



Chemist

Free of charge İKİMİB's magazine. May/June 2022 Issue: 68

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Investments in financial management are also needed for growth and profitability

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SECTOR

100 Percent increase in export target in the middle term in the paint industry

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TRAVELLER

The ancient city of Ephesus sheds light on eight thousand years of history

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CHEMISTRY OF THE JOB

Aydın Ağaoğlu: Mathematics and chemistry, the mysterious focus of the secrets of existence!

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THE INVENTORS OF CHEMISTRY

Amazing inventions by Prof. Dr. Yılgör from the field of medicine to textile and from aviation to defence



The message of the president

“IN AN UNYIELDING MANNER...”

Hello again Dear Colleagues;

First of all, I would like to thank you all for the trust you have shown to me and our Board of Directors by re-electing us at the iKMIB ordinary general assembly held on Thursday, April 7, 2022.

We will continue to work with all our strength to produce and export.

We will continue to break records and maintain the permanent first place.

Since 2018, world socio-politics and eco-politics have been going through a very difficult period.

First, the trade wars between the USA and China, the global ‘Corona’ epidemic that we were exposed to and the economic and commercial difficulties that came out as a result.

Only when we said that everything will be alright, this time with the invasion of Ukraine by Russia in 2022, a completely different global economic crisis broke out.

In this whole process, increasing global commodity prices, especially energy, and the resulting shortage of raw materials have brought a great pressure on us, the industrialists and exporters.

On the other hand, we have to deal with

the increasing financial needs in the face of all these problems.

While the extreme volatility in foreign exchange prices melts their working capital, industrialists need serious financial support.

The fact that the dollar/Euro parity is changing in favour of the dollar has started to disrupt the price balance between raw material imports and product exports as exporters.

‘Companies fail not because they make a loss, but because their cash flow balances deteriorate.’

For this reason, cash flow management as a special finance process is gaining more and more importance in this period.

In the face of all these difficulties, ‘Financial Management’ is a subject that needs to be handled separately and specifically for us, the industrialists and exporters.

In this regard, as iKMIB, we will continue to support you, our esteemed exporters.

I wish all of you a prosperous period by expressing that we will endeavour to put one stone after another for our industry and our country, no matter what.

Stay safe and healthy...

Adil PELİSTER
Head of iKMIB



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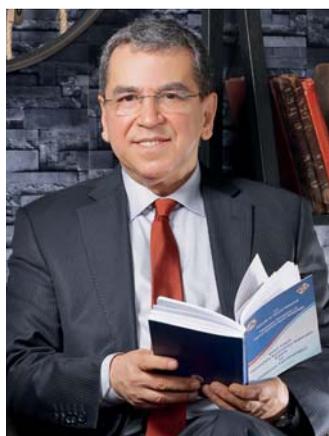
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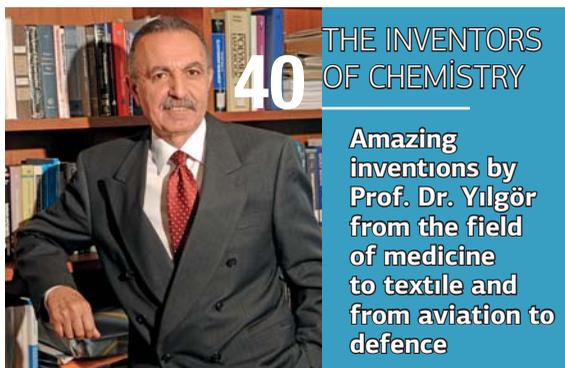
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The Chemical Industry Keep the Leading Position in Exports

The chemical industry has realized foreign sales of 2.8 billion dollars in May and became the leader in exports for three consecutive months. Considering the first five months of the year, the chemical industry has exported a total of 13.6 billion dollars and has kept the leading position in this process.

According to the May data of the Istanbul Chemicals and Products Exporters' Association (İKMİB), the chemical industry continues to maintain its success in exports. Evaluating the export data, İKMİB President Adil Pelister said, "In the chemical industry, we continue to increase our exports constantly and maintain our leadership in this field. With an export of 2.8 billion dollars in May, we became the first industry to export the most for the third time in a row. In the first five months, our total exports exceeded 13.6 billion dollars. I wholeheartedly congratulate all our exporters who brought our industry to the first place and I am proud of it."

Reminding that as İKMİB, they are trying to get rid of the effects of the pandemic and expressing that they gave more weight to activities such as national participation in the fair, procurement and trade delegations this year, Pelister continued his words as follows: "Finally, on 23-24 May 2022 in İstanbul, Pakistan Special We held the Procurement Committee, the Cosmetics & Home Care Ingredients (CHCI) Fair Buyers Committee on May 25 and 26, 2022, and our Buyer Committee program simultaneously with the IDEX fair on May 26-27, 2022. However, we need long-term and low-interest loans and incentives, especially for our SMEs, so that we can continue our exports in the upcoming period. We are living in a period in which global inflation is high, commodity, energy and food prices and raw material prices continue to increase rapidly due to the Russia-Ukraine crisis, and it becomes difficult to supply products. Therefore, we expect the support to increase in order to eliminate these negativities and to achieve or even exceed our targets. As the Turkish chemical industry, we will continue to work with all our strength to increase our contribution to our country's economy."



THE MOST EXPORTED COUNTRY IN MAY HAS BEEN THE SOUTH AFRICA

According to İKMİB data, South Africa became the country with the highest export volume in May with 205 million 839 thousand dollars. While exports to this country increased by 517.3 percent compared to the same period of the previous year, the top five exported product groups were 'mineral fuels, mineral oils and products', 'plastics and their products', 'rubber, rubber goods', 'inorganic chemicals' and 'paint, varnish, ink and preparations'. Other countries that follow South Africa and are in the top ten are Romania, Lebanon, Belgium, Italy, USA, Spain, Egypt, Germany and Iraq.

Analysing the product-based sales in May, exports of mineral fuels, mineral oils and products are the most observed. Mineral fuels, mineral oils and their products, which ranked first on a sectoral basis with 1 billion 20 million 787 thousand dollars, were followed by plastics and products with 795 million 651 thousand dollars and inorganic chemicals with 239 million 301 thousand dollars. Then, 'rubber, rubber goods', 'essential oils, cosmetics and soap', 'paint, varnish, ink and preparations', 'pharmaceutical products', 'organic chemicals', 'various chemicals' and 'fertilizers' product groups were also among the first ten sectors.



Signed for the Chemistry Technology Center

The Chemistry Technology Center, designed by the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB) will be implemented with the support of the İstanbul Development Agency (İSTKA), will start its activities in the Bilisim Vadisi in 2022.

İKMİB, which started the 'Chemistry Technology Center' (KTM) project, being the first in Türkiye with its vision of developing high-tech and value-added domestic products, is preparing to establish a new generation chemistry ecosystem with this centre. KTM, which will act as an advanced R&D centre, will operate in a 4-storey building in Bilisim Vadisi, with test and analysis laboratories, digital library and chemistry in an area of approximately 7 thousand square meters, 1,700 square meters of which is an entrepreneurship and incubation centre prepared with a special infrastructure for entrepreneurs and will serve as a meeting point for the entire start-up ecosystem in related sectors. A total of 209 different tests will be applied at KTM and 100 tests will be accredited. In this context, 39 tests carried out abroad will be carried out with national resources thanks to KTM. If the centre works optimally, it is predicted that a total of 1 million 201 thousand 883 tests will be carried out annually and in this context, it will contribute 12.3 million dollars annually to the current account deficit.

Located right in the heart of 3 important industrial cities that produce with high technology such as İstanbul, Kocaeli and Bursa, KTM is scheduled to start its operations this year in Türkiye technology and innovation hub, Bilisim Vadisi. While another important step was taken by signing a cooperation protocol between Kimya Araştırma Teknoloji ve İnovasyon Merkezi A.Ş. (KATİM) and Bilisim Vadisi, T.R. Minister of Industry and Technology

Mustafa Varank, T.R. Deputy Minister of Trade Özgür Volkan Açar, Governor of Kocaeli Seddar Yavuz, İKMİB Chairman of the Board Adil Pelister, IT Valley General Manager A. Serdar İbrahimcioğlu as well as NGOs and sector representatives took part in the ceremony. Speaking at the ceremony, Minister Varank said, "KTM will fill an important gap in accelerating the test-analysis processes needed by the chemical industry and reducing our country's dependence on foreign sources in this area. This place is designed as a qualified R&D center that will provide comprehensive training and consultancy services to the sector. Therefore, it will make significant contributions to the development of technical and human capacity in the sector."

"TÜRKİYE IS GROWING WITH CHEMISTRY"

İKMİB President Adil Pelister also took the floor at the ceremony and said, "Our main goal is to supply raw materials, semi-finished products and finished products to 27 other sectors along with our own 16 sub-sectors. The phrase "Türkiye is Growing with Chemistry", which we have set as our motto, is not an exaggeration at all. We believe that as we grow the chemical industry and develop its technologies; all our other industries will accelerate the growth trend." Emphasizing that KTM is not only a center to study chemical technologies, but also a project that can develop Türkiye entrepreneurial ecosystem, Bilisim Vadisi General Manager A. Serdar İbrahimcioğlu said that an infrastructure has been established in Türkiye that can do better work.



52 companies represented Türkiye at The Inspired Home Show

The Inspired Home Show, which is among the most important fairs of the sector, was reorganized after 2 years due to the pandemic. 52 companies from Türkiye took part in the fair and had the opportunity to exhibit their products.

The Inspired Home Show, which is considered as one of the most important fairs of the sector for home-kitchen wares and cooking equipment, was held in Chicago, USA between 5 and 7 March 2022. 41 companies participated in the fair, which was held for the 16th time in partnership with the Istanbul Chemicals and Products Exporters' Association (İKMİB) and the Istanbul Ferrous and Non-Ferrous Metals Exporters' Association (İDDMİB), as part of the national participation organization, and 11 companies participated individually.

At The Inspired Home Show 2022, held at McCormick Place Convention Centre, the latest model products were exhibited in three main categories: 'cleaning, storage and protection equipment', 'cooking and entertainment equipment' and 'electrical household appliances'. Professionals from 84 countries and 49 US states visited the fair, where 1016 companies from 40 countries participated. Chicago Consul General Engin Türesin and Chicago Commercial Attaché Uğur Öztürk also visited the trade show where Turkish companies, Turkish products and brands were successfully introduced.

EXPORTS TO THE USA HAVE INCREASED BY 59.15 PERCENT IN PLASTIC HOUSEHOLD AND KITCHEN APPLIANCES

Reminding that the participation in the Inspired Home Show was high and the fair was visited by all important buyers, İKMİB President Adil Pelister said, "We introduced our home and kitchenware products made of plastic, metal, glass, wood, ceramics at this fair. In addition to that, our exporters in the sectors of small electric household appliances, industrial kitchen equipment, gift products and ornaments also took part in the fair. Our country's 169.1 million dollar kitchen and houseware products export to the USA in 2020 has been increased to 275.7 million dollars in 2021. The share of the USA in the total sector exports was 4.57%. The exports of our plastic household and kitchenware industry increased by 30.87 percent in 2021 compared to the previous year, while exports to the USA increased by 59.15 percent and reached 35.03 million dollars. Thus, the share of the USA in the export of plastic household and kitchenware sector was 5.65 percent. In summary, the share of the USA in the plastic household and kitchenware sector is higher than the general household and kitchenware exports. In that, we see a great potential for our industry. We attach great importance to fair participation in terms of increasing our sales to the USA, our target export market. For this reason, as İKMİB, we will continue to support our industry with national participation organizations, trade and procurement committees."



Cosmetics and cleaning industry made debut at Cosmoprof Worldwide Bologna

Participating in the Cosmoprof Worldwide Bologna 2022 fair with the national participation organization of İKMİB, the companies had the opportunity to exhibit their newest products in the cosmetics and cleaning sector and signed important collaborations to increase their exports.

19 exporting companies from Türkiye participated in the Cosmoprof Worldwide Bologna Fair, which was held in Italy between April 28 and May 1. A total of 61 companies represented Türkiye at the fair, where 42 companies opened their stands individually, as well as national participation. Turkish companies, which had the opportunity to cooperate with potential buyers at the fair, had the opportunity to exhibit many products from cosmetics to personal care.

İKMİB Vice President Mehmet İmer Özer, İKMİB Board Members Uğur Adıyaman and Murat Öztürk and TİM Delegate Süleyman Özgür Öztürk also attended the 13th Turkish national participation organization that was arranged by the Istanbul Chemicals and Products Exporters' Association (İKMİB).

COSMETICS INDUSTRY GROW BY 3% IN 2021

Commenting on the fair, İKMİB President Adil Pelister shared the following information, "Cosmoprof Worldwide Bologna, one of the most important fairs in the world for the cosmetics, personal care and cleaning sector, is held in Italy every year. The national participation organization of the fair, which has brought together industry professionals from all over the world for more than 50 years, was held by our association for the 13th time this year. As İKMİB, we carry out many activities such as national participation

organizations, sectoral trade and procurement committees, UR-GE projects and competitions in order to contribute to the export and development of our sectors. In addition, the exports of our cosmetics sector, which has an important place among the chemical sub-sectors in terms of value-added production, amounted to 1.4 billion dollars in 2021. It grew by 3% compared to 2020. In 2021, we exported mostly 'soaps and surfactant organic substances', 'shaving preparations and body deodorants' and 'hair preparations'. Evaluated in terms of countries, Iraq ranks first, followed by the USA, Russia, Iran and the Netherlands as the top five. Last year, exports of cosmetics and cleaning industry to Italy increased by 26.48 percent and amounted to 20.9 million dollars.

On the other hand, we continue our efforts to establish our Chemical Technology Centre, which will be the first in Türkiye, where our companies will be able to produce the international certificates and test reports they need faster and at more affordable prices, especially for their exports to Western countries. One of the sectors that will be served at this centre in the first place will be cosmetics. As İKMİB, we continue to work for the needs of our sub-sectors. In this context, we aim to complete the work by the end of 2022 and make our Chemical Technology Center ready for operation."



Turkish products became the focus of Latin Americans at Expocomer

The products of Turkish companies became the focus of attention at the Expocomer 2022 General Trade Fair, where personal care, cosmetics and kitchenware were showcased in Latin America. After the event was organized by İKMiB, the door to new markets was opened for export.

Expocomer 2022 General Trade Fair, which was suspended for two years due to the pandemic, reopened its doors in Panama City, Panama between March 23-26. Products for the cosmetics, personal care, cleaning, household and kitchenware sectors were introduced at the fair, where 18 companies participated with the Turkish national participation organization organized by the Istanbul Chemicals and Products Exporters' Association (İKMiB).

While the Turkish Pavilion stands out as the largest country pavilion of the fair with an area of 360 square meters, the opening here was made by T.C. Panama Ambassador Gülhan Ulutekin and Panama Chamber of Commerce President Jose Ramon Icaza Clement. Turkish products attracted great attention at the fair, which was visited mainly by professional buyers from Latin American countries.

ONE OF THE MOST IMPORTANT FAIRS OF LATIN AMERICA

Pointing out that the fair contains great opportunities for

the country's exports, İKMiB President Adil Pelister said, "Expocomer, one of the most important fairs of Latin America, hosts many sectors from consumer electronics to pharmaceuticals, from medical devices to household goods, from furniture to clothing, from jewelry to sports equipment, from foodstuffs to technology. We organized a national participation organization for the third time. Türkiye was the largest country pavilion at the fair held in Panama with approximately 500 participants. On the other hand, if we look at the export data, our exports to Panama from Latin American countries amounted to 305 million dollars in 2021, while the exports of our chemical industry amounted to 29 million dollars with a share of 9.5 percent. Our chemical industry exports to Latin American countries including Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Cuba, Haiti, Dominican, Colombia, Venezuela, Ecuador, Peru, Brazil, Chile, Bolivia, Paraguay, Uruguay and Argentina last year, it took a 13.4 percent share and reached 724 million dollars. We will continue our support to increase the exports of our sector this year, as we did last year."



Chemical industry plays a strategic role in sustainable development

Evaluating Türkiye first quarter growth data of 2022 by TÜİK, İKMİB President Adil Pelister pointed out the success and said, "As the chemical industry, we undertake a strategic task in the sustainable development of our country."

Evaluating the growth data of the Turkish economy in the first quarter of 2022 announced by the Turkish Statistical Institute (TÜİK), İstanbul Chemicals and Products Exporters' Association (İKMİB) President Adil Pelister underlined that the chemical industry also has an important share in the development. Pelister made the following comments in his evaluation:

"The Turkish economy, which grew by 11 percent in 2021, grew by 7.3 percent in the first quarter of 2022, while exports of goods and services increased by 16.8 percent. While this growth in the first quarter is significant and pleasing, we believe that incentives to support exports and investments should also be increased in order for it to be sustainable. In the first quarter, the contribution of net exports to growth was 3.5 points. The exports of our chemical industry, on the other hand, grew by 41.71 percent in the first quarter compared to the same period of the previous year and reached 7.52 billion dollars. We are working to maintain this high performance in the second

quarter as well. As a matter of fact, our industry became the leader in exports in the first four months of March and April.

On the other hand, especially due to the Russia-Ukraine Crisis, there is an increase in commodity, energy, food prices and accordingly inflation. The raw material prices used by our chemical industry in production also continue to be high. In order to be affected by these negative developments in the least possible way, we attach importance to high value-added domestic production. As İKMİB, we continue to work in this direction. In this context, we published our Investment Priority Products in the Turkish Chemical Industry report last year. However, we will make a significant gain with our Chemistry Technology Centre (KTM), which we plan to put into operation at the end of 2022. As the chemical industry, we undertake a strategic task in the sustainable development of our country. We will continue to produce and work with this responsibility."

Turkish Plastics



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INVESTMENTS IN FINANCIAL MANAGEMENT ARE ALSO NEEDED FOR GROWTH AND PROFITABILITY

Firms have in the past tried to increase their production, technology and export for growth and profitability, adding a new area to investment items that could range from the pandemic — which has been on the world's agenda — to inflationary pressures, from supply trouble to a wartime environment. Experts also stress the need to invest in financial management to keep firms growing and profitable, minimizing possible financial risks.

The world has been going through a difficult period that is deepening in financial sense and the consequence of that is addressing the challenges of global sales, production, and inflation. While this difficult period indicated that business life globally will face an even tougher time when 2020 was declared a pandemic because of COVID-19, all countries were seeking solutions in order to minimize potential risks. Developments in the global supply chain combined with the pandemic, such as unexpected shortages and chip crises, have discouraged positive expectations. With the pandemic's impact diminishing after two years, hopes have flourished in global trade, with US inflation data exceeding the expected level, raising the question of what is happening in global trade as several central banks push their interest rate-raising policies back on the agenda. The subsequent resurgence of the Russia-Ukraine crisis is causing a revision of all expectations.



With firms unable to see clearly in a tidal environment, they have trouble building a sustainable structure. Manufacturing, exporting, employment and obtaining predictable analyses are vital for firms, underlining how important financial management is at this point. The process, which has been gone through, making accurate investments, management of procurement processes, monitoring and analysis of fluctuations in the financial markets, require firms to exercise much more caution in all areas of

global economic activity. The potential for fluctuation in every sphere suggests that businesses need to survive, successfully handle business processes, and financial management discipline with experts and professional teams. That is to say, it might not be enough just to produce and export and to create jobs in order to sustain firms. Firms now need to closely monitor many variables — from inflation to war, from global recession to exchange rates and logistics — and arrange the financial structure



More than 40 per cent of European exporters expect increased payment maturities after the Ukrainian occupation, and more than half predict an increase in the risk of non-payment within the next 6 to 12 months. All this suggests that financial management discipline is likely to exacerbate further in the future.

5 FINANCIALLY SIGNIFICANT RISKS

The risks to be seen in terms of financial management are listed by experts as follows:

Market Risk: That shows market price fluctuation of products and services that the business buys and sells. These can be addressed under the topics 'Commodity Price Risk', 'Product Price Risk', 'Interest Risk', 'Rate Risk', 'Wage Risk' and 'Stock Price Risk'.

Credit Risk: That means the process in which business is unable to collect or receive commercial credits on time.

Operational Risk: Financial losses due to internal failures due to insufficient management of the business. For example, sending bad quality goods and then receiving them back, or processing errors...

Liquidity Risk: Inability of business to manage cash flow resulting in failure to fulfill commitments. It's like paying debts early when you're collecting late payments...

Unavoidable Risks: Natural disasters, war, legislative changes, product discontinuation, strategic changes in the sector, interstate tariffs and customs regulations and etc.

accordingly...In this case, it is inevitable that firms will not only invest money in plants, machines, employment, technology, but they need to also invest in financial management discipline to support them so as to ensure their growth and sustainability.

ANALYSIS AND REPORTING SHOULD BE DONE MORE OFTEN

As a part of the processes, many global institutions have been evaluating and preparing reports, while at the same time trying to guide firms through possible trouble in business processes. At a time like this, the discipline of financial management suggests that any process necessary for a company can be analysed and reported frequently in much shorter periods, taking into account variables. By studying scientific approaches with competent human resources in this area to ensure financial management discipline, firms will need to clearly define their goals and address, and the risks in full detail. Effective financial management will help firms better understand their needs in the business process, and forecasting the risk of business bankruptcy will be reduced so that long-term growth and profitability are supported. For example, it will require handling the analyses globally addressing from logistics to stock management,



FINANCIAL LITERACY EDUCATION TO RAISE PUBLIC AWARENESS

FODER President Attila Köksal highlighted the global financial risks and underlined the importance of building financial awareness and accumulation to prevent them. In this sense, he notes, it is not only necessary for financial institutions but also individuals and companies to have real financial literacy, and he stresses that a great deal of responsibility falls for everyone. "Financial literacy education will increase the total awareness of society and ensure that future generations are prepared for many global risks, such as a crisis and pandemic," he says, recalling the introduction of financial literacy in many countries.

from digital investment to employment, from any source inflows to rules and from efficiency to foreign markets.

Experts also point out that possible risks and their costs should be calculated and managed properly, and that there is a possibility that those risks will be repeated. Noting that the financial balance sheet, profits and losses, costs will not be difficult to draw up and read in the spreadsheet, experts also see beyond a simple understanding of all this data,

but that it is important to interpret it properly and conduct rational analyses of the future, followed by establishing accurate financial strategies on behalf of the firm.

Experts also stand out there are potential risks for companies in managing financial institutions, noting that the projected results could not be achieved if investments are not made properly and in particular targets. They also emphasize the importance of companies analysing well short-term developments and reacting accordingly, acting on a realistic model of behaviour when managing financial assets. They also stress that market volatility should be followed very well by monetary and fiscal policies that have been varying and that have impacts on markets.

'BEHAVIORAL ECONOMICS PROJECT' FOR CORRECT FINANCIAL DECISIONS

The Financial Literacy and Access Association (FODER), to help make the right decisions in financial behavior and promote the development of global economic prosperity, will lead the 'Behavioral Economy Project' (Common Cents Lab- CCL) within Duke University, led by Professor Dan Ariely, a leading expert in behavioral economics. In cooperation with Türkiye, Mexico and China will also be monitored in a joint process that demonstrates the importance of financial governance. The 'Behavioral Economy Project' includes three years of activity on short- and long-term savings in the three countries, on the right management of debt and receivables, reduction of costs and increased profits.

The goal is to achieve meaningful and measurable results for behavior and to introduce a change in behavior. The project also aims to identify the challenges to positive financial behavior, and will introduce behavioral interventions that require individuals to make the right financial decisions. Using scientific methods, behavioral interventions will be used to raise awareness of the use of credit by individuals and institutions, and to make budgets that are accurate.

POLLS POINT TO THE IMPORTANCE OF FINANCIAL MANAGEMENT

Allianz Trade released the results of the Global Survey 2022. Three trends are mentioned in the general results of two surveys of about 3,000 companies covering the pulse of firms in the United States, China, the United Kingdom, France, Italy and Ger-



Efficient financial management will enable firms to see more clearly their needs in the business processes, from which predictions can help firms reduce bankruptcy risks and foster long-term growth and profitability.

many, including both before and after the invasion of Ukraine. These trends indicate that the number of companies preparing for loss of turnover in future projection will be raised at the risk of collections of creditors. The other trend is highlighting critical state subsidies.

Given the details of the survey, optimism has been raised by the global revival of business activity in 2021, but then cautions have become prominent that 2022 could be much tougher for exporters. According to the results of the first pre-war phase of the survey, only 6 per cent of companies were worried about turnover in 2022. Second polls showed that it increased to 22% after the war. Amid the rising concerns are the chemical, energy, utilities and machinery and equipment sectors. The companies show a resilient commitment to export targets, and plan to diversify their export markets and increase their investment in new markets as a

result of the continuing slowdown in demand. At the same time, the protracted nature of the war has to be taken into account, as well as the risks of turning the slowdown into a demand shock and creating a serious recession for global trade.

Meanwhile, the survey found that companies' major concerns include high energy prices, geopolitical tensions, rising shipping bottlenecks, sanctions against Russia and inward shortages. Nearly half of the surveyed companies believe that protection against increasing financing costs and added pressure from currency risks is a legacy of the COVID-19 era, financing provided by the state. More than 40 percent of European exporters expect increased payment maturities after the Ukrainian occupation, and more than half predict an increase in the risk of non-payment within the next six to 12 months. All these suggest that financial management discipline is likely to exacerbate further in the future.



**KPMG Türkiye Financial Situations Detection Advisory
Co-Owner, Oil & Gas Industry Leader**



**Doğa Çivikgedey - KPMG Senior Director of Turkish
Governance, Risk and Security Services**

Effective cash flow management requires a serious financial management discipline!

“As we have been in the period of inflation, the tightening policies of the FED, the fragile situation in developing countries, China’s slowdown and general fiscal tightening approaches, and the situation of war,” he said, “have brought more importance to financial management than ever before.”

The COVID-19 pandemic has brought with it huge economic woes on a global scale, felt throughout all areas of business since March 2020. By the end of 2021, although the pandemic had worn off in much of the world, the pace of economic activity was below expectations, especially in the last quarter of 2021 as problems with the global supply chain continued, the higher-than-expected US inflation data reached higher-than-expected levels, interest rate-raising policies of central banks and fluctuations in financial markets. More optimistic projections for 2022 were made, with Russia invading Ukraine in February bringing in new narrow straits in the business sector. Inflation, the tightening policies of the Fed, the fragile situation in developing countries, China’s slowdown and overall approach to financial tightening have become more important than ever before to financial management.

According to figures provided by the Turkish Exporters Assembly at the end of 2021, in the officially recorded

amount of \$225.4 billion, our country’s total exports have a 11.2 per cent share of the chemical and industrial products at \$25.3 billion. We should not underestimate the fact that our players in the chemical industry need a serious financial management discipline that will ensure effective cash flow management, given their share of our country’s exports and the dependency on foreign money for crude supplies. We can say that this discipline is one of the healthiest ways to achieve, first and foremost, with the cash flow to manage after processes of effective budget planning, reporting, and control.

OPTIMUM PATHS MUST BE SELECTED FOR PRODUCTIVITY PURPOSES

In the planning step — the first stage of a financial management discipline — it is crucial for companies to clearly define their goals. Comparing numerical and non-numeric objectives with company resources in comparison will reveal the foreign resources the company needs, which is an essential input to the company’s financial

planning process. If there is a need for foreign resources for inventory, fixed assets, digital investment, and worker employment, optimal ways of making use of these foreign resources are also required. For example, it is important to note that providing the conditions for cheap financing options from the country's banks for import of equipment may create significant financial advantages over the short term, although this may be seen as a cost.

It is vital to ensure the accuracy of closed-period financial statements that are the basis of the budget at the budgeting stage, and to make decisions that will be made to ensure that the assumptions used in budget studies are accepted assumptions in local and international research data. The issue of financial statements not only being considered tax liability, accurate account segmentation, preparation of UFRS financial statements in order to communicate with foreign organizations through financial statements should also top our agenda. Another important issue in the budget stage is that execution responsibility should not be entirely placed in financial affairs sections; inflows from the business units into the financial affairs departments; and final budgets should be prepared by the financial affairs department. The presence of all business units in the budget process — sales, marketing, human resources, manufacturing planning, etc. — and the sharing of consistent forecasts for the planned account periods are crucial to a healthy budget process. A second area in the budget process can be seen as a requirement for companies to evaluate their current resources, as well as potential sources. A study by the The Central Bank of the Republic of Türkiye in July 2021 found that a third of the companies that have the potential to become exporters in our country prefer not to export.

By all means, there is a rule set under this preference, but export should be an important barrier, with macroeconomic goals such as economic growth, development and current surplus, as well as a high foreign monetary dependence on raw materials and increased foreign money weight in the income composition of players in the goods industry. The planned budget also includes rent charges, product supply costs, debt and credit payments, employee expenses, taxes, stock depreciation, insurance, and routine expenses, with the assumptions of annual changes and subsequent periods. Apart from the annual budget, a brief mention of the investment budget will be that companies will need to analyze and reduce uncertainty in their investment decisions as much as possible, to highlight the effective planning of the needed external resources for investment.

Activating investment, especially for investments made using outside sources, is followed by a combination of the revenue to the composition and the impact on the expense composition during which the outside source is repaid, and decisions have to be made accordingly.

MONTHLY ANALYSIS IS CRUCIAL

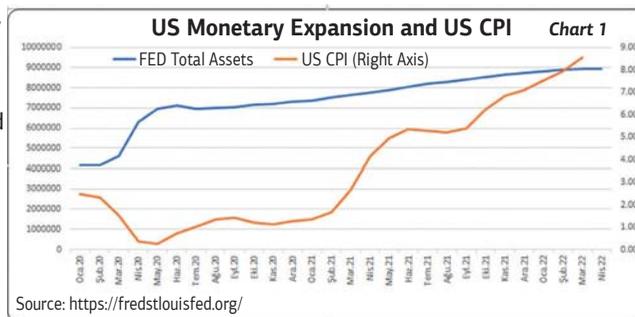
Monthly tracking of planned and realized budget figures after a budget is made requires an investigation into the underlying causes of exceeding or lowering monthly defined and approved limits and steps must be performed by an authorized administration. This control phase allows for early prevention of deviations on specific items, minimizing the negative impact of deviations over a whole year, and may establish methods for compensating for related deviations. Monthly analysis is crucial, since analysis of the first 4 or 6 months between these methods, including the most widely used 4+8 or 6+6 budget revisions, will form the basis for new decisions. Monthly tracking of planned and realized budget figures after a budget is made requires an investigation into the underlying causes of exceeding or lowering monthly defined and approved limits and steps must be performed by an authorized administration. This control phase allows for early prevention of deviations on specific items, minimizing the negative impact of deviations over a whole year, and may establish methods for compensating for related deviations. Monthly analysis is crucial, since analysis of the first 4 or 6 months between these methods, including the most widely used 4+8 or 6+6 budget revisions, will form the basis for new decisions.

Once we have carried out the budget planning, reporting and control steps efficiently, we can all be more comfortable managing cash, probably the most challenging issue in the area of financial management. Cash flow which identifies the cash flow into and out of the company's coffers for a given period may be disrupted by payments and other factors such as balance of collection, and other disruption of interest. As a result of the imbalance, sustained growth and new investment could be difficult, as companies cannot reach the expected level of cash. Therefore, depending on the complexity of the company's operations, budget figures can be exercised on a monthly basis, as well as weekly, perhaps even daily, tracking and control of the cash flow. As Businessman Utter Garich notes, trade can actually be thought of as turning three balls: Sales and profit, plastic ball, cash flow crystal ball through glass. Even if the rubber balls hit the ground, we can get back up and hold it, but when the crystal ball falls down, it breaks and the game is over...

Firms that invest in financial management will be lucrative in the long run

“While Real sector companies are in the process of advancing international levels in quality and internal control, it is also at the development stage in the area of effective financial management and integrated risk management across the enterprise. Investments made by firms in these areas would reduce bankruptcy risks and have positive effects on long-term growth and profitability.”

Many industries have been affected negatively by the 2020 COVID-19 pandemic. In this process, it sought to reduce the negative effects of the pandemic by offering direct and indirect public support in several countries, including Türkiye. Apart from employment on a global scale, the key support has been monetary expansion. The most visible negative effect of the monetary expansion was on global inflation, as seen in Chart 1. Consumer inflation in the United States was up 8 per cent, while in Türkiye it was close to 70 per cent. Although the US Federal Reserve (Fed) has started interest rate hikes and sent messages of monetary tightening, the inflation problem appears highly unlikely to be solved in all countries in the short term. Because inflation has been reduced to a single digit in many countries in the past, the significance and negative effects of the inflation problem seem largely forgotten. Inflation is expected to drop rapidly in the years to come, following the impact of bases in both the United States and Türkiye. However, inflation will not be a rapid reversal without a continuous function process and effective measures.



Assoc. Dr. Atilla Çifter,
Altınbaş University Professor

“IT’S NOT THE NOMINAL DATA THAT SHOULD BE CONSIDERED, IT’S REAL INCOME AND PROFITABILITY!”

During the Pandemic, the main reason for the inflationary process to supply is the rise in energy prices and disruptions in the global supply chain. We see this in relation to the differences in producer prices (PPIs) and consumer prices (CPIs). The CPI has been very high in many countries, including Türkiye, and the deficit is still very high. In Türkiye, except for the PPI gap, the exchange rate has an effect on inflation (Chart 2). The bilateral spiral between inflation and the exchange rate makes Türkiye more fragile than other developing countries. While the inflationary process boosts company profits in the short term, it adversely affects the sale and profitability of firms due to households dropping their disposable income levels over the long term.

It is not nominal data that needs attention; it is real income and real profitability. Therefore, at the beginning of the inflationary period, it would be wrong for companies to base their first year sales and profitability growth on budget. Real sector firms

should look at past inflationary periods relative to their sector and consider the risks of such contractions in budget projections. At the same time, an interest rate hike and monetary tightening in the developing countries will, in the first place, help lower inflation — but negatively affect the level of global demand. This could have a negative impact on sales not only at home, but also at export companies.

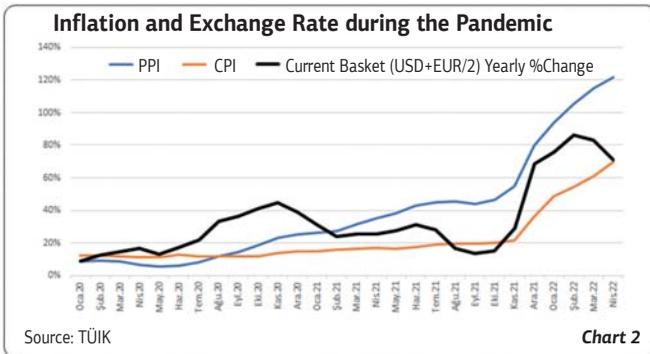


Chart 2

Real sector companies need protection against currency risk (hedge) for a number of reasons, including import dependency, export revenue, parity risk. With growing macroeconomic and financial data uncertainties following the pandemic, the need for better risk management in financial management is expected. The use of financial risk management tools in real sector firms in Türkiye is still inadequate compared to other similar countries. As of March 2022, foreign currency futures were \$8.3 billion, with a monthly transaction volume of Graph 3 set for 2013-2022. In Türkiye, firms are trying to lower the risk of currency during periods of financial turbulence, which can offer firms financial protection at a higher cost.

THE NEED FOR FINANCIAL RISK MANAGEMENT IN INFLATIONARY PROCESSES IS GROWING

Except for the risk of currency, firms also have risk of paying for their products, and risk management in Türkiye is in development. There are different protection methods for the product and payment, and real sector firms have to allocate budgets for the cost of insurance based on the severity of the risk, the likelihood of loss, and the frequency of liability, and use proper credit management tools. Credit management must have a credit rating model that includes a credit-to-collection policy and credit risk management tools that are framed for the account. During periods of steady economic growth, while such needs for insurance and credit management are more limited, in inflationary processes

the need for such financial risk management is increasing.

As a result of the The Central Bank of the Republic of Türkiye cutting its policy rate by 500 basis points from November 2021, and the Turkish CPI reaching 70 per cent, Türkiye’s negative real interest rate came into being. This has led companies to underfund financing needs at a lower cost, but in the current macroeconomic dynamics in the longer term, it cannot be expected to do so. Additionally, the main challenges facing businesses during inflationary periods are the increased capital requirements by the inflation differential. This will push real sector companies to seek low-cost and long-term financing. As a longer-term way of funding from banks to reduce their financing costs, investment credits - leasing could be the first accurate financing model. Post-pandemic companies are expected to see their long-term bond and public offerings reduced.

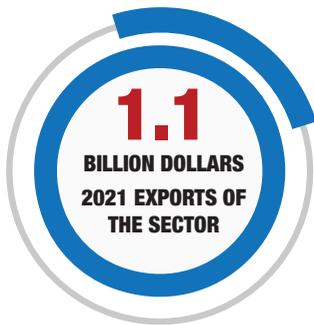
Türkiye share of the global international direct investment (FDI) market is 0.8%, and its position is extremely low. This rate has generally declined since 2009. The possibility of Turkish companies to attract international direct investment through reunification can be seen as a means of financing. Such a funding model will help finance at the lowest cost while contributing to the growth of new markets and local businesses.

Real sector companies are making international advances in quality and internal control while improving effective financial management and enterprise-wide integrated risk management. Investments made by firms in these areas would reduce bankruptcy risks and have positive effects on long-term growth and profitability.



Chart 3

100 PERCENT INCREASE IN EXPORT TARGET IN THE MIDDLE TERM IN THE PAINT INDUSTRY



THE PAINT INDUSTRY, WHICH MEETS THE EXPECTATIONS IN EVERY FIELD WITH THE IMPORTANCE IT ATTACHES TO R&D AND INNOVATION, REACHES 1.1 BILLION DOLLARS IN EXPORTS WITH AN INCREASE OF OVER 27 PERCENT IN 2021, AND AIMS TO GROW BY 100 PERCENT IN THIS AREA IN THE MEDIUM TERM.

The paint industry is of interest to many industries with a wide range of uses, from construction to automotive, from furniture to white goods. Even when operating in such a comprehensive area, the paint industry constantly renews itself with R&D and innovation and carries out studies to meet the expectations of the relevant business areas. Drawing a rapid growth projection in the medium term due to its successful works, the paint industry envisages increasing its exports by 100 percent in a 5-year period to over two billion dollars.

Making evaluations about the sector, M. Akın Akçalı, President of the Paint Manufacturers Association (BOSAD), states that they are an important player in production and shares the following information: reaching a total volume of over 3 billion dollars. When we look at the employment data of our sector; We provide direct employment to approximately 20 thousand people. In this context, we can say that we offer employment opportunities to 300 thousand people in total, including direct and indirect employment. In addition, we anticipate that our production and export volume will grow in the coming years, and we think that our employment will increase accordingly.”

Stating that the Turkish paint industry is an important center in production in a very wide geography, especially in the Middle East, Near East, North Africa, Eastern Europe and the Caucasus, with both its production capacity and product quality, Akçalı pointed out that they have a 2 percent share from the 132 billion Euro market globally. Stating that they export to 168 countries in total, according to the data of the Istanbul Chemicals and Chemical Products Exporters' Association, Akçalı reminds that their exports, which were 871 million dollars in 2020, exceeded 1.1 billion dollars in 2021 with an increase of more than 27 percent.

Akçalı said, “We have a target

to double our exports in the next 5 years. I believe we will achieve this goal. Because our Turkish paint industry continues its R&D and UR-GE studies without slowing down without sacrificing product quality. In addition, our industry continues to work on opening up to new markets and increasing our sectoral exports by participating in projects such as the Project of Supporting the Development of International Competitiveness, which İKMİB has carried out in the past.”

Emphasizing that the interest in R&D activities has increased in a competitive environment with globalization, Akçalı says that they will take innovative steps in foreign markets and develop the Turkish paint industry in line with their global growth strategies, thanks to the investments made in innovation through research and development studies.

ENVIRONMENTAL SENSITIVITY IS IN THE FOREWORD

Pointing out that the awareness of consumers has increased recently due to the increase in awareness of sustainability and environmental issues, Akçalı said, “Regulations regarding human health and environment are getting harder day by day and new product formulations are being prepared within the framework of their requirements. Parallel to this situation, our industry, which also carries out R&D studies on developing environmentally friendly products with high added value, continues its important investments for new product formulas. Our industrialists, who want to maintain their place in the international platform in the long term, demonstrate their sensitivity in every field by harmonizing their processes, production and investments with new regulations.

On the other hand, pointing out that the main problem of their sector, which is the high rate of imported raw material input and production based on raw material imports, affects the sector negatively, Akçalı said, “In order to prevent this, new supports should be provided, especially for the production of value-added domestic substitute raw materials, in addition to export incentives. . In addition, the continuous increase in raw material and logistics prices causes our costs to increase. We believe that these situations can be prevented by making strategic investments in petrochemical facilities for the main raw materials needed by our industry under the leadership of our state. Strategic investments of this kind will develop and accelerate our country's economy.

Betek Boya strengthens its brand with Nippon Paint



Nippon Paint-Betek Boya Brand Manager Onur Engindeniz

Betek Boya, one of the important players in the paint industry, became a global player by joining Japan-based Nippon Paint, one of the world's largest paint manufacturers, in 2019 with its successful performance after starting its operations in 1988. The company, which carries out its activities as Nippon Paint-Betek, includes Filli Boya, Fawori, Tempo paint brands as well as Dalmaçyalı brand in thermal insulation. Nippon Paint-Betek, which meets the expectations of consumers in six categories: healthy paints, interior, exterior, special-effect, functional, wood and metal paints, is one of the important players in the paint industry with nearly 1.300 employees and more than 5 thousand sales points. Nippon Paint-Betek Boya Brand Manager Onur Engindeniz gives information about their work and says that they have developed environmentally friendly products with 4 different brands. "Paint is an inseparable and important part of decoration and renovation... Colors can be very effective on people's emotions as well as reflecting their aesthetic perceptions. However, it is very important for the paint to be functional and of good quality," says Engindeniz, and underlines that they attach great importance to R&D and innovation at this point.

Engindeniz explains some of his innovative products within the scope of R&D as follows: "With our Filli Boya brand, we produced Momento Silan Cleanix and Momento Max Cleanix paints licensed by the Ministry of Health. This is our product; it offers a healthy environment as it provides content that prevents the formation of bacteria, mold and fungus. Our Fawori Silicone Silk Antibacterial product, on the other hand, stands out as paint with high coverage, wipeable and safe to use against bacteria formation. On the other hand, our interior paint, Sketchy, which turns walls into blackboards and projection screens, turns the wall on which it is applied into a whiteboard."

DYO, which has been in the paint industry for 69 years with the proposition of 'Adding value, protection and beautification', is advancing towards sustainable targets with the awareness of its responsibilities towards society and the environment. DYO, which has reached thousands of sales points and created an ecosystem in the paint industry with its approximately 1.000 employees, nearly 600 distributors and dealers, strengthens its presence in the country and abroad by taking into account the consumer dynamics. While DYO exports its products to European and African markets with its business partners abroad, exports to more than 50 countries, it also aims to increase its foreign sales with LEED, EPD, Eco-Label and low VOC products that attach importance to human and environmental health. In this context, DYO, which completed 40 projects in 2021 at the two R&D centers located in Çiğli and Dilovası factories, carries out 6 TÜBİTAK projects.

Providing information about his works, General Manager Mehmet Mutlu Uysal said, "We offer paint and insulation solutions for the interior and exterior protection and beautification of the houses we live in. We produce protective and colouring products to make the vehicles look like the first day they were purchased. We offer products to both the sector and consumers with our colouring products so that wooden products and furniture are long-lasting and adapt to the decoration of living spaces. We produce protective paints for the white goods industry to ensure the longevity of the goods and technological solutions to meet the needs of consumers. We manufacture protective products for the maritime industry so that ships and boats are not affected by harsh conditions. Again, we offer protection and colouring solutions to structures such as radiator panels and elevators that we use daily in our homes and workplaces.



DYO General Manager Mehmet Mutlu Uysal

DYO's goal: add value, protect and beauty...

Jotun Boya, which started its activities in Türkiye in 1986, has been growing continuously until today, and produces in the marine, industrial, powder and decorative paint segments. Constantly increasing its market share in every field it is in, Jotun Boya is among the pioneers of its sector globally. Employing 775 people in its two production facilities in Türkiye, Jotun Boya makes a name for itself both locally and among the countries in the region with its strong dealer network.

Jotun Boya, which is a Norwegian brand and produces in 40 countries together with Türkiye, and operates in 100 countries, is restructuring its business processes globally by dividing the world into 7 regions in 2013. After this date, the company, whose responsibility for Eastern Europe and Central Asia is in Jotun Türkiye, exports to more than 30 countries in its region such as Romania, Bulgaria, Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan, Georgia, Ukraine, Kyrgyzstan and Belarus. Jotun Boya, which aims to grow organically in every market it is in, works to repeat the success it has achieved in Türkiye in every country it is responsible for.

Şükrü Ergün, Jotun Vice President for Eastern Europe and Central Asia Region, draws attention to the fact that they distinguish themselves from their competitors with their environmentally friendly, high quality products and the colours they offer. Stating that there are 10 R&D laboratories all over the world and that they get great inspiration from these centres, Ergün said, "We have an R&D centre in Türkiye, consisting of a total of 30 people, serving the Eastern Europe and Central Asia region for which we are responsible. We develop sustainable products through our R&D studies, and we consider continuity as a long-term competitive advantage. Offering products that will differentiate Jotun in the market is the backbone of our strategy. Our R&D team, working for all segments, develops high-performance products in cooperation with both global and other regional R&D companies.

Jotun Boya's East Europe and Central Asia Center is in Türkiye



Jotun Vice President for Eastern Europe and Central Asia Region Şükrü Ergün



Kansai Altan Vehicle Paints Europe and Kansai Altan Auto Refinishes Export Director Barkın Gürdal

Kansai Altan Boya, established a company in Germany, will lead to the competition

Kemipol A.S. Kansai Altan Boya, which was established 40 years ago and continues its production today in partnership with Japan-based Kansai Paint, is one of the indispensable brands of the sector with its more than a thousand employees, 90 thousand tons of paint and 20 thousand tons of polymer production capacity. Kansai Altan Boya, which produces original paints, general industrial paints, protective coatings and auto repair paints, draws attention with its exports exceeding 10 million dollars.

Emphasizing that they have made a strategic growth decision in their activities aimed at automotive main industry and sub-industry customers in Europe, Kansai Altan Vehicle Paints Europe and Kansai Altan Auto Refinishes Export Director Barkın Gürdal said, "In this context, as of the beginning of 2022 in the German state of North Rhine-Westphalia, ' We established our company 'Kansai Altan Transportation Coatings Europe GmbH (KATE). With this restructuring, our company has come to a more competitive and strong position in the paint market for commercial vehicle and automotive supplier industry manufacturers in Europe." Expressing that they have the advantage of carrying out the paint production processes together in their facilities in İzmir, Gürdal said, "We produce 80 percent of the polymers, which are the most basic inputs of our products, in the same facility. In addition, our company is the first and only manufacturer in Türkiye of cataphoresis primer (CED - Cathodic Electro Deposition) technology, which is widely used in the automotive main industry, automotive metal sub-industry and general industry sectors. We believe that we have made significant contributions to the development of the sector in our country with our large-scale investments in R&D activities".



KCC Boya General Manager Aydın Kayı, Ph.D

KCC Boya exports 40 percent of its production

KCC Boya, the largest paint company in South Korea, started production in Türkiye two years after its establishment in 2006 and stands out with its OEM, auto repair, marine, powder, coil, general industrial paints and epoxy floor coatings products. KCC Boya, the main supplier of Hyundai in S. Korea, also meets the demands of this company in Türkiye. In addition, KCC Boya, which has an important place in all segments with its share in the domestic market, produces 20 thousand tons per year by providing 120 employments, and it succeeds in exporting nearly 40 percent of it.

KCC Boya General Manager Aydın Kayı, Ph.D said, "Export is an area that we especially want to grow. We export to neighboring countries, Turkic Republics and some African countries. We are growing by giving distributorships to related countries abroad. We aim to export to more European countries from now on," he says, adding that they want to increase their contribution to the country's economy in this direction.

Expressing that they have become a global brand especially in paint and silicone, and that they will become a globally recognized brand with their environmentally friendly product group, Kayı states that they are working to become the world leader in their fields. Noting that R&D and innovation are inevitable for this, Kayı said, "KCC Boya has an institute completely devoted to R&D in S. Korea. We also have an R&D department in our factory in Türkiye, where we develop products that meet the demands of domestic and foreign markets.

While Polisan Holding's activities in the field of paint started in 1985, the company established a 50 percent partnership with Kansai Paint, one of the top 10 paint manufacturers in the world, in 2016, and changed its name to Polisan Kansai Boya Sanayi ve Ticaret A.Ş. registered as. The company, which commissioned the new paint factory, which operates with full automation and was established as Türkiye first USGBC LEED Gold Certified and Industry 4.0-based, in 2019, has an annual capacity of 180 thousand tons in a single shift and 540 thousand tons in three shifts. A. Cemal Drahor, General Manager of Polisan Kansai Boya Sanayi, who stated that they want to grow both in volume and income in domestic and foreign markets, said that they exported to many countries including Austria, Bulgaria, Egypt, France, Georgia, Russia, Israel and Romania. draws attention to what they do. Reminding that they have increased the number of their stores abroad to 127 within the scope of the 'concept merchandising' structure they have built under the name of Polisan Shop, Drahor said, "Our products consist of construction, industrial, marine, glue, furniture and insulation systems groups. As Polisan Kansai Boya, we introduced the concept of 'Home Cosmetics' to the world by using the concept of 'Home Cosmetics'. With the approach of "We produce not only paints, we produce home cosmetics", we emphasize that paint adds aesthetics to spaces as well as its functional benefits. In 2021, we have achieved a significant growth in the acrylic water-based paints, oil paints and spray paints group, as well as artistic paints."

Emphasizing the importance of the R&D center as Polisan Kansai, Drahor states that they carry out studies with a product-life cycle focus. Drahor emphasizes that they have obtained TSE certificate for 16 new products in 2021, and that they have also put on the market in Türkiye the facade paints that have been tested and proved to be 99.9 percent effective against viruses and bacteria.



General Manager of Polisan Kansai Boya Sanayi A. Cemal Drahor

Polisan Kansai Boya makes production in its industry 4.0 Based facility



Dr. Selahattin Armağan VURDU
Secretary General of İMMİB

Low Growth, High Inflation!

“The growth projection of developing countries until 2026 is 6 percent lower than the pre-pandemic trend curves. This means that the economies of developing countries lose 2-3 years in the recovery process.”

While increasing inflation rates, disruptions in supply chains, especially in China, and large increases in commodity prices, including food and energy prices, hinder the recovery process of economies in the post-pandemic period, the world economy's growth projections are being revised downwards with the outbreak of the war in Ukraine.

According to the latest expectation report of the IMF, the world economy, which grew by 6.1 percent in 2021, is expected to grow by 3.6 percent in 2022 and 2023. A large-scale contraction is expected, especially in the economies of Russia and Ukraine. It is pointed out that it may take longer than expected for the GDP of developing countries to return to pre-pandemic levels. According to IMF data, developed countries' economies, which grew by an average of 5.2 percent in 2021, are expected to grow by 3.3 percent in 2022 and 2.4 percent in 2023. The average growth rate of developing countries was 6.8 percent in 2021 and this rate is expected to be 3.8 percent in 2022 and 4.4 percent in 2023. In this context, it is seen that the gap between the economies of developed countries and those of developing countries continues to broaden in 2021. The growth projection of developing countries until 2026 is 6 percent lower than the pre-pandemic trend curves. This means that the economies of developing countries lose 2-3 years in the recovery process.

In the IMF revision, a negative change was made in the growth forecasts of 143 countries, which constitute approximately 86 percent of the world's total production, mainly due to the effects of the Russia-Ukraine war. As growth declines, inflation rises, and high inflation rates put downward pressure on growth. One of the biggest effects of the war in Ukraine has been the increase of global energy and food prices. The current expectation is that consumer prices will continue to rise in the short term, but inflation pressure may ease in the medium term.

GLOBAL DEBT STOCK EXPECTED TO DECREASE IN 2022

Within the scope of the 'Spring Meetings', organized by the IMF and WBG between 18-22 April 2022 to evaluate economic developments and attended by managers from both the organizers and various countries, where they shared their views on current issues, economic growth and inflation, as well as the issue of global debt stock, took an important place. Especially during the pandemic process, significant expenditures have been made by many countries in the world for the protection of households and businesses. The large amount of government bonds held by banks in developing countries is a cause for concern! In order to close the budget deficit, governments had put government bonds on the market. While this situation causes the public debt stock to increase at a high level, it also poses a risk to financial stability. Within the scope of the global economic recovery after the pandemic, there was a significant increase in the debt stock of the real sector. According to IMF data, the global debt stock is expected to decline in 2022 and to remain stable at 95 percent of total gross product in the medium term. This rate is 11 points higher than the rate in the pre-pandemic period.

The war in Ukraine risks dividing the world into different geopolitical blocs with different technological standards, payment systems and reserve currency. The biggest challenge that the administrators will face in this process will be to overcome the short-term problems without jeopardizing the long-term sustainable growth targets of the countries.



İSEK provides R&D and innovation to many entrepreneurs and start-ups. Provides support by providing opportunities in the field.

COMMON ADDRESS OF ENTREPRENEURS IN THE FIELD OF HEALTH:

İSEK

İstanbul Sağlık Endüstrisi Kümelenmesi

THE HEALTH SECTOR, WHICH GIVES IMPORTANCE TO R&D AND INNOVATION, OFFERS SECTORAL SUPPORT PROGRAMS TO MANY ENTREPRENEURS AND START-UPS WITHIN THE SCOPE OF İSTANBUL HEALTH INDUSTRY CLUSTER (İSEK).

While global technological developments in the field of medicine encourage hope to humanity in the field of health, Turkish companies and start-ups are also putting their signature under successful projects with their R&D and innovation studies in this field. The İstanbul Health Industry Cluster (İSEK) also plays a leading role in ensuring important developments by providing support to many entrepreneurs and start-ups that carry out R&D activities. İSEK, which set out in 2014 with the aim of becoming a regional development project in the health sector in İstanbul, continues its activities within the scope of a cooperation network with 200 companies, 22 research centres, 14 NGOs and 2 public members. T.R. Teknopark İstanbul A.Ş., which received a contribution within the scope of the "Cluster Support Call" of the Ministry of Industry and Technology. 6 percent of the cluster members of İSEK, which carries out its activities under

the coordination of the company, consist of micro-scale companies and 55 percent consists of companies focused on medical devices. İSEK, also within the framework of the Kandilli Health program, carries out various activities aiming to strengthen the medical device production ecosystem in the region, to increase initiatives for domestic products and technologies, to increase their market shares and export capacities. In this context, the cluster also supports the establishment and operation of medical device pilot production facilities, the development of regionally accredited test laboratories, facilitating the compliance processes of manufacturers, conducting medical sector analyses and supporting entrepreneurship. In addition, services such as the implementation of programs at different levels, training for the needs of the members, participation in workshops and international fairs are among the fields of activity of İSEK.

'ARTIFICIAL BONE' PROJECT FROM BLOOCELL SAĞLIK TEKNOLOJİLERİ

Bloocell Sağlık Teknolojileri Sanayi, which is among the firsts in its field with its 'artificial bone' project, aims to become a world brand by having a permanent expert in the global market.

Bloocell Sağlık Teknolojileri Sanayi, which is a successful start-up in the medical device sector, having a great importance in human health, has developed 'Bloocell Bioscaffold' product, from standard bone grafting to tissue engineering and tissue regeneration in applications such as orthopedic, dental, plastic and reconstructive surgery in bone-related injuries. It is among the firsts in the world with its 'artificial bone' project.

Bloocell Sağlık Teknolojileri Sanayi, included in İSEK's 'Kandilli Health' program, carries out its activities with the aim of becoming a reliable and permanent brand in the world while entering the markets of America, Russia, Central Asia, Pacific, China and India. The 'Bloocell Bioscaffold' project of the company, which also aims to be the first unicorn company of Türkiye in the field of health, won awards from the American Orthopedic Association (AAOS), Orthopedic Research Association (ORS) and John Hopkins University and 4 different international organizations. This value, which is revealed after innovation activities, is defined as exemplary and unique.

"WE OFFER ALTERNATIVE TREATMENT OPPORTUNITY"

Mustafa Cüneyt Çıkman, founder of Bloocell Sağlık Teknolojileri Sanayi, reminded that they work with teammates such as medical doctors, chemical engineers, high bioengineers, biomedical device specialists and molecular biologists, and stated that, "Bloocell has become one of the first representatives of its field as a result of a long-term study and belief. In this sense, we are proud to represent our country in different continents. We are able to offer alternative treatment opportunities to professional health users, namely doctors, and we observe the successful results of these treatments in patients."



Informing that their products allow the personalization of precise shape and geometry, and that this approach is of critical importance in fully adapting to the anatomical structure, Çıkman emphasizes that Bloocell Bioscaffold plays a key role in wound healing and tissue repair with its unique architectural structure. Reminding that their annual production capacity is one million units per year, Çıkman concludes his words as follows: "We are continuing distributorship negotiations with India, United Arab Emirates and Saudi Arabia in order to increase our exports. In addition, we are in an effort to expand our market by participating in MEDICA, America CES, Arab Health and IDEX fairs. Our primary goal is to have a permanent say in the market, to make a contribution to the country's economy, to cooperate with leading health institutes and technology companies, and to become a world brand..."



MEDOSSEL MEDİKAL DEVELOPS ENDOSCOPY SYSTEMS IN TÜRKİYE

Focusing on innovative products in the field of health, Medosel Medikal designs and manufactures endoscopy systems that have not been produced in Türkiye before, with its own capital, and contributes to the country's economy.

Medosel Medikal, which focuses on nationalizing high value-added products, creating an infrastructure for advanced technology products with the knowledge and experience it has gained, and systems that include artificial intelligence, has been offering the Cleber brand to the market since 2010. Medosel Medikal, which carries out its work with a team of 10 people, mostly engineers, designs and manufactures endoscopy systems that have not been produced in Türkiye before, with its own capital, and it contributes to the country's economy. "We are currently working on the use of our products, only used in the field of ENT, to be able to use in other fields as well. The production of 4 of our 28 existing projects has started, and we are also continuing the R&D studies of 6 of our projects. We anticipate completing the remaining 18 projects in the next 5 years," says Soner Sabri Bozok, Business Development Officer at Medosel Medikal, and says that they focus entirely on innovative products.

Pointing out that they have achieved significant success in an area that seemed impossible by producing the endoscopic imaging system, which was previously thought to be difficult to produce with advanced technology, Bozok underlines that their products are preferred by physicians because they offer quality and price advantages. Bozok said, "With the feedback we receive from our physicians, we develop our products and return to the market quickly. We often use this advantage of production and product development. Currently, our production capacity is able to tolerate domestically, and we are planning our capacity increase activities for abroad. We are targeting the EU market in the future."

R&D IS ESSENTIAL TO KEEP UP WITH THE WORLD

Pointing out that it is inevitable to carry out R&D activities in order to benefit from the economic growth brought by technological innovations and keep up with the changing world, Bozok emphasizes that as the medical device industry, they are working to catch up with their global competitors. Bozok points out that today, large-scale companies can implement growth models based on R&D with their own means. Stating that there is a greater need for the contribution and regulatory role of the states in increasing the R&D capacities of SMEs, which make up a large part of our country's economy, Bozok said that they are involved in the 'Kandilli Health' program organized by the Istanbul Health Industry Cluster and they are trying to develop their business networks.

TÜRKIYE'S FIRST AUTOMATIC CIRCUIT MESSAGE DEVICE IS MANUFACTURED

Focusing on the products that the country needs in terms of medical and medical devices, Remar Medikal succeeded in producing the 'Automatic Cardiac Massage' CPR device for the first time in Türkiye thanks to its R&D and innovation studies and started exporting.



Remar Medikal, one of the important companies within the scope of İstanbul Health Industry Cluster (İSEK), was established in 2019 with the aim of manufacturing medical devices that are not produced in Türkiye. Focusing on R&D and innovation studies for the products used in emergency health services from the first moment, Remar Medikal succeeded in producing the 'Automatic Cardiac Massage' CPR Device for the first time in Türkiye and presents it to the service of the health sector. Remzi Kanbur, Chairman of Remar Medikal, states that R&D awareness has developed in recent years and they have signed important projects in this regard.

Reminding that Remar Medikal was established under the umbrella of Makplast, which produces packaging for pharmaceutical companies, Kanbur states that they know the needs of the industry well. Stating that they are focused on R&D and innovation, Kanbur emphasized that they introduced their first product, the CPR device, to the market and said, "We received the CE and ISO 13485 quality standard certificates of our CPR device. We have prepared our technical dossier for the FDA certificate and made our preliminary application. In addition to the domestic market, we started exporting to Poland and Azerbaijan. We will continue to export to Iran, Malaysia, Sri Lanka, Kosovo and Serbia in the near future. We aim to increase the number of our overseas distributorships and export them to 15 countries by the end of the year."

Reminding that they develop products working with 3 engineers and emergency medicine specialists in the design and production processes, and they are a team of 18 people, together with expert technicians in the assembly team and the sales and marketing department, Kanbur alleges that "We are trying to contribute to the country's economy by focusing on the products, which has not been produced before. We believe that we can compete with our competitors in the global market by following the innovations and dynamics of the sector. For

this, we try to keep our company up-to-date by doing our data research and participating in scientific congresses and international fairs."

R&D STUDIES ON NEW PRODUCTS CONTINUES

Expressing that they consulted the opinions and suggestions of specialist physicians in the sector while developing products, and that they focused on products that are lacking and will be accepted in Türkiye, Kanbur shares the following information about their new projects: "We are also planning to offer the Disposable Defibrillator Pad, which we have planned to obtain the CE certificate by the end of the year, to the service of the health sector. In addition, we are halfway through our R&D studies for another unique device that will be produced first in the world if we could finish the work. We will share information about this with the public later."

Stating that as a manufacturer, they strive to raise awareness in the production phase both in terms of R&D innovation and needs in the sector, and that they aim to contribute to the national economy together with humanity, Kanbur underlines that they want to come together more with the decision-making managers within the system. Pointing out that synergy will be created and much more useful work can be done in the environment that will be formed by the parties, coming together more, Kanbur says, "In this way, the relevant institutions will be able to find solutions to the test and analysis needs of innovative companies faster by conducting R&D studies."

TWO INNOVATIVE PRODUCTS FROM ANATOLIAN GODDESS 'UMAYANA'

The research and development journey of Umayana R&D ve İlaç Sanayi, which started in America, continues in Istanbul. Here, the company that developed two products that prevent cancer wounds, which is the first in the world, offered them to the use of patients.

Entrepreneur and scientist Hülya Dağöttüren, who founded Umayana LLC with another colleague in the USA in 2017, succeeds in making important developments by focusing on the subject of difficult-to-heal wounds, much needed by patients in the USA for its products that prevent cancer wounds for the first time in the world, starts production with Umayana R&D and Pharmaceutical Industry, which is established in Teknopark İstanbul within the scope of İSEK, and its first products are delivered to some hospitals in Türkiye and abroad in May 2022.

Dağöttüren states that, "With our company, which is named for the Anatolian goddess Umayana, we commercialized two of our products in Türkiye and started selling them in pharmacies. We are very proud with my teammates. Because 42 percent of the applications made to the American patent office are approved. My American partner who has worked in Unilever, Nestle and J&J companies and has marketing experience, has a share in this success and undertakes the sales and marketing operations of our company. Our other partner is a radio oncology professor in the field we work in, manages clinical studies and medical issues. As the researcher of our patented product, I am responsible for R&D and scientific studies. Our partner, managing the financial issues of our company, has international investment experience and manages financial and logistics issues." Then, Dağöttüren propounds that they have achieved an important success all together, and says that they have registered their 'Murnia' branded products, in Europe and Türkiye as well as in the USA.

Emphasizing that their products prevent and heal wounds in the mouth and skin due to cancer treatment, which are incurable, Dağöttüren explains that, "These wounds are extremely painful and patients describe it as 'more difficult than cancer'. Radiodermatitis wounds are also very painful when they go to open wounds, which we call grade 3 ... Both are wounds that can lead to a break in treatment. In this case, since the cancer is differentiated, it is necessary to start over with a different treatment protocol. Therefore, it

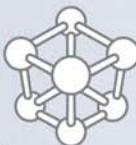


brings additional costs to the patient and the state. The effectiveness of our 'Murnia Gel' product in preventing mouth wounds has been proven in an ethics committee approved, with double-blind, placebo-controlled study. The study was presented at the 2019 World Congress of the Academy of Oral Oncology. The treatment was not interrupted, mucositis was not formed in clear and painful grade 3 and 4 throughout the entire regimen."

HIGH TECH PRODUCTS

Dağöttüren said, "Murnia Cream prevented radiodermatitis wounds and burns by 88 percent from going to class 3 level, where open wounds are formed. Both of our products have been developed with high technology. Molecules derived from the world's only pharmaceutical grade resin approved for use in medicine were encapsulated and used in the formula." Dağöttüren defines Murnia cream as being very effective without containing petroleum derivatives, which distinguishes it from other products.

Dağöttüren stated that their products started to be sold after being prescribed in 3 big hospitals, and that they started to export their products to be used in Antwerp and Leuvenhoek hospitals, which are considered a reference in Europe, with a strong wound company in the EU market. She also draws attention to the fact that they have made a new patent application for developing different formulas including bed sore within the scope of the studies in their laboratory in Teknopark İstanbul Biocube.



CHEMICALS REGULATORY COMPLIANCE IS A GLOBAL COMPETITION STRATEGY, NOT A FORMALITY!



- EU REACH & Turkish KKDİK OR Services
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THE ANCIENT CITY OF EPHESUS

SHEDS LIGHT ON EIGHT THOUSAND YEARS OF HISTORY

EPHESUS ANCIENT CITY, WHICH IS ON THE UNESCO WORLD HERITAGE LIST, CONTAINS THE TEMPLE OF ARTEMIS, ONE OF THE SEVEN WONDERS OF THE WORLD, HAS THE LARGEST THEATRE OF THE ANCIENT PERIOD AND MANY OTHER HISTORICAL TEXTURES, SHEDS LIGHT ON EIGHT THOUSAND YEARS OF HISTORY IN ALL ITS SPLENDOUR.

The ancient city of Ephesus, which stands out as the city of temples of antiquity, is also home to the Temple of Artemis, one of the seven wonders of the world, and attracts attention by entering the UNESCO World Heritage list, it sheds light on history and many civilizations with its past of more than eight thousand years. Ephesus, one of the important parts of Anatolia's rich history and culture, always manages to write its name in history as an important trade and settlement place of many civilizations from the Hellenistic period to the Romans, from the Seljuks to the Ottomans. Today, the city, which is one of the most visited ancient cities in the world with its historical riches, welcomes its curious visitors back to the 6000 BC. The ancient city of Ephesus is so rich that it can take days for its enthusiasts to visit in detail.

The excavations in the ancient city, which consists of four components, called Çukuriçi Höyük, Ayasuluk Hill, Ephesus and the House of the Virgin Mary, started for the first time in 1863 by archaeologist John Turtle Wood with the contributions of the British Museum. Since the foundations of this temple were reached at a depth of 6 meters in 1869, within the scope of the excavations of the Temple of Artemis, research on the historical city still continues with the excitement of the first day. After more than 150 years of excavations, it is determined that the foundation of Ephesus dates back to 6000 BC in Neolithic Age. Due to its proximity to the sea, the city became a port city over time and became a trade centre between east and west. It grows around the Temple of Artemis in the 560s.





EPHESUS RANKS FIRST IN CULTURE AND ART

Today's known area of the city, which was enlarged by Lisimahos, one of the commanders of Alexander the Great around B.C. 300, greatly increased its splendor at that time and has shown a great development that will last for decades. Ephesus, which was at the forefront with Miletus in science, art and culture in the 6th century BC, provided the education of famous people such as the wise Heraclitus, the dream interpreter Artemidoros, the poet Callinos and Hipponaks, the grammar scholar Zenodotos, the physician Soranos and Rufus. So the city has managed to rank among the top cities in a variety of categories. While the city became the capital of the Province of Asia during the time of the Roman Emperor Augustus, it is revealed that during the excavations that it exceeded 200,000 people in B.C. the first and second centuries.

Ephesus, which has always been a favorite city, was destroyed by wars from time to time, while it also suffered from a great damage in the earthquake that occurred in A.D. 614. Contributing to the commercial life of Ephesus, which has always stood with its destiny that defies millennia, the port is filled with alluvium brought by the Marnas Stream and Küçük Menderes river coming from the north, after long years of accumulation. As Ephesus moves away from the sea, the city center develops towards Ayasuluk Hill in Selçuk. The city, which was taken by the Turks in 1330, continued to exist for a while after the Aydınoğulları made Ayasuluk their center and started to shrink beginning from the 16th century.

The ancient city of Ephesus has such a rich historical texture that books are not enough to explain it properly. However, it should be underlined that this historical region is the city of temples in the first place. Firstly; While depicting the 3,000-year-old foundation legend of Ephesus on the frieze at the entrance of the Temple of Hadrian, "Androklos, the brave son of Kodros, King of Athens, wants to explore the opposite side of the Aegean. First, he consults the oracle of the Temple

Today's known area of the city, which grew in 300 years BC under the leadership of Lisimahos, one of the commanders of Alexander the Great, greatly increased its splendor at that time and shows a development that will last for decades. Ephesus, which was at the forefront with Miletus in science, art and culture in the 6th century BC, trains many artists and scientists.

of Apollo in Delphi. The oracles tell him that he will establish a city where the fish and the pig point. While thinking about the meaning of these words, Androklos sails to the dark blue waters of the Aegean... When they come to the bay at the mouth of Kaystros, Küçük Menderes River, they decide to go ashore. While they were cooking the fish they caught by lighting a fire, a wild boar came out of the bushes and escaped by snatching the fish. Here the prophecy has come true. They decide to establish a city here..." The inscription also briefly describes the fate of the city.

ONE OF THE SEVEN WONDERS OF THE WORLD: THE TEMPLE OF ARTEMIS...

On the other hand, the mythological story of the city is not limited to this... The largest temple of Artemis culture, based on the tradition of Kybele, the ancient mother goddess of Anatolia, is also located in Ephesus. This mystical structure, which is one of the seven wonders of the world and took its place in history as the Temple of Artemis, was founded as the first temple of the ancient world built of marble. It is estimated to date back to the 7th century BC. It is determined in the historical records that this temple, which was built by the Lydian king Croesus in honor of the Goddess Artemis, was designed by the Greek architect Chersiphron and was built by the greatest sculptors of the period, Pheidias, Polycleitus, Kresilas and Phradmon.

Among the other temples in the ancient city that should be seen, there is the Temple of Hadrian, which was built as a monumental temple in the name of Emperor Hadrian. This temple, which is in Corinthian order and the legend of the foundation of Ephesus is embroidered on its friezes, is among the important works of Ephesus.

The Domitian Temple is thought to be one of the largest structures in the ancient city. It is determined

that this temple, which was built in the name of Emperor Domitianus, is opposite the Memmius Monument and on the left diagonal of the Pollio Fountain. It is envisaged that there are columns on the sides of this temple, only the foundations of which remain today. The remains of the statue of Domitianus reach today as a head and an arm.

The Temple of Serapis, right behind the Celsus Library, is also observed as one of the most interesting structures of Ephesus. It is thought that the temple, which was converted into a church during the Christian era, was built by the Egyptians.

Pilgrimage Center of Christians; THE HOUSE OF THE VIRGIN MARY

It is known that the House of Virgin Mary, which is believed to have spent the last years of Mary, the mother of Jesus, with John in Bülbuldağı, is the place where the Consul Meeting 431 was held. This holy place, which was built as a church, is also visited as a pilgrimage centre for Christians. This structure takes its place in history as one of the first seven churches for Christianity.

Such a rich historical texture awaits those who visit the ancient city of Ephesus that one feels as if he was lost thousands of years ago in this land of culture. The Celsus Library, located in this historical city, stands out as the texture of the rich cultural structure. While it is historical records that this building is both a library and a tomb monument, it is thought that when Celsius, the governor of Ephesus, died in 106, his son converted the library as a tomb monument to his father's name. Under the western wall of the library is Celsius's sarcophagus.

On the other hand, the Odeon, which is the city's senate building, shows that Ephesus had a bicameral

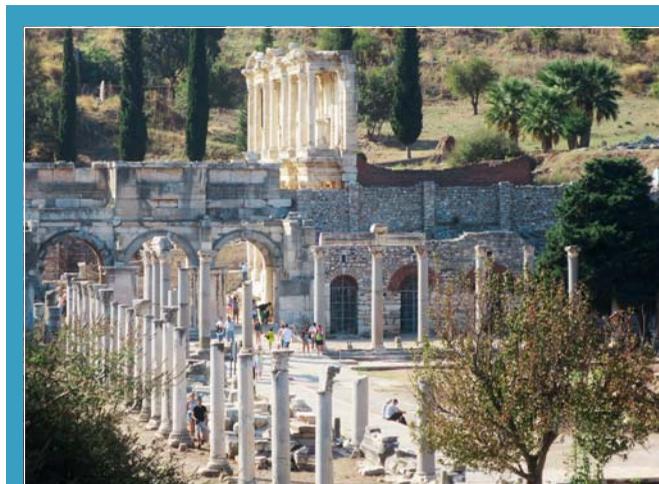
administration. While this covered structure was the building where senators of the period gathered, on the other hand, it also served as the 'Advisory Council'. It is predicted that concerts were held from time to time in this historical Odeon with a capacity of 1400 people. While visiting this building, which is also called the Bouleterion, you can feel like a noble senator of the period.

The Prytaneion, the town hall, where the Artemis statues are exhibited in the Ephesus museum, also draws attention with its thick columns. It was of great importance at that time that the city fire, which symbolizes the immortality of the city in this building, was not extinguished.

THE GREATEST STAGE OF THE PERIOD: ANCIENT THEATER

While the marbled road stands out as the city's street extending from the library square to the theatre, this road that is followed leads its visitors to an important cultural centre. The big theatre can be reached after a pleasant and curious walk on the marbled road. This highly decorated art centre, which is the largest open-air theatre in the ancient world with a capacity of 24 thousand people, still continues to serve art lovers, albeit limited, with a seating group consisting of three sections.

On the other hand, the city's palace structure, stadium street, stadium and gymnasium are among the important structures of the city. It is observed that a part of the building and the stadium street, which is located as a Byzantine palace, have been restored. The horseshoe-shaped stadium is known as the place where the sports events of the period were held. While it is mentioned in the historical records that the gladiator games of the Late Roman period were held here, it is learned that the Vedius Gymnasium, located next to the stadium, was a bath and school complex.



DOORS TO THE CITY...

The most important entrance to the Ancient City of Ephesus is the Magnesia Gate, the upper gate, located to the east of the city walls around the city. Magnesia Gate, on the Virgin Mary's House Road, is of great importance for the entrance and exit of the city. On the other hand, the Heracles Gate, which was built at the end of the Roman Age, gains this name due to the 'Herakles' reliefs on its front. Mazeus Mitridatis, i.e. the South Gate of the Agora, was built during the reign of Emperor Augustus, and the passage to the commercial agora was provided from here.



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AYDIN AĖAOĖLU

Mathematics and chemistry,
the mysterious focus of the
secrets of existence!

Aydın Ağaoğlu, who is a senior manager in many non-governmental organizations and one of the partners of Yömser Ambalaj in the plastics industry, stated that the chemical industry plays an important role in the development of humanity and said, "Mathematics and chemistry are the mysterious focus of the secrets of existence. A comfortable and safe future in every aspect of life depends on our chemical industry."

Aydın Ağaoğlu, one of the partners of Yömser Ambalaj Sanayi, who has made his name among the veterans of the chemical industry, takes part in many non-governmental organizations, from the establishment of PAGEV to the honorary chairman of the Consumer Problems Association, and is at the forefront of human-oriented studies. Mentioning the importance of the chemical industry for humanity, Ağaoğlu said, "A comfortable and safe future in every aspect of life depends on our chemical industry, because the development of the chemical industry is identical with the development of humanity. Today, humanity owes its safe nutrition and even its decoration to the development and practices of the chemical industry. Ağaoğlu sincerely answers the questions of Chemist magazine and shares his views with industry representatives.

Can we get to know Aydın Ağaoğlu, one of the important names in the plastic household appliances industry?

I was born in Ankara and completed my primary and secondary education here, and high school and university in Istanbul. However, today's people are generally not interested in such topics and even get bored of reading. In other words, where you came from, what kind of efforts you have made do not concern the people of the present time... They are not wrong, actually; because with the expansion of the telecommunication sector and the global media in parallel, today's people cannot even find the opportunity to read newspapers. You can access any of the hundreds of TV channels with a single touch, and share your favorite movies, documentaries, cultural publications, news, information, etc. They can access the elements both visually and audibly. They can also share their feelings, ideas and events in their lives, from the food they eat to their health, with others through their personal accounts on the Internet and social media.

When did you start your career? Where, how and under what conditions did you meet your industry?

I started my career professionally in the marketing unit

of a medium-sized holding company that produces construction materials. About two years later, I moved to the staff of Delta Plastik Endüstrisi A.Ş., which is in the same group. In 1981, my brother and I established the SME-scale Görsel Plastik Ambalaj San. ve Tic. I served as the Chairman of the Board of Directors of A.Ş. for many years. Görsel Plastik A.Ş.. While continuing on his way, Yöm Vakum Ambalaj Ambalaj Sanayi Ltd., where our paths crossed and became closer while I was working at Delta Partnering with the late Şaban Yavuz, the founder of his company, we started the production of corrugated polypropylene school and stationery bags for the first time in Türkiye. On the other hand, we entered into a triple partnership with Şaban Yavuz, the founder of the new company, called Yömser Ambalaj San. ve Tic. A.Ş., and with the participation of Osman Seyhan, the former General Manager of Delta Plastik A.Ş. Yömser Inc. We are currently exporting a significant amount to various countries of the world.

"THE CONSUMER OF EVERYTHING"

Could you tell us about the production power and experience of your company, Yömser, through its role in the sector? What did Aydın Ağaoğlu do on behalf of his sector?

I do not think that Yömser's power in the sector is more than our colleagues who produce in the same group. We had elders, whose names I cannot count now, such as Muammer Yüceler, Güngör Özadam and the late Altan Ünal, Fahri Kayhan, Muammer İbrişim, who gathered the industry, brought it together, and brought it together on common grounds.

In my opinion, the advantage of Yömser stems from the fact that the trusting and sincere partners have entrusted the works of the factory to the second generation young people who are trained from the core, speak foreign languages, and are familiar with technology and production processes. In addition to the management of our companies, I was also interested in social benefit projects due to my nature. Turkish Plastics



Industrialists Research Development and Education Foundation (PAGEV), of which I am a founding Board Member, firstly İnönü Industrial Vocational High School in Bayrampaşa and then M.Ü. to train intermediate staff for the sector. It cooperated with the Faculty of Technical Education. Subsequently, he built an Anatolian Technical High School in the Gebze Plastics Organized Site (GEPOSB) in Gebze and donated it to the National Education.

In this process, I saw that the purpose of every activity is towards consumers, that is, the subject of everything is the 'consumer'. I started collecting information about the consumer law that came into force in 1995. After all, every economic activity had to be consumer-oriented. At that time, I was involved in some consumer organizations. For example, I took a stance against the populist, unscientific and uninformed disinformation of plastic materials, which were declared as 'scapegoats' on environmental pollution. If I had done this as a representative of the plastics industry instead of doing it on behalf of the consumer, it would certainly not have been possible to have the same effect.

According to you, what should be the success criteria of a person? What are your secrets that lead you to success?

The secret of success; is to focus on success. This often requires hard work and commitment. That is to say, just making money is never 'true success' in my opinion. Financial gain is only one of the side elements of success. Achieving success in the focus is achieving a positive result by hitting several birds with one stone. Anyone with a bit of a sniper can hit a bird with one

stone. The important thing is to determine the target well, without harming; to provide trust, reputation and financial gain and experience. It requires putting forth the intellectual, material, spiritual and, if necessary, physical effort required to achieve this result by tending to do the job in the best way possible. However, purely material gain can often result in frustration. I think the golden keys to my success are hard work, perseverance and finding the difference.

THE INDUSTRY WILL BE SUSTAINABLE BY ADOPTING THE GREEN APPROACH

Can you evaluate your industry with the experience of a veteran?

The presence we have shown in the chemical industry in 35 years is undeniable. However, with globalization, the world has become a village. As members of the industry, we should work hard in a rational sense for success at the international level, and the state should increase its support. In addition, planning the sector goals by adopting the 'Sustainable Development Goals', which consists of 17 universal goals and accepted in the United Nations General Assembly in 2015, will help us in the global arena. I believe that will take it one step further.

The climate crisis has a significant impact on people's living spaces and agricultural activities. In recent times, when the global warming and climate crisis, which affect the life cycles of humans and all other living beings, have begun to make themselves felt, especially as the chemistry and plastics industry; I am of the opinion that both sustainable industrialization and the most important investment that can be made

in the environment and human future can be achieved by internalizing and applying concepts such as carbon management, ethical use of resources, renewable energy and adopting an environmentalist and green understanding in waste management.

Does your industry direct world trends or is it preferred? At this point, we would like to know your valuable opinions.

It is a good goal that we, as an industry, are directing world trends. We must do the best we can in order to achieve our goal of global presence, and we must not be contented with it, but aim to do better. The biggest enemy in achieving this goal is laxity and tolerance. We should not be tolerant of mistakes; we should not be content with success.

What does the chemical industry, which touches every aspect of life, mean to you?

Mathematics and chemistry are the mysterious focus of the secrets of existence. Today, when people think of chemistry, they think of the middle school curriculum. However, a comfortable and safe future in every aspect of life depends on the chemical industry, because the development of the chemical industry is identical to the development of humanity. Today, humanity owes its safe nutrition and even its decoration to the development and practices of the chemical industry.

Due to the Covid-19 pandemic, more attention has been paid to hygiene, especially in household

appliances. How did this affect your industry and your ways of doing business?

Pandemic; In other words, the epidemic disease made many people sick and even killed. As they say: "There is good in every evil." This threat has revived the disinfectant industry, along with disposable food packaging. In a way, human beings took refuge in the chemical industry to protect them from the epidemic. Therefore, production and exports showed positive developments. With the increase in consumption, a positive decision was taken, such as the transition to the 'deposit' application for environmental protection, especially for packaging. This was actually the suggestion of our consumers.

We know your workload is heavy. At this point, do you have a hobby that relaxes you mentally and physically? If yes, could you share what you did at this point in detail?

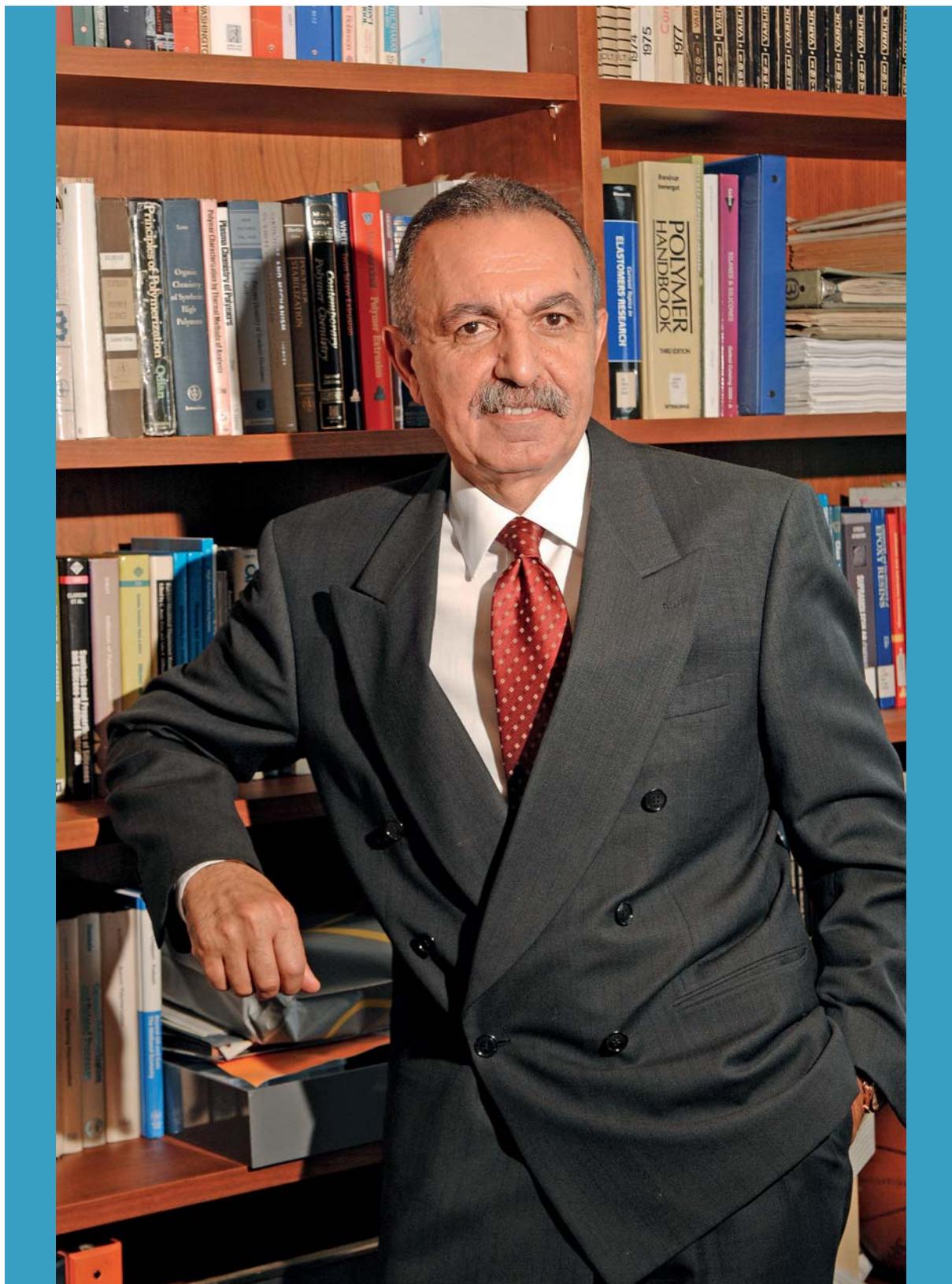
The only thing that relaxes me mentally and physically is the happiness and peace of people whose lives I can touch. It is my greatest source of peace and rest to feel the feelings of gratitude even if I do not hear their thanks when I can contribute even a little to the elimination of the problems of the people of my country. While serving people, it is necessary not to harm the environment and to keep in mind that it will reflect negatively on that person or the next generation. We should not forget that we are mortal, and we should not forget that our planet needs future generations and more importantly, that we are 'Role Models' for them.



TRADITIONS MUST BE OPEN TO INNOVATION

What advice would you give to young people who want to work in your industry?

First of all, young people who will operate in the sector should focus on doing and developing their jobs well. They should not have the understanding that it was like this before us. We, as the old generation, were successful, but the conditions of that day and today's conditions are quite different. As concepts such as cloud computing, block chain, social media, drones, 5G, machine learning, artificial intelligence, data analytics, internet of things, wearable devices, digital payment, virtual reality, automation, robot technology, and cyber security increase their place in our lives, they continue to innovate by observing tradition. They should be open and even strive for innovation. In line with Industry 4.0 developments, I think that the future human will be a hybrid human with Society 5.0, where humans, robots and artificial intelligence will join forces. For this reason, I recommend that they develop ideas on these visions as well as engineering and business disciplines.



AMAZING INVENTIONS BY Prof. Dr. YILGÖR FROM THE FIELD OF MEDICINE TO TEXTILE AND FROM AVIATION TO DEFENCE

Taking part in the foundation of Koç University Chemistry Department and developing incredible projects for humanity from defence to aviation, medicine to textile, Prof. Dr. İskender Yılğör is crowning his achievements by being entitled to receive the TÜBİTAK Science Award in 2003.

Thanks to the chemical industry, where projects that make life easier for humanity are developed, inventions that are hard to believe have come into being in the field of health, textile, plastics, energy and all imaginable sectors. Developing projects regardless of the rhetoric of “inventing new inventions on our own”, Prof. Dr. İskender Yılğör is making important inventions for humanity with the projects he has developed in many fields from space, aviation and defence industries to medicine and textile sectors. Winning the ‘TÜBİTAK Science Award’ in 2003 for his pioneering synthesis, characterization and structure-morphology-performance studies on reactive-functional silicone oligomers and silicon-containing thermoplastic copolymers, Prof. Dr. Yılğör’s passion for chemistry starts from childhood.

“After school, I used to go to my father’s photography studio and help him. I used to prepare the film and paper baths every week according to the recipe my father gave me. Sometimes I would go into the dark room and help my father print the photos. I was very interested in the slow formation of images as a result of a chemical reaction on a white paper. At that time, I learned to cover the copper 5 and 10 cents, which we used as pocket money, with silver by dipping them in a hyposulfite bath. This is how my interest in chemistry started. I was also very interested in the chemistry lessons that I started to take in the second year of high school. In addition, I would sometimes go to our family friend Zühtü Urgan, who has biochemistry laboratories, and watch their experiments with interest,” said Prof. Dr. Yılğör describing his chemistry adventure and he became a chemistry student at

METU in 1968 by following this excitement. and successfully completed his education.

Prof. Dr. Yılğör recalls that while he was working as an Assistant Professor at METU, he met Prof. James E. McGrath from Virginia Polytechnic Institute (Va Tech) at a conference he attended in Germany in 1979 and it was an important turning point for him. Reminding that McGrath offered him a job because he needed a competent researcher in copolymer synthesis and characterization, Prof. Dr. Yılğör explains the following as follows: “I took a leave of absence from METU for two years and at the end of March 1980 I participated in Prof. McGrath’s large and active research group on a wide variety of topics. Va Tech Polymer Group consisted of polymer morphology and structure-performance relations expert Prof. Garth L. Wilkes and polymer physical chemistry, surface scientist Prof. Thomas C. Ward together with Prof. McGrath. Va Tech soon became one of the most important polymer research centers in the world, as these three people



Prof. Dr. Yılğör (yellow shirt) with the research group students in 2001 together. Yılğör reminds that all of these students have a PhD.

Establishment of Chemistry department at Koç University

Stating that they came to Türkiye with his wife Emel Yılğör, with whom he worked in the USA, in October 1994, they started to work to establish Koç University Chemistry Department and Polymer Research Laboratories. Dr. Yılğör said, “Our research studies, which we conducted with undergraduate students in the first years, were basically about examining the effect of ‘hydrogen bond’ on the morphology and properties of polyurethane and polyurea polymers. For this purpose, we synthesized polyether and PDMS based model polyurethane and polyurea copolymers with different hydrogen bond structures and examined their thermal, mechanical and surface properties. Next, we correlated polymer structure with polymer properties. Then, with the start of our master’s and doctorate programs, we shifted our studies to different research areas. As always, undergraduate students participated in these studies. We can summarize the most important of our research work as follows:

- ▶ Preparation and characterization of superhydrophobic polymeric surfaces,
- ▶ Synthesis and characterization of multibranched polyurethanes,
- ▶ Development and applications of biocompatible and biodegradable polymeric materials for use in 3D printers in tissue engineering applications,
- ▶ Ice-repellent polymeric coatings,
- ▶ Polymeric foams.

In addition to our academic research studies, we have also carried out research projects for many domestic and foreign institutions and companies. We can list the most important of them as follows:

- ▶ Development of waterproof but water vapor permeable membranes and fabrics coated with them. Supporting organization: Ministry of National Defense R&D Department
- ▶ Surface modification of polyamide fibers. Nylstar, Italy.
- ▶ Silicon-urea copolymers. Wacker Chemie, Germany.
- ▶ Development of hybrid polyurethane additives for wrinkle-free fabric applications. Procter & Gamble, USA.
- ▶ Surface modification of carbon fibres, Türkiye.
- ▶ Development of high performance adhesive, Türkiye.”



Prof. Dr. Yılğör with Prof. Dr. Mc Grath and his team in Blacksburg, Virginia

complement each other very well scientifically, and get along very well personally and work in harmony. I was constantly working on new topics with all three of them, and I was learning especially from the leaders of the business about the relationship between the chemical structure, morphology and properties of polymers.”

FIRST DISCOVERIES ARE COMING...

Reminding that his first success, which was innovative and pioneering during his work at Va Tech, started because of his personal curiosity, Prof. Dr. Yılğör said, “My first discovery as a result of studies is thermoplastic silicon-urea copolymers. This work is the first example of linear chain silicone copolymers with elastomeric properties. Other silicone elastomers are cross covalently bonded. The superior mechanical and thermomechanical properties of the copolymers I synthesized were due to the strong hydrogen bonds formed between urea groups instead of crosslinks, and the very advanced microphase separation between PDMS and urea. We made our first 4 publications on these materials in 1982 and 1984, and subsequently we published many original articles on the same subject. Our 1982 and 1984 publications still receive numerous citations 40 years later. This is because our study is the first in the research data. Such materials have been commercialized by 3M and Wacker Chemie”.

Prof. Dr. Yılğör says that another innovative work he has done at Va Tech is to increase the impact strength as a result of the modification of epoxy resins with reactive-tipped aromatic polyether sulfone oligomers. Stating that oligomers with rubbery properties were used before, this product caused rapid oxidation by lowering the glass transition temperature of the cured resin and negatively affected its mechanical (Young modulus) properties. Yıl-



Prof. Dr. Yilgör (far right) during his visit to Las Vegas in 2004 (from left) Prof. Dr. Tom Ward, his wife Emel Yilgör, Prof. Dr. Jim McGrath, Prof. Dr. With Garth Wilkes.

gör said, “With the method we developed, it was possible to significantly increase the impact strength of epoxy resins without affecting the thermal and mechanical properties. The articles we published in 1985 and 1991 on these studies still receive numerous citations. “This method is now routinely used in the aerospace and defence industries to manufacture carbon fibre reinforced epoxy composites.”

ARTIFICIAL VESSEL FROM SILICONE COPOLYMER!

Prof. Yilgör expresses another discovery as follows: “The most important innovative work we have done at Mercor; It is a surface modification with silicone copolymers that we have specially designed and developed for polyurethane-based artificial vessels used in open heart and bypass surgeries. In this way, I think that by preventing blood clots that may occur on the artificial vessel surface, we made a contribute to many people’s healthy lives after surgery.”

On the other hand, reminding of an innovative work they did at Koç University, Prof. Dr. Yilgor, in 2008 he says that he received an interesting phone call from P&G Company in the USA and that this company could not reach the innovative approach it aimed despite being in contact with many institutions. Emphasizing that P&G aims to ensure that the fabric does not wrinkle after washing, drying and ironing by adding an additive to laundry detergent, Prof. Dr. Yilgör first asked himself “Why does the fabric wrinkle?” Afterwards, Prof. Dr. Yilgör, who designed and synthesized 5 different polymeric additives and shared them with P&G emphasizes that three of them performed quite well, and one of them gave very superior results. Reminding that 5 patents were obtained for this tech-

nology in 5 USA, 1 world (WO) and China, Japan, Canada, Australia, Argentina and Mexico, Prof. Dr. points out that “This product is currently sold in the USA.”

ADVICE TO YOUTH...

Supporting many studies in the fields of science, engineering and medicine, Prof. Dr. Yilgör shares the following information: “Many important issues such as synthesizing new materials and drugs, developing renewable energy technologies, using natural and renewable products instead of petroleum derivatives, and carrying out sustainable studies that protect the environment are carried out by research chemists. For all these reasons, my advice to young people is that if they have a serious interest in chemistry, they should study in English in a good university, if possible, and then complete this with a good doctoral education in the country or abroad. My other suggestions are to constantly read and learn, enjoy learning, be open to teamwork, have a broad perspective, and seek solutions to problems by establishing relationships between different subjects and disciplines.”

Some awards of Prof. Yilgör

- ▶ 1987 Best Article Award, INDA Tech Meeting, Atlanta, Ga, USA
- ▶ Koç University – Siemens AG, Werner von Siemens Excellence Award in Science and Technology
- ▶ 2003 TÜBİTAK Science Award
- ▶ 2005 Best Article Award, 167th ACS Rubber Division Meeting, San Antonio, Tx, USA
- ▶ 2022 Koç University 2021 KUIMPACT Patent Competition – First Prize



\$ 8.989

BILLION

**2021 EXPORTS
OF THE PLASTICS
INDUSTRY**

\$ 2,35

**KG PRICE PER UNIT
IN 2021**

PLASTIC INDUSTRY, THE LOCOMOTIVE OF THE CHEMICAL INDUSTRY IN EXPORT

While the chemical industry is moving towards leadership with its share in Türkiye total exports, the plastics industry plays the biggest role in this sector. With the success it has shown in exports in the last three years, the plastics industry has achieved great success both in terms of kilograms, in terms of added value and in terms of export figures. Having achieved 8 billion 989 million dollars of foreign sales success in 2021, it will not be a surprise for the sector to reach 12 billion dollars in exports this year.



\$ 615.7

MILLION

GERMANY IS THE
MOST EXPORTED
COUNTRY IN 2021

While the chemical industry succeeded in surpassing all industries in Türkiye monthly total exports and ranked first, the plastics industry has a large share in this. The plastics industry, which also supplies raw materials to many different industries, is among the main actors of the country's exports as one of the indispensable sectors of chemistry. The Turkish plastics industry, which has also turned the global pandemic

process into an opportunity, stands out as the first door knocked on by countries in search of alternative suppliers around the world, especially the European Union. The fact that Turkish plastic products have been preferred in global markets and the increase in demand reflects positively on exports, on the other hand, this strengthens the brand and quality perception of the country.

While plastics industry made a gain of \$2.03 for kg price per unit in 2019, this increased up to \$2.35 in 2021. At this point, a detail that does not go unnoticed is the increase of kg price per unit up to \$2.59 in the first four months of 2022 ... This increase also reveals the importance that the plastics industry attaches to R&D and innovation, and the contribution it makes in this context.

When the export position of the plastics industry in global markets is examined, it is observed that there has been an increase in foreign sales approaching 30 percent in the last three years. Accordingly, the plastics industry, which exports 6 billion 124 million dollars in return for 3 billion 18 million kg product sales in 2019, succeeds in increasing the amount of product by 3 billion 266 million kg in 2020, and succeeds in increasing its export figure to 6 billion 331 billion. Raising the bar of success even higher in 2021, the plastics industry increases its product sales to 3 billion 828 million kg, while increasing its export figure to 8 billion 989 million dollars. While these data revive the plastics industry, it also supports the future vision focused on growth.

While the chemical industry foresees a growth-oriented export target of 28 billion dollars in 2022, the plastics industry, contributing to this fact, also expects to increase its data in 2021 by 10 percent to reach 9.8 billion dollars. However, an important point that sector representatives draw attention to is not overlooked, and it is emphasized that it will not be a surprise that foreign sales reach 12 billion dollars if the increase rate of more than 40 percent in plastic exports in 2021 is achieved this year as well. This is supported by the data for the first four months of 2022. In January-April period of this year, the sector's exports reaching 3.549 billion dollars strengthen the expectations.

EXPORT DATA SHED LIGHT ON THE PLASTIC INDUSTRY

When the export data in the plastics industry is examined in detail, it is observed that there are positive developments in many points. While these developments shed light on the sector, they also raise hopes for the realization of the targets. When these data are taken into consideration, first of all, it is noteworthy that the value added per capita for the plastics sector is above the general average of Türkiye.

While the sector in 2019 made a gain of \$2.03 as kg price per unit, there was an increase to \$2.35 in 2021. At this point, a detail that does not go unnoticed for the sector is the kg price per unit in the first four months of 2022 increased its unit price to \$2.59...

This increase also reveals the importance that the plastics industry attaches to R&D and innovation, and the contribution it makes in this context. On the other hand, thanks to the Chemical Technology Centre, which is expected to be opened this year, this added value is expected to reach much better levels.

When country-based exports are analysed, it is promising that the foreign sales of the plastics industry are directed to developed countries. The fact that the sector is preferred in developed countries is perceived as an indicator of the development of the sector.

Accordingly, while the highest amount of exports was made to Germany with 615.7 million dollars in 2021, sales of 538 million dollars to Iraq, 511.4 million dollars to the UK, 480.6 million dollars to Israel and 446 million dollars to Italy do not go unnoticed. These countries are followed by Romania, USA, Spain, France and Egypt, respectively.

PACKAGING SECTOR RANKS FIRST IN EXPORT ON PRODUCT BASIS

When the sector is analysed on the basis of sub-groups, it is observed that the most exports in this field are plastic packaging products. The plastic packaging industry has achieved foreign sales of 3 billion 462 million dollars in 2021 with a growth of 27.87 percent compared to the previous year. This is followed by the plastic raw materials sector with an export of 2 billion 619 million dollars with an increase of 95.89 percent in the same period. Construction plastics, on the other hand, ranks third, with an increase of 30.82 percent in the same period, reaching up to 1 billion 408 million dollars in sales. In 2021, other plastic goods products will take their place in the chemical industry with an export of 809 million 332 thousand dollars by providing a 16.49 percent improvement compared to the previous year. Plastic home and kitchen products, which achieved a 30.44 percent improvement in 2021 compared to the previous year, also show foreign sales success of 613 million dollars. Plastic toys, on the other hand, create a value of 50 million 373 thousand dollars in foreign sales in 2021, when they increase their exports with a great rate of 92.87 percent. Considering the same periods, stationery products, increased by 29.61 percent, take their place in the ranking with their exports of 39 million 380 thousand dollars.

İKİMİB CONDUCTS POSITIVE WORK ON BEHALF OF THE SECTOR

While the İstanbul Chemicals and Chemical Products Exporters' Association (İKİMİB) carries out many activities in order to increase the exports of its member companies for the chemical industry, the plastics industry is among the first sectors that come to mind in this regard. İKİMİB, which organizes sectoral trade delegations, procurement committees, national participation organizations, sectoral trainings, workshops and competitions from diversification of export products to increasing competitiveness and new market targets, becomes the chief architect of the successes achieved in global markets. For the plastics industry, İKİMİB held the 'Plastic Industry Workshop' in November 2021 and the 'Plastic Recycling and Circular Economy' workshop in February 2022, as well as the 'Eurasia Packaging Fair' procurement committee and the 'K Show' in Germany next October. The '2022' fair will organize national participation organizations, as well as the 'Plast Eurasia' purchasing committee in November.

In line with its vision of developing high-tech and high-value-added domestic products, İKİMİB, which started the "Chemistry Technology Centre" (KTM) project, which will be a first in Türkiye, two years ago, will establish a brand new "Chemistry Industry Ecosystem" based on sustainability and export-oriented within the scope of this centre. Within the scope of the Chemical Technology Centre to be located in Informatics Valley;

thanks to 'International Accredited Reference Laboratory Services', 'Digital Library', 'Export Development Centre' and 'Innovation, Entrepreneurship and R&D Centre', 4 different disciplines will be brought together in one centre. In this context, both fast and reliable sample tests will be carried out with internationally accredited reference laboratory services at KTM, and exporters, especially the plastics industry and SMEs, will be paved. In addition, the entrepreneurship centre will support the discovery of high technology and high added value inventions. Here, while generating income with crowd funds, added value will be provided to the country's economy. In the digital library, all kinds of scientific publications will shed an academic light on all sectors, especially plastics.

KTM's sustainability centre will also provide mobile carbon footprint measurement service, green agreement compliance support service, and transition to circular economy consultancy services at the facilities of chemical exporters. On the other hand, at the SME Export Support Centre (KİDEM), export - intelligence support, international sectoral indexes and trends data support, international regulations and legislation support, human resources data support, and financing and logistics support will be provided. KTM will act as a technology base that will cross the threshold in exports to plastics and then to other sub-sectors of the chemical industry. Like this; along with the plastics industry in global trade, the projects that will bring the Turkish chemical industry to the fore will be undertaken.



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