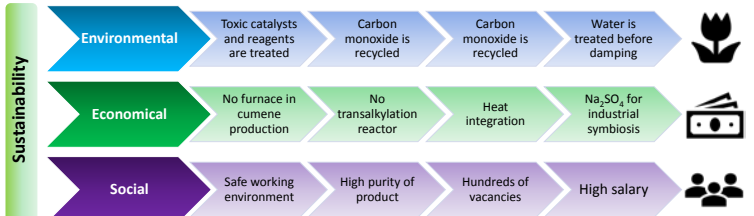
## Cost Analysis

### Capital Expenditure

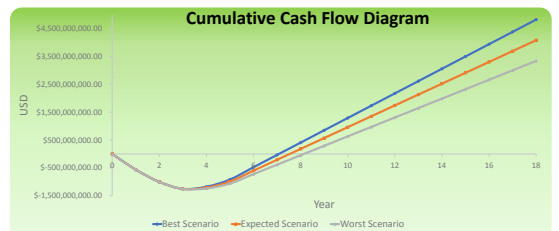
ISBL	\$ 597 314 758,83
OSBL	\$ 238 925 903,53
Engineering Costs	\$ 83 624 066,24
Contingency Charges	\$ 334 496 264,95
<b>CapEX</b>	<b>\$ 1 254 360 993,55</b>

## NPV and IRR for Different Scenarios

Scenario	Worst	Expected	Best
NPV (10%)	\$ 1,669,695,230	\$ 3,700,491,811	\$ 5,731,288,391
NPV (15%)	\$ -230,568,757	\$ 1,077,346,733	\$ 2,385,262,223
NPV (20%)	\$ -1,167,810,612	\$ -286,031,536	\$ 595,747,539
IRR (%)	14,1705%	18,6486%	22,6923%
Pay-back time	8 years	7.5 years	7 years



## Cumulative Cash Flow Diagram



# SOCAR Polymer in Baku Marathon 2019



SOCAR Polymer continues to remain loyal to the tradition of participating in the annual Baku Marathon. This year's marathon took place on May 5 and involved participation of 50 SOCAR Polymer employees.

Organized at the initiative of the Heydar Aliyev Foundation with the support of the Seaside Boulevard and Baku Olympic stadium, the marathon started at the National Flag Square at 10 a.m. stretching for 21 km to the finish line at the Baku Olympic stadium.

SOCAR Polymer highly encourages its employees to participate in the Marathon. On May 5, both office and site employees assembled at the National Flag square. Compared to the last year's run, participants of SOCAR Polymer have increased this year.

Among SOCAR Polymer employees, Zulfugar Mammadov and Elisabeth Viellerobe reached the finish line first. Elchin Fataliyev, Elvin Mammadov, Islam Asadov, Ilkin Mahammadov were among the runners who made it to the finish line.

Retaining its "Win the wind" motto, Marathon's purpose is to promote healthy lifestyle, engage citizens and foreign guests to practice sport and bring everyone together for good intent. Marathon combines in itself values such as unity, wellness, solidarity and positivity.





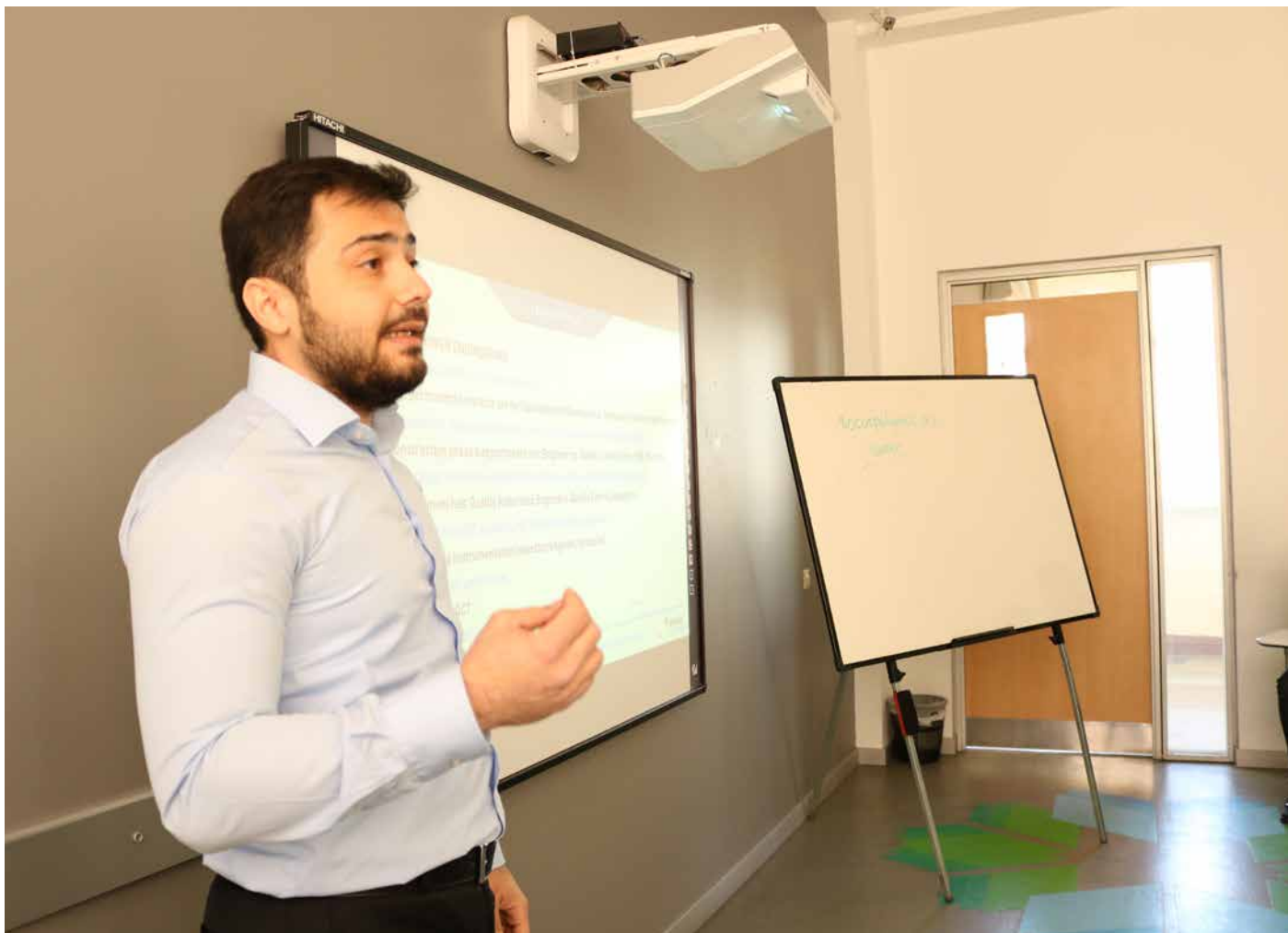
# A Successful Student Support Initiative



The students of the Azerbaijan State Oil Industry University (ASOIU) benefitted both professionally and personally from a workshop held at their university upon the initiative of a SOCAR Polymer employee who spent 90 minutes informing, interacting, answering and asking questions. The event organized jointly by ASOIU and SOCAR Polymer, with the support of our IT, HR and PR teams, was debuted in March and repeated this time on April 23. Well-advertised by the dean, the event aroused much interest.

It is noteworthy that the Education Ministry's initiative to create SABAH student groups since 2015 was aimed at improve higher education quality, to create a new distinctive environment in higher education, to nurture well-educated, skilled and trained graduates, and to meet the rising demand of the HR market in good-quality employees and the increasing requirements applied to them.





**Heybat Muradov**

Electric & Instrumentation Inspector  
QA/QC Department

- The purpose of the workshop was to explain to students how important university education is and how they can use it in the future, that's why the name of the training was "From studentship to business". The audience consisted of 25 SABAH students and Zakir Hasanov, dean of the Power Engineering department. The workshop participants assembled in the SABAH group's classroom asked questions

directly or remotely related to work in the industrial sector, and in small- to large-scale projects, as well as inquired about the most efficient ways of becoming a good engineer. Among the topics discussed were "Quality Records and Documentation during construction" and "Engagement in a facility's commissioning phase". The students enjoyed the style of our communication, the new information received, the induced motivation to get well-educated and an encouraged passion for a successful future career. They expressed wish to have such events organized on regular or at least frequent basis.





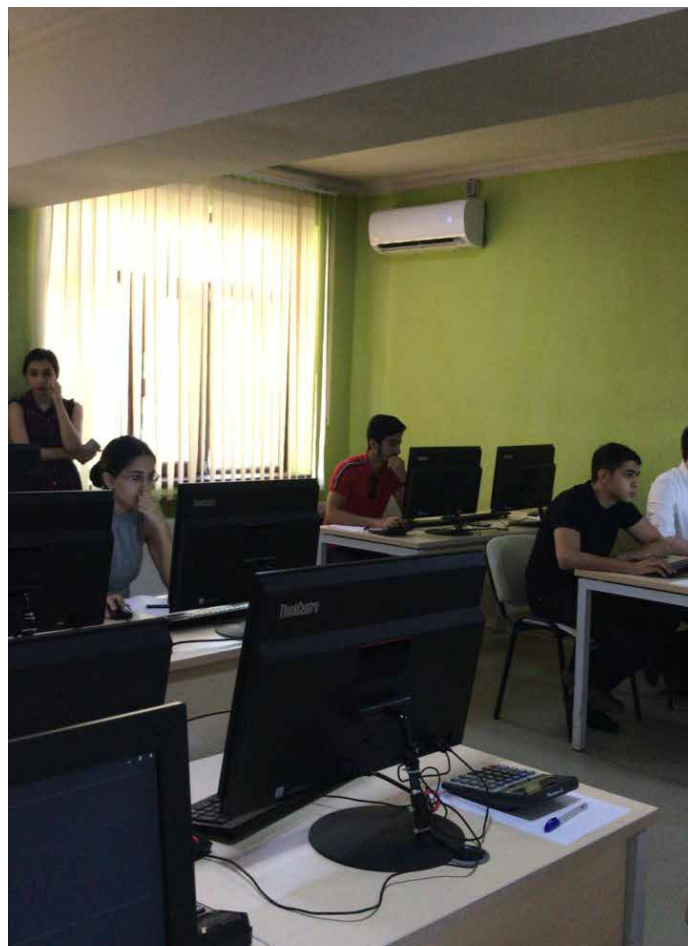
I presented promotional pens to every participant, as well as copybooks to 7 most active students who best answered the questions on the topic of my previous presentation. We took no breaks during the 1.5 hours long workshop, as it was very interesting and engaging. After the event, Zakir Hasanov expressed intention to incorporate the workshop topics and training materials into next year's relevant education syllabuses.

Promoting our company, I also served the purpose of attracting more enthusiasts to participation in our internship programs to facilitate our HR department's job, particularly in recruiting for electric & instrumentation related positions.

Interest in employment at our company is sure to rise. In future, I'm planning to join the faculty of the Power Engineering department. As an employee engaged in a large project and a graduate of the same department, I can help students on their way towards reaching their career goals.

After the workshop, the ASOIU management invited me to attend their "Alumni day" where presented as a SOCAR Polymer representative I gave a short speech, following the alumni's pleasant memories and considerations about their university years.

# Summer interns selection launched



Students and graduates demonstrated genuine interest in SOCAR Polymer's Summer Internship Program and by the deadline of 30 April 2019, a total of 1272 online applications were submitted. The selection process was then launched to select finalists for the 15 intern positions advertised. The first stage of the selection process started with the eligibility check, followed by screening of the applications comprising essays, academic transcripts and CVs, leaving in the end 296 applications accepted for the next selection stage.

The shortlisted candidates received an email inviting them to the English language (EL) test, unless they had submitted a document certifying their English language proficiency level as not lower than score 6 in IELTS or 80 in TOEFL (48 applicants). The applicants from the Baku Higher Oil School were exempted from the test as the language of instruction at BHOS was English.

The English language test was held on June 24. The examinees were divided into 4 groups of about 50 people to be tested at different hours during the day. 36 applicants who demonstrated intermediate/upper-intermediate level of proficiency in the English

language were informed by email to have passed the English test.

Ability Test, which was the next stage of selection process took place on July 5-6, 2019. Ability test measures numerical analysis aptitude areas that are important in the world of work for a variety of roles. The questions were mostly based on graphs and diagrams. There were 6 blocks of questions and the candidates had a 2-minute limit to answer every block of 4 questions.

The subsequent groups of applicants were tested at 1 hour intervals and it took 2 days to complete this stage of candidate assessment.

84 applicants passed to the next selection stage. They were invited to individual interviews that lasted about 20 minutes each with the participation of an HR representative and the intern's expected line manager. The successful applicants have been informed by phone that their internship will commence on August 5.

A large part of the applicants was aiming at an internship in the field of process engineering. Below is the list of all the selected interns and departments they were found suited for:



	Intern	Department
1	Lamia Mammadova	Accounting
2	Rustam Rashidov	
3	Narmin Aghayeva	Budget & Control
4	Anar Abdiyev	Finance
5	Farida Bayramova	IT
6	Rahimakhanum Shirinova	
7	Natavan Mammadova	HSE
8	Gullu Babashli	
9	Nazrin Rzayeva	
10	Elshad Guliyev	IC Engineering
11	Ogtay Khalilov	Piping Engineering
12	Rahib Kamalov	Electrical Engineering
13	Elvin Hajiyev	
14	Elshan Ahmedli	Production Planning
15	Gunay Nasirov	Maintenance Planning
16	Gunay Gulmammadova	Sales
17	Gulzada Mirzamammadova	Legal
18	Mehriban Jabrayilova	Logistics
19	Murad Rahimov	
20	Ismayil Ahmadov	OPS
21	Esmira Jafarova	Process Engineering
22	Ali Aladdinov	Laboratory
23	Jamil Ismayilzada	Customer Support
24	Aysu Darchinova	
25	Bakhtiyar Allahverdiyev	Public Relations
26	Humay Hamidli	QA/QC
27	Yagub Yusubov	
28	Elshad Panahli	Materials Management
29	Rahid Shiraliyev	



# Congratulations to HSE prize winners!

Continuing the corporate HSE culture development tradition, our company has awarded 9 more prizes to SOCAR Polymer employees for the following merits:



April 2019

**1<sup>st</sup> Prize winner**

by Rauf Mustafayev /  
Electrical Supervisor

Nominated for observation  
of open lighting boxes in Gas  
Hazardous Area with spark  
potential



**2<sup>nd</sup> Prize winner**

by Saleh Mammadov /  
PP Operator

Nominated for proper  
response to Isobutane  
leakage



**3<sup>rd</sup> Prize winner**

by Anar Hafizzade /  
HSE Advisor

Nominated for stopping unsafe  
usage of electrical equipment  
in an area with gas leakage

May 2019



**1<sup>st</sup> Prize winner**

by Teymur Sadigov  
/ Rigging & Lifting  
Specialist

Nominated for stopping  
unsafe discharging of  
hydrogen cylinders: without  
PTW and near ignition  
sources



**2<sup>nd</sup> Prize winner**

by Akif Karimov / HDPE  
Mechanical Technician

Nominated for observation  
of a potential collision risk  
during forklift movement  
in the Bagging Area and  
giving proper advice for risk  
mitigation



**3<sup>rd</sup> Prize winner**

by Tural Mammadli /  
Civil, Rigging & Lifting  
Supervisor

Nominated for reporting  
uncovered pits in a pedestrian  
pass way and taking proper  
action to cover them

June 2019



**1<sup>st</sup> Prize winner**

by Ulvi Novruzov / PP  
Reactor Field Operator

Nominated for taking  
proper safety actions upon  
observation of TEAL leakage



**2<sup>nd</sup> Prize winner**

by Sanan Karimov / Junior  
HSE Advisor

Nominated for stopping an  
unsafe lifting operation



**3<sup>rd</sup> Prize winner**

by Firget Feyzili /  
Mechanical Technician

Nominated for valuable advice  
based on a technical research  
regarding protection of fire  
sprinklers during mechanical  
works



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

OPENING NEW FRONTIERS  
IN THE PETROCHEMICAL  
INDUSTRY OF AZERBAIJAN

 **SOCAR**  
**POLYMER**