İKMİB Media

Chemist

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Cosmetics industry reaches 190 countries in exports

EXPORT

İKMİB, 50 billion dollar export target with steady strides

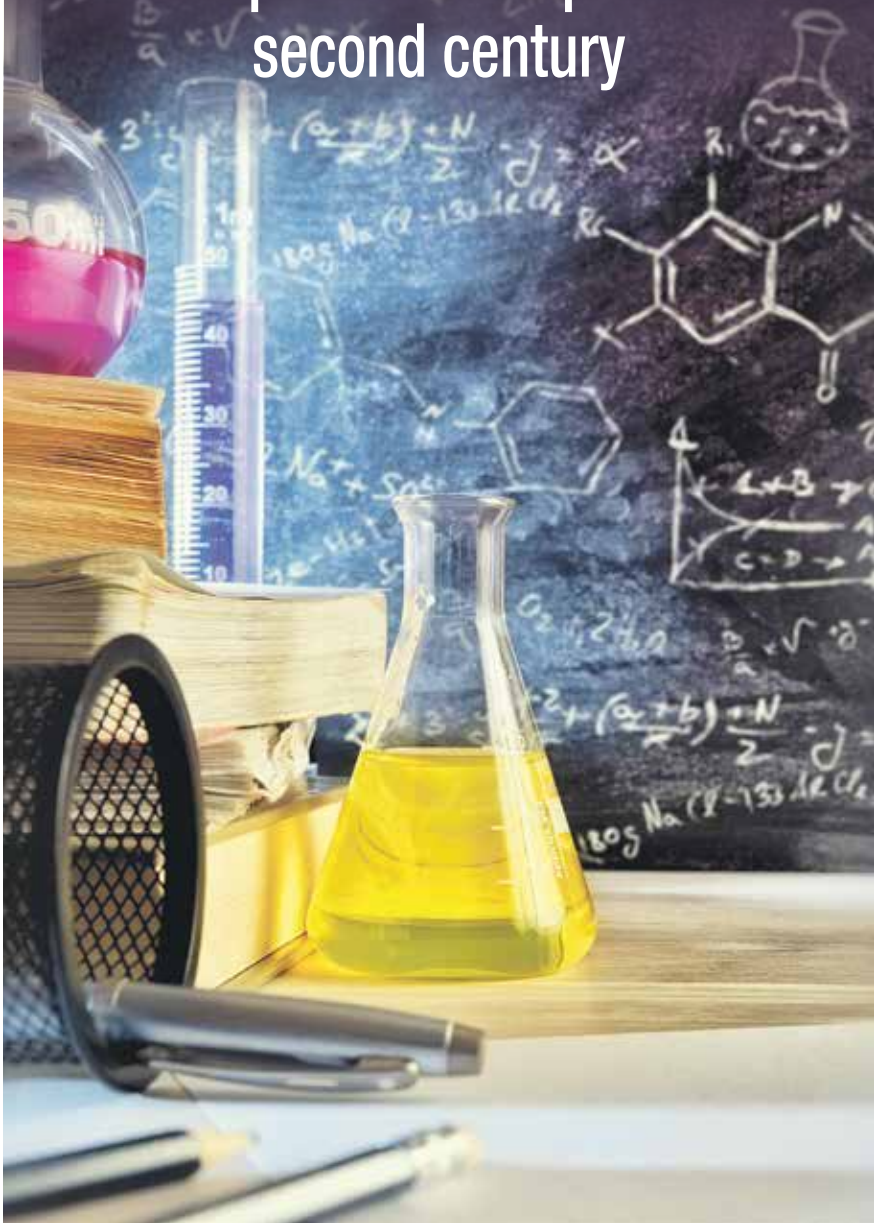
R&D

R&D efforts in Türkiye have shown promising results, but the path ahead is considerably long

ENVIRONMENT

Sustainability roadmap developed for the pharmaceutical industry

The chemical industry, a vital source of inputs for various industries, stands as a beacon of hope for the Republic's second century



İKMİB Chemist

The message of the president

LEVEL OF CONTEMPORARY CIVILIZATION

As of 2023, we have entered the second century of our Republic. In the first century, we undoubtedly achieved a lot.

Above all, in a period when a 600-year-old empire era came to an end, we built our new country on solid foundations, despite a war-weary nation.

We declared the Republic, established our industry, and built factories. Throughout the last century, we developed and grew. Undoubtedly, there were things we didn't do or failed to do. With all our strength, we will address these shortcomings in the second century.

One of the four main strategic industrial sectors of a country is undoubtedly the chemical industry. The bold entrepreneurs of our country, who have established numerous facilities, have enabled us to establish a presence in global markets.

From now on, by producing new and high-tech value-added products, we will solidify our position in global markets and expand our market share. First and foremost, we need to establish chemical industry zones that have successful examples worldwide. In these zones, we believe in operating with a strategy that encompasses the entire supply and production chain, logistics, and financial systematics from raw materials to final products.

We need to rationalize and expand our research and development activities, not just for product development, but to produce new and high-tech products.

We need to develop our petrochemical industry and require many innovations in the field of biotechnology. Developing solvent technologies that can convert rare earth elements from raw form to value-added products is of great importance.

If we can expand and develop our chemical industry, which produces raw materials and semi-finished products for all sectors and touches every sector in this aspect, it is certain that our economy will benefit positively from this growth as a whole.

As İKMİB, we will continue to work, produce, and export in this direction.

We have full confidence that in our second century, we will reach the goal set by the founder of our Republic, Mustafa Kemal Atatürk, of reaching the level of 'Contemporary Civilization.' We will achieve this together.

Because, 'Together, We Are Strong...'

Adil PELİSTER
President of İKMİB

İKMİB Chemist

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CHEMICAL INDUSTRY ACHIEVES $2.15 BILLION IN EXPORTS IN JULY

The chemical industry's exports reached $2.15 billion in July, maintaining its position as the second-largest industry in terms of foreign sales. During January-July 2023, the chemical industry achieved exports worth $16.7 billion.

According to data from the Turkish Exporters' Assembly, Türkiye's exports for the month of July increased by 8.4% compared to the same period last year, reaching $20.1 billion. The chemical industry, which was the second-largest exporter in July, recorded external sales of $2.15 billion. When examining the product groups within the chemical sector, the plastics and products sector led the chemical industry's exports with $724.17 million. Mineral fuels and products came second with $481.76 million, followed by inorganic chemicals with $191.44 million. In the top ten categories, these sectors were followed by 'volatile oils, cosmetics, and soap', 'paints, varnishes, inks, and supplies', 'rubber and rubber products', 'pharmaceutical products', 'miscellaneous chemical substances', 'cleaning supplies', and 'organic chemicals'.

Regarding export data, the top ten countries in terms of exports for July were Russia, the Netherlands, Italy, Iraq, Spain, Germany, the United States, the United Kingdom, Romania, and Belgium. Additionally, during the January-July 2023 period, the chemical industry achieved $16.7 billion in exports, with the top exporting countries being Russia, the Netherlands, Italy, Spain, Germany, Romania, the United States, Iraq, the United Kingdom, and Belgium.

Evaluating the export figures of the chemical industry, Adil Pelister, the President of the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), stated, "In July, our chemical industry became the second-largest exporter with $2.15 billion in exports. There is a 25% decline in our exports compared to the previous year. In the first seven months, our exports reached $16.7 billion. Global demand remains sluggish. The growth rate for the world economy has been revised down to 3% for this year. Commodity and oil prices related to our industry are still low compared to last year. These developments certainly have a negative impact on our sector's exports. Inflation and exchange rate balance are also important factors affecting our exports and competitiveness. Our chemical industry is 70% dependent on foreign sources for raw materials. This rate can go up to 90% for plastics and products. Thus, our need for foreign currency can be greater than in other sectors. In this regard, we, as exporters, welcomed the increase in foreign exchange rates, the removal of the obligation to convert foreign exchange in rediscount credits, and the decision to increase the capital of Eximbank to facilitate access to finance."

Turkish cosmetics and cleaning sector showcased new trends to the world

The İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), which organized a national participation organization, led Turkish companies in showcasing new trends at the Cosmoprof Worldwide Bologna fair, the world's largest cosmetics fair.

The 'International Cosmetics and Personal Care Fair Cosmoprof Worldwide Bologna', held for the 54th time this year in Bologna, Italy, attracted 2,700 companies from 70 different countries between March 16-18, 2023. Covering an area of over 200,000 square meters and hosting more than 220,000 visitors, the fair stood out as the largest cosmetics fair in the world, presenting the leading new trends in the beauty industry.

With the İKMİB's national participation organization, 22 Turkish companies represented Türkiye this year, and an additional 54 companies participated individually in the fair. A total of 76 Turkish companies participated in the fair, showcasing products in the fields of cosmetics, skincare, perfume, and cleaning. İKMİB Board Member Uğur Adıyaman and the Commercial Attaché of the Republic of Türkiye in Milan, Ozan Murat Ergan, visited the companies at the fair to convey their best wishes.

TRADE SURPLUS IN THE SECTOR

When examining sector data, it is evident that in 2022, there was $1.67 billion in exports and $1.57 billion in imports in the category of essential oils, cosmetics, and soap. The sector, which had a trade surplus last year, achieved $266.8 million in exports in the first two months of this year, indicating an increase of 18.97%. The sector, which adds significant value, maintains an average unit price of $3.09 per kilogram, which is above the average.

In the essential oils, cosmetics, and soap product category, the top three exporting countries in 2022 were Iraq with a 5.21% decrease and $142.36 million, Russia with a 68.87% increase and $138.69 million, and the United States with a 21.4% increase and $127.69 million. These were followed by Iran, the United Arab Emirates, the Netherlands, Germany, the United Kingdom, France, and Israel. In 2022, the countries with exports exceeding $1 million and the highest increase were Saudi Arabia, Cuba, and Kyrgyzstan.

In the PLMA's World of Private Label fair held in the Netherlands, Türkiye was represented by 143 companies

At PLMA's World of Private Label 2023, which is the world's largest trade fair for private label products held in the Netherlands, 82 Turkish companies participated under the national participation organization of the İstanbul Chemicals and Chemical Products Exporters' Association. In total, there were 143 Turkish companies in attendance.

Organized within the scope of the national participation organization of the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), a total of 143 Turkish companies participated in the world's largest private label products sector fair, PLMA's World of Private Label 2023, held in the city of Amsterdam, Netherlands, on May 23-24, 2023. This year, with İKMİB's national participation organization being organized for the thirteenth time, 82 companies participated collectively, and 61 participated individually. Participating companies from various sectors including cosmetics, personal care, cleaning, pharmaceuticals, plastics, packaging, and food had the opportunity to showcase their products to visitors.

T.C. Ambassador to The Hague, Selçuk Ünal, T.C. Consul General in Amsterdam, Mahmut Burak Ersoy, Deputy Commercial Counsellor in The Hague, Aşkın Pekel, İKMİB Vice Chairman of the Board, İmer Özer, and İKMİB Board Member, Uğur Adıyaman, visited the companies at the fair and extended their best wishes for success.

Commenting on the strong presence of Turkish companies at the fair, İKMİB Vice Chairman of the Board, İmer Özer, stated, "In 2022, while the country's market for private label products reached a turnover of 200 billion TL, Türkiye also has a significant export volume in the private label sector. In Europe, the share of the private label sector in fast-moving consumer goods is over 40%, while in Türkiye, it is around 29%. Since we still have a long way to go, we organized a productive and successful fair that contributes to the share of the private label sector both domestically and in exports. Every year, the demand for the fair is increasing. We thank all our participating members. As İKMİB, we support activities that contribute to the export of the private label sector, and we will continue to increase the export of the private label sector on this path," he said.

For the first time, the 'Cosmeet Asia Sectoral Trade Delegation' was organized in the Philippines

For the first time, the 'Cosmeet Asia Sectoral Trade Delegation' was held in the Philippines, focused on increasing its presence in the cosmetic and cleaning sector. Organized by the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), 18 Turkish companies participated in the trade delegation, presenting their brand strength.

The İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), which always aims to increase exports in foreign markets, organized the 'Cosmeet Asia Sectoral Trade Delegation' for the first time in the Philippines, covering the cosmetic and cleaning sectors. The trade delegation, held between June 6-8, 2023, was led by İKMİB Board Member Uğur Adıyaman. On the first day of the event, as part of the retail tour, chain stores were visited for market research purposes. The second day featured an informative meeting about the market with the participation of T.C. Manila Commercial Counselor Serhan Ortaç and local experts.

In the trade delegation, a total of 44 companies, including 18 from Türkiye, conducted 266 bilateral business meetings over two days to explore new collaboration opportunities. During these meetings, Turkish companies engaged with buyers and suppliers from three different Asian countries, namely the Philippines, Vietnam, and Indonesia. İKMİB President Adil Pelister, who evaluated the 'Cosmeet Asia Sectoral Trade Delegation' event, stated that they conduct various activities to enable their member companies to enter the global market and increase exports.

EXPORTS TO THE PHILIPPINES IN THE SECTOR ARE INCREASING

Pelister said, "As part of the Cosmeet Asia Sectoral Trade Delegation, we brought together 18 Turkish companies and 26 Asian buyers in the Philippines. Among the countries included in the Ministry of Trade's 'Distant Countries Strategy,' we organized a trade delegation to the Philippines for the first time in the field of cosmetic and cleaning products. We believe that the delegation will also be beneficial for initiating and enhancing commercial relations with neighboring countries. Looking at the exports of the cosmetic and cleaning sector to the Philippines, we observe a growing momentum. In 2022, the cosmetic and cleaning sector achieved $1.37 million in exports, reflecting a 14% increase compared to the previous year. In the first five months of this year, the sector's total exports increased by 77% to reach $1.14 million. The total exports of our chemical industry to the Philippines reached $21.2 million in 2022, reflecting a 22.17% increase. We see a significant market for our cosmetic and cleaning sector in Asian countries. Diversifying export markets is essential for sustainable exports, and as İKMİB, we will continue to support our sector."

Export of packaging sector increased by over 50% in the last five years

The President of İKMİB, Adil Pelister, who visited the Interpack 2023 fair, known as the most important fair for the packaging sector worldwide, stated that the Turkish packaging sector, including related industries, has increased its exports by over 50% in the last five years.

Interpack 2023, the most important international fair for the packaging sector and its related sub-industries, took place in Germany from May 4th to May 10th, 2023. A total of 293 companies from Türkiye attended the fair, with 47 participating through the national organization of the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB) and 246 attending individually. The fair also hosted more than 2,700 participants from many countries.

The Consul General of the Republic of Türkiye in Düsseldorf, Ayşegül Gökçen Karaarslan, the Commercial Attaché of the Republic of Türkiye in Düsseldorf, İrem Ekmekci Konuk, the President of İKMİB Adil Pelister, İKMİB Board Members, and TIM Delegates visited participating companies at the fair, offering their best wishes. Evaluating the fair, which featured leading companies in the sector on a global scale, Pelister stated that Turkish companies showcased their state-of-the-art products to buyers at the Türkiye stand, covering a total area of 1,100 square meters. Pelister said, "The fair, which highlights issues such as circular economy, resource conservation, digital technology, and product safety, witnessed strong interest in Turkish companies and products. As the Turkish chemical industry, we place great importance on sustainability and the circular economy, and we continue our efforts in this direction. İKMİB is always on the side of our exporters to increase both the sector's and the country's exports. We believe that this fair will make a significant contribution to exporters operating in the packaging sector."

Pelister also emphasized that the Turkish packaging sector is a sector that provides a trade surplus and added, "Our sector, which has shown an increase in exports every year, has increased its exports by over 50% in the last five years. In 2022, the packaging sector achieved exports of $7.1 billion, with an increase of 14.7% compared to the previous year. While the sector had a foreign trade surplus of $2.6 billion in 2022, the largest share in this field belonged to the plastic packaging sector with 75% and $1.96 billion. In 2022, the plastic packaging sector, which accounted for 56% of the total packaging exports, achieved approximately $4 billion in exports. Paper and cardboard packaging followed with exports of $1.8 billion, and metal packaging with exports of $585.6 million. In 2022, the top ten countries with the highest exports in the plastic packaging sector were the United Kingdom, Germany, Israel, the United States, Iraq, Italy, Spain, Poland, the Netherlands, and Romania."

Arab Health Fair brings together medical and pharmaceutical industries

Attended by 180 Turkish companies, the Arab Health Fair, the largest event for the medical and pharmaceutical industries in the Middle East, provided an opportunity for these companies to showcase their products. The Turkish products became the center of attention for visitors among the three thousand participating firms.

Taking place for the 48th time in Dubai, United Arab Emira-tes, from January 30th to February 2nd, 2023, the Arab He-alth Fair brought together the medical and pharmaceutical sectors. With the participation of 45 companies through the national participation organization organized for the fourth time by the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), and 135 companies individually, a total of 180 medical and pharmaceutical firms represented Türkiye at the event. With a country stand covering 666 square meters, Türkiye was among the three thousand par-ticipating companies at the Arab Health Fair, which was visited by tens of thousands of people. At the fair, which created opportunities for new markets, foreign buyer rep-resentatives showed interest in Turkish products.
The exporting firms operating in the health, medical, and equipment sectors had the chance to introduce a wide ran-ge of products such as medical devices, supplies, hospital furniture, surgical equipment, orthopedic products, drugsand software products. The Turkish Consul General in Dubai, Mustafa İlker Kılıç, T.C. Dubai Trade Attachés Ersoy Erbay and Hacı Hasan Kaygısız, İKMİB Vice Chairman Tayfun Demir, and İKMİB Pharmaceuticals Sector Committee Chairman Ahmet Altuğ Oğuz visited the fair and conveyed their best wishes to Turkish company representatives. Furthermore, İKMİB Board Members Mustafa Mertöz and Sevim Öztaşkın, İKMİB Board Consultant Orhan Mutlu Topal, and İMMİB Deputy Secretary General Aydın Yılmaz attended the fair and highlighted the importance of the organization.

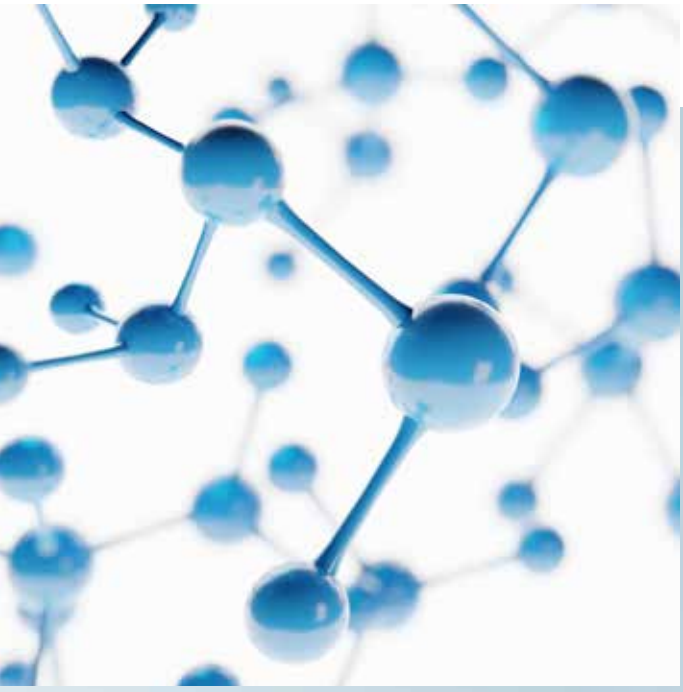
İKMİB President Adil Pelister, commenting on the Arab He-alth Fair, stated, "The medical product and pharmaceuti-cal industries are not only developing but also becoming flawless suppliers of health services to millions of people around the world. Turkish medical products stand out in the global market with their high production capacity, product quality, advanced technology, and competitive prices. Our pharmaceutical industry, with its long-standing experien-ce in manufacturing areas that meet international quality standards and its PIC/S membership, strengthens its posi-tion. The Middle East market is among our target markets for medicine, pharmaceuticals, and health tourism. From this perspective, we have included activities to increase exports, including trade fairs and trade missions, in our calendar. In addition to Arab Health, we will continue to participate in international fairs such as AEEDC and IDS."

The chemical industry, which provides inputs to many industries, will be a hope for the Republic's 2nd Century

In the grand scheme of Türkiye's development preparing for the Republic's second Century with ambitious goals, the chemical industry will play a leading role. This is because the development of the chemical industry, which provides raw materials, intermediate goods, or inputs to many industries, will form the foundation of Türkiye's growth.

Türkiye will greet the Republic's second Century as of October 29, 2023. Setting significant goals in every field for the new century, Türkiye envisions being among the leading countries in the global economy. To achieve these goals, the country needs to progress collectively in production, branding, exports, and every other area. The roadmap created for these goals will prominently feature the chemical industry, leading transformative initiatives that will shape the Republic's second Century.

As we know, about a decade ago, targets were set for the Republic's 100th year, including $500 billion in exports, becoming one of the world's top 10 economies, capturing 1.5% of global trade, and more. Although these goals have not been met by today, there's a plan to surpass these expectations in the medium term within the new century. With the new vision and goals to be established for the Republic's second Century, Türkiye will work towards rapidly elevating itself to the level of developed countries. In these efforts, the chemical industry will also play a significant role. In 2022, the chemical industry achieved export leadership among all industries with $33.6 billion in external sales. Particularly in exports, the chemical industry has demonstrated high growth performance in recent years. According to data from the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), it increased its external sales by 38.79% in 2021, reaching $25.482 billion. In 2022, with a growth rate of 31.88%, the chemical industry reached exports of $33.6 billion. For this success to be sustained, İKMİB, which sets new goals, aims to reach $50 billion in exports by 2030. For the chemical industry to maintain its leadership and achieve its goals, innovation and improvements in various areas are essential. In this context, to ensure the sustainable success of the chemical industry and position it as the



leading industry of the Republic's 2nd Century, it needs to strengthen its existing infrastructure and production functions. In light of this, important representatives of the chemical industry share their valuable perspectives on the future roadmap that needs to be followed.

THE ROADMAP IS KNOWN, STAYING ON COURSE IS ESSENTIAL!

The Republic's 2nd Century brings significant goals not only for the chemical industry but also for other sectors. However, the chemical industry has a unique position in this regard. It serves as a supplier of raw materials, intermediate goods, and inputs to nearly all industries. In other words, the production and development of the chemical industry are crucial to nurturing all sectors, thereby shaping the national economy. The development of chemistry is therefore of great importance to the growth of all industries and ultimately to the progress of the country. To this end, the roadmap shared by industry representatives is composed of well-known headings. Yet, it emphasizes the need to stay on this roadmap and promptly progress towards the objectives.

Among the key points highlighted by sector representatives is R&D. While advocating for setting higher targets for R&D, the focus is on understanding what needs to be done, especially to access high-tech products. The importance of focusing on value-added products is emphasized, along with discussions about the processes that need to be followed in this regard. Another path to reaching the goals is through a qualified workforce. Insights into what needs to be done in this area are also shared by industry representatives. Another crucial topic is climate change and environmental concerns, which have been at the forefront of the global agenda in recent years. The roadmap underlines the importance of sustainable efforts in these areas, and sector representatives delve into the details of achieving success in these aspects.

PREPARING THE CHEMICAL INDUSTRY FOR THE FUTURE

For the chemical industry to differentiate itself in production and elevate its exports, it is imperative to first enhance its research and development (R&D) efforts and highlight innovative products. In addition, a focus on various aspects ranging from human resources to environmentally-friendly products, endeavors to increase added value, collaborations, technology, and digitalization is essential.

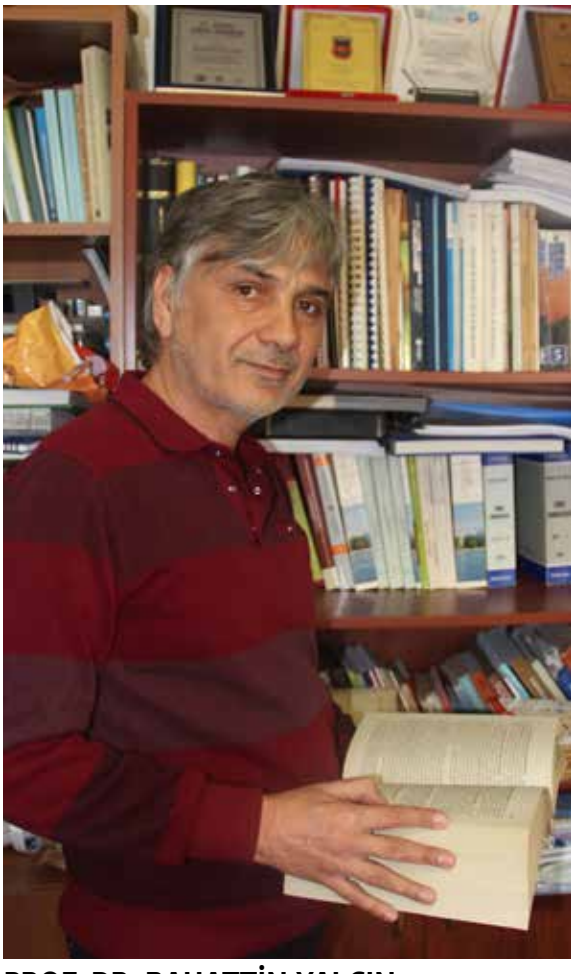
The chemical industry is poised to play a significant role in the development of our nation in the second Century of the Republic. Notably, the chemical industry contributes to the production of pharmaceuticals and chemicals used in numerous fields, from agriculture to healthcare. Furthermore, the processing of natural resources like petroleum and natural gas into products through chemical processes is also carried out by the chemical industry. This situation can potentially allow Türkiye to utilize its natural resources more efficiently. Chemistry, besides these aspects, can also play a pivotal role in the development of renewable energy sources. Chemical substances can assist in the advancement of renewable energy technologies such as solar panels and fuel cells.

Now, it is worth considering how the chemical industry can sustain its success and enhance its added value in the second Century of the Republic. Primarily, the chemical industry demonstrated its potential contribution to our country through its export champion achievement in 2022. Henceforth, measures should be taken to ensure the sustainability of this achievement and to implement the necessary strategies. Strategies that could propel the chemical industry forward and boost exports might include:

Development of Innovative Products: The chemical industry should consistently develop new and innovative products, enhancing the quality and performance of existing ones. This not only increases customer satisfaction but also expands the volume of exports.

Compliance with International Standards: Ensuring that chemical industry products meet international quality standards is crucial. This step enhances customer satisfaction and fosters competitiveness in exports.

Enhancement of Marketing Activities: Improving marketing efforts for products will expand the global customer base. Utilizing digital marketing techniques can help the chemical industry reach customers worldwide.



PROF. DR. BAHATTİN YALÇIN
President of the Turkish Chemical Society
Faculty Member of Chemistry Department of Marmara Universtiy Science Faculty

Establishment of Overseas Production Facilities: Opening production facilities abroad can lead to faster and more cost-effective product delivery to customers. Additionally, this enables the development of products compliant with different countries' regulations.
Development of Logistics Infrastructure: By enhancing logistics infrastructure, the chemical industry can reduce export costs and facilitate quicker delivery of products to customers.
Sustaining Competitive Advantage: Prioritizing customer satisfaction is essential for maintaining a competitive edge in the global market.
In addition to these general approaches, various aspects must be addressed for the future of the chemical industry, including R&D, skilled human resources, environmentally-conscious production, and sustainability. These can be defined as follows:

PRIORITIZING R&D AND INNOVATION

For the chemical industry to differentiate itself in production and elevate its exports, it is imperative to first enhance its research and development (R&D) efforts and highlight innovative products. These innovative products can target sectors that the chemical industry serves, such as automotive, defense, agriculture, and healthcare. Furthermore, the development of sustainable and green chemical products can increase exports due to growing global demand.
In this context, the chemical industry must significantly increase its R&D efforts and corresponding production initiatives. This includes not only enhancing product quality, efficiency, and environmental sustainability but also paving the way for competitive exports. Both the public and private sectors must take various steps to achieve this. Specifically, the private sector can benefit from tax incentives, support, and financing opportunities that facilitate R&D efforts. Moreover, expanding trade agreements and markets can lead to increased exports.
Collaborations are crucial for radical advancements in R&D, innovation, and design, as well as production-oriented endeavors. Partnerships with organizations and universities from diverse sectors should be established, and encouraging the sharing of information should accelerate the realization of innovative projects.

To achieve breakthroughs in R&D, innovation, and design-oriented projects, it is crucial to foster a culture of risk-taking. This culture enables companies and organizations to undertake the necessary risks to implement innovative projects, thus advancing towards their goals. Furthermore, the utilization of technology in R&D efforts should be significantly increased to expedite production-oriented phases.
Alongside these strategies, enhancing industrial research, commercializing intellectual property rights, promoting entrepreneurship, elevating the innovation index, incentivizing postgraduate student involvement

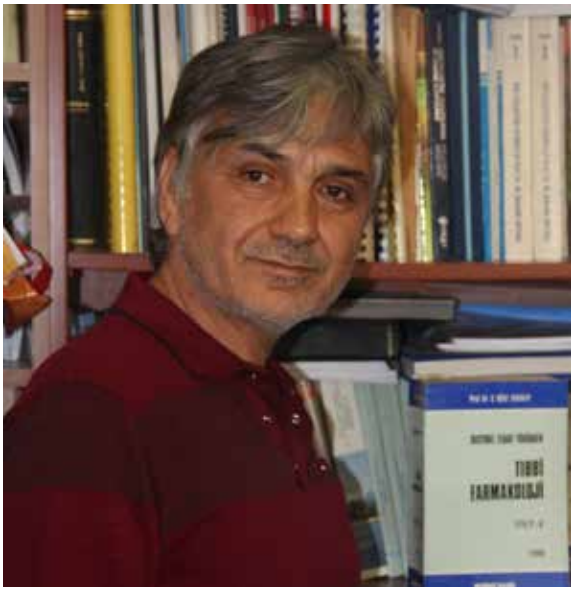
in industrial research, and strengthening collaboration between industry and universities are all vital steps in the realm of R&D, innovation, and design. Additionally, models can be developed to address industrial needs by utilizing university research centers and laboratories without requiring substantial investment in R&D infrastructure by companies. This approach enables universities to conduct R&D tailored to industrial needs and contribute to the practical realization of research projects.

ACHIEVING GOALS WITHOUT INCREASING VALUE-ADDED IS CHALLENGING!

One of the aspects the chemical industry must address to attain its objectives in the 2nd Century of the Republic is to increase its value-added contribution. In this regard, it is prudent to recall the path of research and development (R&D). Following R&D, it is essential not to overlook the necessity of investing in high technology. Sectors within the chemical industry can generate high-value products by investing in high-tech products. This enhances competitiveness while elevating their added-value. Achieving this goal involves focusing on digitalization to enhance production processes and operational efficiency. Furthermore, competitiveness should be a focus to enhance value-added. Sectors under the chemical industry umbrella should improve product quality to be competitive in exports, enhance marketing activities, and expand into new markets to elevate value-added. Moreover, collaborating with different sectors can stimulate the development of novel ideas and technologies, fortifying the sectors' and firms' ability to enhance added-value, competitiveness, and innovation capability.

CHEMISTRY'S ENVIRONMENTAL APPROACH COULD BE THE WORLD'S RESCUE

Scientific discourse indicates that the Earth's average temperature has increased over the past century, with evident environmental challenges. To mitigate environmental impacts, it is imperative to evaluate these effects while minimizing them. Design systems, processes that are more efficient in material and energy use, constitute the first step towards minimizing these environmental impacts. The widespread use of biorefineries can facilitate the transition to sustainability within society by altering the use of renewable materials. Paving the way for greener, safer, and more sustainable production processes from laboratories to industrial sites can



potentially lead to chemistry becoming the world's salvation.

Moreover, the Turkish chemical industry has taken significant strides in aligning with environmentally-friendly production. These steps include the utilization of technologies that decrease the environmental impact of production processes, waste reduction and recycling, implementation of environmental management systems, and the adoption of renewable energy sources. Although the Turkish chemical industry has taken significant steps toward aligning with environmentally-friendly production, it must exert further efforts to comply with the rules of the EU Green Deal. Achieving this involves increased investment in technological innovations, environmentally-friendly production methods, waste management, and recycling practices, as well as collaborations with non-governmental organizations, academic institutions, and the private sector.

QUALIFIED HUMAN RESOURCES ARE INDISPENSABLE TO THE CHEMICAL INDUSTRY

The chemical industry must invest in the education system and job opportunities within the sector to secure a qualified workforce. In this context, the number of education programs tailored to industries such as chemistry and chemical engineering should be increased, and investments in these programs should be augmented. Additionally, training and development programs should be organized to enhance the qualifications of employees. These initiatives enhance

employees' skills and competencies, thereby bolstering sectoral quality and productivity.

The chemical industry should also raise awareness among young individuals about the sector and present career opportunities. To this end, collaboration with educational institutions, offering internships, and providing employment opportunities to graduates are vital. A qualified workforce will significantly contribute to global competitiveness.

On the topic of education, I would like to share some observations:

For example, I observe that certain critical aspects of industry, such as production cost and efficiency, are not extensively covered in university curricula. Students should also develop themselves in these areas.

Another observation is that students should familiarize themselves with recent environmental, transportation, and occupational safety regulations in the chemical industry (Seveso Directives, REACH, CLP, ADR, etc.). Additionally, a solid grasp of general and industry-relevant concepts like rheology and viscosity is crucial, and those involved in quality control should be knowledgeable about Instrumental Analysis Methods, alongside those working in Quality Assurance who should be well-versed in ISO Quality and Environmental Standards; those engaged in the pharmaceutical sector should be acquainted with GMP (Good Manufacturing Practice).

"In order to take radical steps in R&D, innovation, and design fields, as well as to drive production-oriented efforts, fostering a culture of embracing risk is imperative. This culture will facilitate companies and organizations in undertaking the necessary risks to bring innovative projects to fruition."

"In the second Century of the Republic, the chemical industry must ensure sustainability to achieve its development and goals. To achieve this, an investment environment should be established, focusing on large-scale strategic investments in sectors such as petrochemicals, plastics, composites, and advanced materials"

THE CHEMICAL INDUSTRY MUST ENSURE SUSTAINABILITY!

In the second Century of the Republic, the chemical industry must ensure sustainability to achieve its development and goals. To achieve this, an investment environment should be established, focusing on large-scale strategic investments in sectors such as petrochemicals, plastics, composites, and advanced materials. Additionally, alongside silicon, production efforts should commence for graphite, carbon, and allotropes (diamonds, carbon nanotubes, graphene, carbon nanofibers) that support the production of other advanced technology products. Plans or incentives should be established for the production of future-oriented and advanced technological boron compounds, as well as the production of titanium, a primary element in nanotechnology with numerous new applications, especially nano-crystalline titanium dioxide, gold, and gold nanoparticle production sets. These productions will not only contribute to the advancement of Türkiye's high-value advanced technology production but also serve as the key for the chemical industry to attain sustainability and ascend to a higher level from its current state.

In this context, I would like to highlight the following steps:

Adaptation to Green Chemistry Approach: The chemical industry should embrace the principles of green chemistry by reducing the use of environmentally harmful substances in production processes, utilizing eco-friendly and renewable resources, and minimizing waste.

Setting Zero Waste Goals: The chemical industry should set goals for minimizing waste in production processes. Improving recycling processes and promoting waste reuse should be central to these efforts.

Enhancing Energy Efficiency: The chemical industry should invest in renewable energy sources to decrease energy consumption and improve energy efficiency in production processes.

Sustainable Product Design: Product design should prioritize the use of materials that minimize environmental impacts. This will reduce the environmental footprint of chemical industry products.

Collaboration with Partners and Stakeholders: To achieve sustainability goals, the chemical industry should collaborate with non-governmental organizations, academic institutions, suppliers, and customers.

Compliance with Regulations: The chemical industry should adhere to environmental regulations and international agreements. These regulations and agreements play a crucial role in defining responsibilities for environmental impacts and promoting sustainable production.

CHEMICAL INDUSTRY READY TO CREATE SIGNIFICANT OPPORTUNITIES IN OUR COUNTRY

The chemical industry takes a prominent position as a sector harboring great potential in our country. One of the most significant indicators is that the chemical industry ranked first among exporting industries in the year 2022.

In today's world, new products primarily emerge from two fields of science: chemistry and information technology. While information technology lies beyond the scope of our discussion, chemistry has been the foundation of numerous sciences for hundreds of years and also serves as the primary supplier for many technologies. Among these, we find various fields of science, notably biochemistry and material science. Chemistry also underlies many technological sectors such as automotive, space technologies, construction, food, electronics, and household goods. The science essentially responsible for elevating the living conditions of societies to their current state is chemistry.

In this context, substantial and crucial advancements are anticipated from the field of chemistry today, perhaps even greater than in the past. The foremost among these expectations, with vital importance, pertains to sustainability. Regarding sustainability, we consider technologies based on chemistry in two distinct categories. The first involves designing new materials for equipment used in alternative energy production. For instance, we can point to electrode coatings used to enhance the efficiency of lithium-ion batteries, solid electrolytes, and polymer coatings allowing the use of silicon in anodes. In the solar energy field, reducing costs and increasing efficiency are both significant tasks. Similarly, hydrogen production and utilization from a chemical technology perspective are particularly noteworthy. Another subject falling exclusively within the scope of chemistry technology is preventing icing on the blades of wind turbines—a critical task in the energy context. All of these objectives are of paramount importance for enhancing the efficiency of alternative energy technologies, contingent upon the outputs of chemical science. In the context of sustainability, the second crucial technological domain is associated with the raw materials we use. Sustainability necessitates halting the production and usage of fossil fuels. This requirement extends not only to energy production but also to the inputs used in chemical production. Therefore, it is essential to produce inputs from biologically derived renewable raw material sources that will replace petroleum derivatives in forms suitable for chemical production (2). This represents a profound transformation and calls for significant modifications to chemical production technologies. It's a challenging task that demands boldness.

ENGİN ÇÖRÜŞLÜ
President of the Chamber of Chemical Engineers of TMMOB

SUSTAINABLE CHEMICAL INDUSTRY IN THE SECOND CENTURY OF THE REPUBLIC!

Starting from October 29th this year, we will enter the second century of our Republic. In the second century, we cannot discuss the developmental trajectory of our chemical industry, what needs to be done to progress, without considering the context we have outlined above.

The chemical industry in our country holds a prominent position as an industry with high potential. One of the most significant indicators is that the chemical

industry ranked first among exporting industries in the year 2022. On the other hand, another detail contradicting this indicator is the trade deficit of the chemical industry. Simultaneously excelling in exports while being among the industries with the highest trade deficit poses a contradiction. To achieve sustainable growth, we must understand why we are facing a trade deficit and take measures to address it. Investigating and comprehending this issue are vital for sustaining and increasing our exports.

A highly scientific study conducted in 2022 delved into the international competitiveness of the chemical industry across various subsectors (3). According to the research conducted by Murat Ozan Başkol using the Standard International Trade Classification, out of the 33 sectors within our chemical industry, only 5 of them align with the definition of net export sectors with comparative advantage (4). Likewise, the same study found that 3 subsectors (5) were in the position of net importers with comparative advantage, one subsector was a net exporter without comparative advantage, and 24 subsectors had neither comparative advantage in exporting nor importing.

There is an evident need to establish a strategy encompassing all subsectors of the chemical industry. Such a strategic effort has been undertaken by İKMİB (İstanbul Chemicals and Products Exporters' Association), and the findings have been detailed in the 'Turkish Chemical Industry Investment Prioritized Products Report' (6). The report highlights that producing the featured products domestically would significantly reduce the sector's external dependence, in other words, the trade deficit. Out of the 103 products listed, 98 are included in the 'Technology-Oriented Industry Initiative Program' led by the Ministry of Industry and Technology (7).

Another noteworthy aspect highlighted by Murat Ozan Başkol's research is that certain subsectors and products undergo shifts over time in the competition advantage map. Understanding the dynamics, both internal and external, of losing or gaining competitiveness is crucial for anticipating potential shifts on the competitiveness scale in the future. Therefore, it is beneficial to continue and periodically update the kind of study initiated by the esteemed researcher Murat Ozan Başkol.

CLIMATE AND ENERGY CRISIS SOLUTIONS TO PROVIDE ADDED VALUE

On the other hand, among the products identified by İKMİB and accepted by the ministry, those products that offer solutions to global issues such as climate crisis and energy challenges will stand out particularly in terms of competitive advantage. Nowadays, sustainability has become vital not only as a citizen's responsibility but also in the context of global competitiveness. Products addressing issues closely related to sustainability, such as climate crisis, energy crisis, and the transition of raw material resources to bio-material basis, will also be classified as high-value-added products. Therefore, it would be beneficial to review

these products in suitable platforms, such as the Chemical Industry Platform, in terms of compliance with sustainability criteria.
In the formulation and implementation of the adopted strategy, collaboration between representatives from the relevant public sector and the private sector is essential. These sectors should not take opposing stances and should not wait for each other to act. A panel consisting of representatives from both sectors and all relevant parties (including İKMİB, the ministry, university researchers in these fields, the Chamber of Chemical Engineers, the Turkish Chemical Industry Association, the Association of Chemists, and other relevant NGOs) should be established. This panel, which could be named something like the 'Türkiye Chemical Industry Sustainability Control Panel,' should create strategies for transforming negative indicators on the competitiveness scale into positive ones in the short, medium, and long term. Indicators related to sustainability must be incorporated into the competitiveness scale.
A common observation arising from previous examinations is that a small portion of the fundamental inputs and a significant portion of bulk raw materials in the chemical industry are produced locally. Presently, 70% of the chemical industry's raw materials are imported. According to İKMİB, when local production of specific products is achieved, our chemical substance imports will decrease by around 21 billion dollars (8). In this context, we believe that it is necessary for the public sector to produce low-value, large-scale, and high-investment essential inputs. Furthermore, we suggest considering the involvement of private sector clusters for large-scale investments required for the production of certain intermediate inputs.

"In today's world, sustainability has gained vital importance not only within the context of citizen responsibility but also in terms of global competitive strength. Products that offer solutions to issues closely related to sustainability, such as the climate crisis, energy crisis, and the transition of raw material resources to bio-material basis, will also find their place among high-value-added products."

"R&D, whether conducted in the industry or academia, demands both highly qualified human resources and advanced laboratory infrastructure. Innovation, or more commonly referred to as innovation, requires understanding the characteristics and limitations of existing products and production processes on a global scale."

IT DOESN'T WORK WITHOUT R&D!

The low competitiveness of most subsectors in the chemical industry in Türkiye and their net trade deficit is partly due to the fact that the majority of the manufactured products remain at a low or medium technological level. The transition from low to high technology undoubtedly hinges on innovation and R&D... Following the enactment of the central R&D legislation in 2008, R&D centers began to be established in our country (9). However, the desired outcome of producing high-value-added products through R&D centers has not been fully achieved yet.
Whether conducted in industry or academia, R&D requires both highly qualified human resources and advanced laboratory infrastructure. Innovation, or commonly known as innovation, necessitates an understanding of the characteristics and limitations of existing products and production processes worldwide. Therefore, individuals who have undergone rigorous scientific training and possess the required knowledge are essential to R&D centers. The formulation of research and development strategies and work plans in R&D centers requires knowledge, expertise, and foresight. Research is risky in many respects. Not every research effort will yield positive results. Some research projects have a higher likelihood of failure, in other words, not yielding positive outcomes. Nonetheless, R&D centers should include such risky projects in their work. This is because if high-risk projects succeed, their returns are substantial. The majority of work in R&D centers revolves around product maintenance, product modification, developing the same product for different applications, and process improvement. This is entirely natural. However, allocating approximately 15% of the resources of R&D centers to projects that are highly risky and, in other words, involve low technological readiness is critical. The most significant advantages and competitive strengths for companies lie in such projects.

EDUCATIONAL SYSTEM SHOULD BE RE-EVALUATED

The training of R&D personnel is a societal education matter in itself. Our education system needs to be re-evaluated from preschool to university education and postgraduate education. Above all, all education must be based on critical thinking and science. The recent educational approach in our country, which emphasizes conformity and is based on memorization without comprehension, is detrimental to innovation efforts. Not everyone is trained to be an R&D profes-

sional, but the research identity should be cultivated in students from a very early age. Research, or the act of being a researcher, is a matter of attitude and perspective. Individuals engaged in scientific research are expected to be interested in fine arts and the philosophy of science as well. Being innovative requires being versatile, thinking multidimensionally, having the courage to deviate from the herd, adopting a marginal perspective, and displaying the courage to think (10). Researchers should be able to freely discuss ideas in open environments and think outside established paradigms.

How is this possible? Despite their diverse structures, R&D centers are not entirely separate from the corporate culture, and they are not isolated like an 'island' from the corporate culture. Thus, we cannot view R&D culture as entirely independent of the general corporate culture. On the other hand, it is necessary for top-level executives of companies, especially R&D managers, to gain knowledge and experience in research management. Companies managed by executives who are unfamiliar with the character, unique structure, operations, mindset, and working style of R&D have a low probability of producing competitive products. There is a common expression for R&D management: "Managing the Unmanageable" (11).

(1) "Hydrogen in Energy Transformation," Chamber of Chemical Engineers of Türkiye (TMMOB Kimya Mühendisleri Odası), December 2022, Ankara.

(2) https://www.ncbi.nlm.nih.gov/books/NBK232951/

(3) Başkol, Murat Ozan (2022). "International Competitiveness of the Turkish Chemical Industry and Product Mapping." Journal of Economy, Politics & Finance Research, 2022, 7 (Special Issue): 81-105.

(4) The products in this group include soaps, cleaning and polishing products, salts of oxy and peroxymetallic acids, compounds of precious metals, plastic tubes, pipes, hoses, plastic sheets, films, foils, plates, and plastic monofilaments, rods, and profiles.

(5) Synthetic organic colorants, pigments, varnishes, paints, and polyacetals, as well as other polyethers and epoxy resins, are included in this category.

(6) İKMİB, ,2021 https://chemlife.com.tr/ikmib-kimya-sektorune-yatirim-yapmak-isteyenlere-pusula-olacak

(7) Başkol, Murat Ozan, ibid.

(8) İKMİB, ibid.

(9) https://www.mevzuat.gov.tr/mevzuatmetin/1.5.5746.pdf

(10) Sapere aude, Quintus Horatius Flaccus, 20 BC, Epistles Book 1, No. 2, Line 40

(11) Managing the Unmanageable: Rules, Tools, and Insights for Managing Software People and Teams-2nd Edition, by Mickey W. Mantle and Ron Lichty.

CHEMISTRY, THE FUTURE OF INDUSTRY!

The significance of the chemical industry in our country has been recognized albeit belatedly, and it has been declared a priority sector. While the chemical industry has become the leading sector in exports, it still continues to be the largest contributor to the negative trade balance. To address this deficit, it is crucial to emphasize the importance of producing "intermediate input chemicals" with high added value by utilizing medium and high technology.

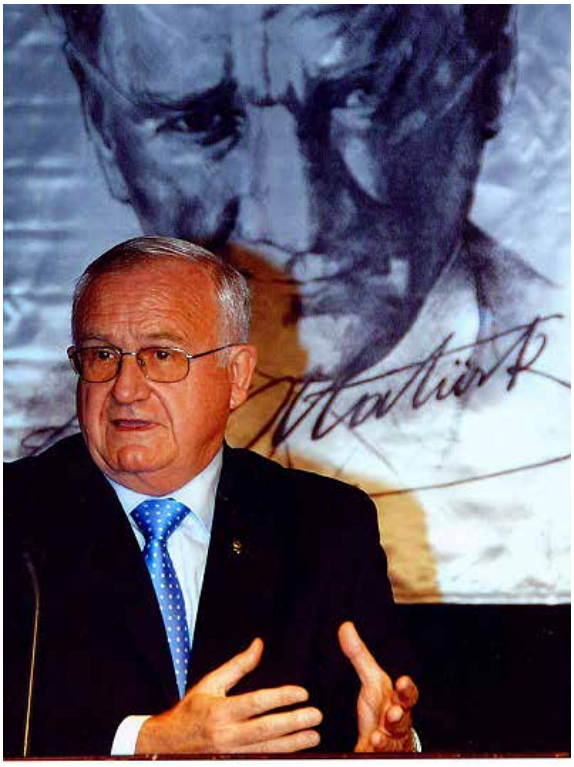
In 2022, the chemical industry achieved remarkable success, securing the top position in exports among all industries. However, maintaining this championship in a period where our Republic steps into its second Century is no easy task. To sustain this leadership for an extended period, it is essential to continue working on the factors listed below:

- Improving the investment environment
- Facilitating access to financing
- Eliminating excise tax on essential raw materials
- Removing the obligation to convert export revenues
- Revamping and enriching the customs union
- Addressing existing discrepancies with EU regulations in technical legislation
- Accelerating the VAT refund process
- Identifying strategic chemicals with high added value for investment (limited to a maximum of 30)
- Ensuring inter-agency collaboration and coordination
- Reestablishing the State Planning Organization
- Enhancing the quality of chemical engineering education
- Addressing deficiencies and insufficiencies in branch vocational schools
- Promoting clustering, allocating investment sites, utilizing the government's landlord model
- Implementing special incentives for the production of intermediate input chemicals
- Enhancing the effectiveness of performance measurement and supervision in R&D incentives
- Ensuring that the manufacturing sector provides greater support than the service sector
- Providing machinery and equipment grants to new investors focusing on the production of medium and high-tech, high-value-added products, similar to the South Korean model.

To increase added value:

- Utilizing medium and high technology
- Providing 6th Region incentives to investors producing intermediate input chemicals with a unit price above $3 per kg, which are entirely imported
- Listing and providing special incentives for high-value-added raw materials and intermediate chemicals that are not yet produced in our country

Innovation, research and design should be subject to closer scrutiny, performance measurement, and monitoring, with increased support but fewer incentives for research, development, innovation, and design centers.



TİMUR ERK
President of TOBB Chemical Industry Council

The chemical industry is a capital and technology-intensive sector, making employment secondary. Therefore, models should be devised to educate highly competent and skilled human resources, focusing on the training of individuals with effective and competent human capital, akin to the Finnish model. Simultaneously, education models that provide qualified intermediate human resources and specialization in various fields need to be developed.

WHAT WILL THE CHEMICAL INDUSTRY LOOK LIKE IN THE MEDIUM AND LONG TERM?

In the coming period, the production of electric vehicles is targeted, leading to a reduction in the production and consumption of fuel. Consequently, the production

capacity of naphtha, a raw material for petrochemicals derived from petroleum, will increase, leading to an increase in petrochemical production.

In plastic production, biodegradable plastic raw materials will gain prominence, resulting in a decrease in the density of microplastics in nature, particularly in oceans.

The decorative paint sector will witness an increase in production of decorative paints compared to industrial paints, focusing more on innovative products.

Greater emphasis will be placed on the production of composite products. Carbon fiber, in particular, will be used more, and a focus on the production of medical replacement chemicals will intensify.

Renewable energy production will increase due to the target of electric vehicle production. Solar fields will be established on fourth and fifth-class land.

The reduction of drought periods from 7 years to 4 years will increase the use of technologies such as ultrafiltration and desalination for the reuse of water, particularly through the installation of solar panels.

Given the effects of the pandemic, earthquakes, and inflation experienced in our country, companies consisting mostly of SMEs in the chemical industry will encounter difficulties in complying with the requirements of the EU Green Deal. There should be state support for these companies, and due to the aforementioned reasons, the implementation of REACH legislation should be postponed beyond December 31, 2023, for a reasonable period. The delay has become necessary due to the fact that the registration numbers, which should be in the tens of thousands, are in the thousands. The majority of these registrations are focused on products of foreign capital companies, and domestic capital companies will face significant difficulties in covering consortium costs.

The chemical industry is a capital and technology-intensive sector; hence, employment is a secondary matter. Models should be established to focus on educating individuals with effective and competent human capital, similar to countries like Finland. Furthermore, education models that ensure qualified intermediate human resources and specialization in various fields should be provided

In summary, the significance of the chemical industry in our country has been recognized albeit belatedly, and it has been declared a priority sector. While the chemical industry has become the leading sector in exports, it still continues to be the largest contributor to the negative trade balance. To address this deficit, it is crucial to emphasize the importance of producing "intermediate input chemicals" with high added value by utilizing medium and high technology. With these improvements or reviews, I wish to share my prediction that they will contribute to sustaining the leadership of our chemical industry into the second Century of the Republic.

Dr. Selahattin Armağan VURDU
Secretary General of İMMİB

Trends in the chemical industry for 2023

> *In addition to macroeconomic conditions, the internal dynamics of the chemical industry such as sustainability, supply chains, and digitalization will shape the trajectory of the chemical industry in 2023. Taking advantage of the opportunities created by these variables and mitigating the risks they bring will be beneficial for our exporting companies to maintain their competitive edge.*

Uncertainty creates question marks about the recovery process of the chemical industry in 2023. Macro developments such as inflation, sluggish growth, declining consumer confidence, volatility in oil and gas prices, climate change, and the impact of extreme weather events will affect the chemical industry in 2023. However, to discuss the future of our industry, we need to look at not only global conditions but also the internal dynamics of our industry. According to Deloitte's report on "Chemical Industry Trends for 2023" sustainability, portfolio transformation, supply chains, and digitalization are the key trends to be followed in the chemical industry in 2023. Approximately 70 global chemical companies have a net zero target for 2050. According to Deloitte's study, there are fundamentally 15 technologies available for reducing fossil fuel usage with hydrogen and alternative fuels and decarbonizing raw materials.

However, these need to move beyond the pilot stage and be implemented in a deeper and structural manner. In this regard, efforts continue for bio-based production, emission reduction, and circular economy. However, it is noted that most solutions lack the scale to end fossil fuel use and are regionally limited in terms of implementation. In 2023, an increase of approximately 11% in bioplastics production capacity and a growth of around 12-13% in mechanical recycling are expected. Ultimately, while macroeconomic conditions may cause stagnation in investments, increasing interest in sustainability and developing technologies in this regard may encourage investors to make long-term plans for the chemical industry.

Like many other sectors, the pandemic has revealed the vulnerability of supply chains in the chemical industry. According to the American Chemistry Council's (ACC) report from April 2022, 55% of chemical product manufacturers in the United States reported worsening delays and congestion at ports since the third quarter of 2021, and 39% mentioned delays and service issues in rail transportation. According to KPMG's report from December 2022, 6 out of 10 global organizations expressed concern about the potentially harmful effects of geopolitical instability on supply chains in the next three years. Therefore, supply chain issues may

deepen. Reassessing supply chains and determining the necessary changes for the next decade appear to be critical in 2023. Because agile, resilient, and efficient supply chains will require both businesses and policymakers to strike the right balance.

THE CHEMICAL INDUSTRY LAYS THE FOUNDATION FOR DIGITIZATION PROCESSES

In the past decade, many major manufacturers have invested in digitization as digital technologies have advanced. The chemical industry has laid the foundation for the digitization process with mobile devices for interactions, predictive analytics for information, and cloud infrastructure for calculations. In the near term, making existing investments more functional and scalable before expanding into new areas is important for the industry... For example, digital sales channels in the chemical industry in the United States range from $4.5 to $5 billion. According to ABI research, deepening investment in data analytics for better market understanding and production optimization is essential for scaling. This situation could increase the chemical industry's digitalization expenses to $7-10 billion by 2030. Blockchain can also play a role in digitization. The verification of processes in the chemical industry, as well as the secure processing of data without any changes, is crucial for ensuring safety. The immutability of transactions on the blockchain, where consensus among users is required for transaction validation, can make blockchain functional for the industry.

In addition to macroeconomic conditions, the internal dynamics of the industry such as sustainability, supply chains, and digitalization will determine the trajectory of the chemical industry in 2023. Taking measures against the risks that these variables may bring and capitalizing on the opportunities they create will be beneficial for our exporting firms to maintain their competitiveness.

COSMETICS INDUSTRY REACHES 190 COUNTRIES IN EXPORTS

In recent years, the cosmetics industry has been increasing its exports with innovative, sustainable, and personalized products. In 2022, the cosmetics sector exported to 190 countries or regions, increasing its foreign sales by 19.59% compared to the previous year, reaching $1.677 billion.


$1.361
BILLION
SECTOR'S
EXPORT IN
2020
$1.402
BILLION
SECTOR'S
EXPORT IN
2021
$1.677
BILLION
SECTOR'S
EXPORT IN
2022

The sector, which has made significant advancements in the field of cosmetic products, ranging from beauty and makeup materials to essences, perfumes, deodorants, colognes, soaps, shaving products, oral and dental care, and essential oils, is the evolving face of the chemical industry. While many sectors faced difficulties in production and exports during the pandemic period, the cosmetics industry took advantage of the opportunities and increased its foreign sales. Thanks to the dedicated efforts of companies in the cosmetics sector, Turkish products have successfully reached every corner of the world, increasing brand awareness.

In 2020, the cosmetics industry achieved $1.361 billion in exports, with an average unit price of $2,173 per ton. The sector increased its exports to $1.402 billion in 2021, raising the unit price to $2,489 per ton. The cosmetics industry, maintaining its growth momentum, continued its success in 2022, with exports totaling $1.677 billion. During this period, the sector increased its unit price per ton to $2,777, adding value. Moreover, with a growth rate of 19.59% in exports compared to the previous year, the sector signals that this trend will continue in the coming years. The export to 190 countries or regions in 2022 is significant in demonstrating the global reach of Turkish cosmetic products. Additionally, the cosmetics industry, which has set its export target for 2023 at $1.850 billion, maintains its belief that it will achieve this figure based on its performance in previous years.

THE COSMETICS INDUSTRY UPDATES ITSELF WITH INDUSTRY 4.0

In the digitized production processes brought by Industry 4.0, many companies in the cosmetics industry are making significant innovations. Here are some noteworthy developments:

Personalized products: Cosmetics companies are utilizing digital technologies to offer more personalized products to their customers. The aim is to enhance customer satisfaction by producing products tailored to their needs and preferences.

E-commerce and online sales: Companies are creating e-commerce and online sales platforms using digital technologies, aiming to reach their customers more easily and quickly. Online sales platforms facilitate customers' access to products, increase sales volume, and reduce business costs.

AR/VR technologies: Cosmetics companies are beginning to use augmented reality (AR) and virtual reality (VR) technologies to provide customers with the opportunity to experience their products. This enables customers to visualize how the products will look and how they will be used before trying them out.

Automated production: Companies emphasize the importance of automated production technologies brought by Industry 4.0 and optimize their production processes. Automated production systems enable faster, more efficient, and cost-effective production processes.

Big data and artificial intelligence: Cosmetics companies analyze customer behavior using big data and artificial intelligence technologies to develop marketing strategies and optimize their products.

HIGHEST EXPORTS TO IRAQ IN THE COSMETICS INDUSTRY

According to the data from the İstanbul Chemicals and Products Exporters' Association, it is observed that the highest foreign sales in the cosmetics sector were made to Iraq. In 2022, exports to Iraq amounted to $142 million, a decrease of 5.59% compared to the previous year. Following Iraq, the Russian Federation

recorded a 68.79% increase with $139 million, and the United States saw a 21.44% growth with sales amounting to $128 million. During the same period, Iran showed a growth rate of 26.71% with $79 million, the United Arab Emirates experienced a 51.47% increase with $71 million, and the Netherlands followed with a 10.52% growth and $67 million in sales. Among the top 10 countries to which the sector exported, Germany accounted for $64 million, the United Kingdom $61 million, Romania $40 million, and Libya $36 million.

INCREASING MARKET SHARE IN TARGET COUNTRIES

As the cosmetics industry expands its export expectations, it is also developing projects to increase its market share in target countries. Industry representatives participating in projects led by the İstanbul Chemicals and Products Exporters' Association, including trade fairs, buyer delegations, company visits, and strengthening brand perception, are seeking ways to enhance their effectiveness in these markets. Specifically, a total of 51 countries, ranging from the United States to South Korea, Brazil to South Africa, Germany to Nigeria, and Russia to Vietnam, have been included in the radar for the target countries list determined by the Ministry of Trade of the Republic of Türkiye for 2023, with an additional 20 points of support. The aim is to accelerate and increase the existing exports to these markets.

INCREASING INTEREST IN NATURAL, ORGANIC, AND SUSTAINABLE PRODUCTS

Taking into account consumers' preferences, the cosmetics industry is also increasing its focus on research and development (R&D) and innovation to offer innovative, high-quality, and effective products. The sector representatives are paying more attention to natural, organic, and sustainable products, considering the rising demand for such products. In addition to R&D, the use of digital technologies in sustainability and environmental impact within the cosmetics sector is also gaining attention. For example, cosmetics companies prefer to use less water and energy in production processes, prioritize environmentally friendly products, and pay more attention to waste management. With these developments, there is also an increasing interest in digitalization and Industry 4.0 in the sector, and companies are observed to be investing in this field.

SELUZ FRAGRANCE & FLAVOR COMPANY TAKES INSPIRATION FROM THE UNIQUE RICHNESS OF NATURE

Seluz Fragrance & Flavor Company, one of the prominent players in the Turkish cosmetics industry, is a company that draws inspiration from the unique richness of nature in developing its products, with 100% domestic capital, it aims to be among the top 10 brands globally.

As one of the leading companies in the fragrance and flavor sector in Türkiye, Seluz Fragrance & Flavor Company has achieved significant success by securing export leadership in the "Fragrance Chemicals Export" category of the Istanbul Chemicals and Products Exporters' Association for five consecutive years. The company recorded $37 million in fragrance chemicals exports in 2022 and continues to expand its production with a workforce of 270 employees. It forecasts reaching a turnover of $100 million in 2023.

Murat Öztürk, the founder and CEO of Seluz Fragrance & Flavor Company, highlights their focus on "global growth" and "value-added products" since its establishment. The company is on the path to becoming a global brand through their emphasis on qualified human resources, high-tech investments, excellence-driven approach, and customer-oriented philosophy. Öztürk mentions that Seluz Fragrance & Flavor Company exports to various countries, including Bulgaria, Russia, Chile, Spain, and Algeria, with representative offices, reaching from Europe to America, the Middle East to Asia. Additionally, the company has opened two offices in Dubai and Tehran, which are recognized as key markets. Öztürk states that the transformation and development of their office in Dubai, named the "Middle East Creative Center," began its infrastructure work in 2022 and is designed with advanced technology. They plan to complete this project in 2023, aiming to provide stronger services to their business partners in the region. He emphasizes that this investment is not only a source of pride for the company but also an important investment for Türkiye.


Murat Öztürk
CEO of Seluz
Fragrance & Flavor Company

Öztürk underlines that Seluz Fragrance & Flavor Company differentiates itself by providing market analysis, consumer trends, and concept development processes, adding value to their business partners in order to meet expectations. He states that their honesty, transparent collaboration, and sincere approach towards customers and business partners are the key values that distinguish them from their competitors.

RICH PRODUCTS RANGING FROM PERFUME TO HAIR AND SKIN CARE ARE OFFERED

Seluz Fragrance & Flavor Company offers a wide range of products, including fine fragrances (perfumes), personal care products (hair care, skincare, baby care, wet wipes, etc.), and home care products (detergents, surface cleaners, room fragrances, etc.). They continually develop new designs and expand their fragrance and flavor library by combining their inspiration from life's most special moments and the unique richness of nature with technology. Öztürk also mentions that with advancing technology, innovative usage areas for fragrances have emerged, spanning from textiles to chemistry.

As a company established with 100% Turkish capital, Seluz Fragrance & Flavor Company aims to become one of the world's top 10 fragrance and flavor companies. Öztürk emphasizes the importance of proving that Türkiye can develop and produce high-quality products. They export their "Created in Istanbul" signed products,

contributing to the country's added value. They strive for a sustainable green future through waste control systems and modern environmental standards, while also investing in research and development, production processes, human resources, technology, and new manufacturing areas to continue growing and strengthening in accordance with the changing conditions of the present and the future.

60% OF THE WORKFORCE IS EMPLOYED IN R&D CENTERS

Öztürk, stating the importance of R&D efforts that will enhance global competitiveness and create value for the national economy, emphasizes their investment in this field. He continues, "We believe that with our creativity, design value, and all our innovation efforts, we will further increase the value we generate and our competitive power with other countries. Our consecutive five-time leadership in the 'Fragrance Chemicals Export' category and our rapid global growth, which has made us a hub for all our categories, are owed to our critical R&D center and the qualified human resources we have in this field. I also want to underline that 60% of our entire workforce is employed in our R&D center. Currently, we have 11 active projects, supported nationally and internationally, ongoing in our center, some of which are related to aromas and some to essences."

FARMASİ KOZMETİK FOCUSES ON GROWTH

Farmasi Kozmetik has seized the opportunity for growth due to the supply issues faced by prominent players in the cosmetics sector, China and India, during the pandemic. The company aims to focus on the markets of Colombia, Peru, and Ecuador this year, while projecting an increase in exports from $60 million to $80 million.

Farmasi Kozmetik, an important player in the cosmetics sector, continues to enhance its brand value with its products in various areas such as skincare, haircare, makeup, perfume, men's grooming, baby care, sunscreens, oral care, dental care, dietary supplements, and personal care. Operating in nearly 200 countries and regions from Europe, America, Asia, to Africa, including the United States, Poland, Spain, Malaysia, China, Mauritania, Germany, and Senegal, the company strives to increase its market share in every period.

Farmasi Kozmetik, based in Türkiye, has been contributing to the country's economy for 75 years, employing 1,500 people worldwide and implementing a continuous growth strategy. Having achieved an export volume of $55-60 million in the past three years, Farmasi Kozmetik aims to surpass $80 million in foreign sales in 2023. Kaan Cabas, the Supply Chain Director of Farmasi Kozmetik, states that their growth plans for this year include Colombia, Peru, and Ecuador, and they aim to enter these markets within three months. Furthermore, Cabas emphasizes that the value-added by their exported Farmasi branded products exceeds the Turkish average. He says, "While the kilogram value of the products our industry exports in Türkiye currently stands at an average of $2.5-3, the kilogram value of our exported products under our own brand is $11. This demonstrates the magnitude of the value-added we offer."

Kaan Cabas, Supply Chain Director of Farmasi Kozmetik

FARMASİ KOZMETİK VALUES BRAND IDENTITY

Cabas, highlights that consumers prefer Farmasi Kozmetik, especially because skincare products are formulated with natural ingredients such as vitamins and minerals, and makeup products like mascara, lipstick, and foundation also receive priority demand. He expresses the importance they place on brand identity as follows: "Farmasi Kozmetik is one of Türkiye's leading cosmetic companies and has experienced rapid growth in recent years. The brand value of our company is attributed to several factors such as its strong position in the industry, wide range of products, high-quality offerings, innovative products, robust distributor network, international presence, and customer-focused approach. The brand value of Farmasi Kozmetik depends on factors perceived by consumers, such as quality, reliability, innovation, environmental consciousness, customer satisfaction, and loyalty. Additionally, Farmasi Kozmetik products are affordable and stand out in terms of quality."

RESEARCH AND DEVELOPMENT ARE ESSENTIAL FOR COMPETITION

Cabas recalls that the cosmetics industry constantly engages in research and development to offer consumers better products. He states, "Cosmetic companies continuously work on discovering, testing, and developing new materials, formulations, technologies, and processes through research and development activities. These activities are crucial for the safety, effectiveness, quality, and customer satisfaction of cosmetic products. As a company, we also prioritize this field and carry out the necessary work to provide better services and remain competitive. Furthermore, these efforts have positive effects on sustainability and social responsibility."

Cabas emphasizes that with the increase in competition in the industry, companies focus on natural and organic products, effective use of social media, personalized offerings, preference for digital technologies, and sustainability in order to stand out and keep up with global trends. He also highlights innovative approaches in service alongside R&D, stating, "The most distinguishing service of the Farmasi brand is that every order placed through the online system is shipped within a maximum of 3 days. We are ambitious when it comes to speed, quality, and customer satisfaction. We have long-term forward-looking projects. We are making investments through our software company, Farmasi X. Our 35 professionals there are working on projects related to production automation, aesthetic automation integration, and all integration processes. We will probably complete this by the end of 2023. Our next goal is to achieve integration with our suppliers. Farmasi Kozmetik is not just a cosmetic-producing company or brand. It is also a company that manufactures its own packaging, produces cosmetics, and sells them alongside dietary supplements, perfumes, and personal care products through its own investments. It is a company that markets and sells its own products, a global company."

FARMASİ KOZMETİK, OPERATED AT FULL CAPACITY DURING THE PANDEMIC

Cabas mentions that China and India hold significant positions in the global cosmetics market. He states that Farmasi Kozmetik capitalized on the opportunities presented during the pandemic due to the difficulties faced in these countries. He says, "During the pandemic, when a significant portion of suppliers in these markets were closed, Farmasi Kozmetik continued to operate at full capacity without any interruption in production, and our company achieved a significant success story during this period. The Chinese cosmetics market is one of the largest markets worldwide and had an approximate value of $61 billion in 2019. The value of the Indian cosmetics market is estimated to be around $12.6 billion in 2020. We seized the opportunity for growth when the supply routes of these countries were closed," indicating that they turned the crisis into an opportunity.

SEVİM AVŞAR ÖZTAŞKIN

"AN ENTHUSIASTIC AND SOLUTION-ORIENTED LEADER"

With over 35 years of experience in the medical sector, Sevim Avşar Öztaşkın stands among the distinguished names, introducing herself as "an enthusiastic and solution-oriented individual and leader." Öztaşkın's support for various non-governmental organizations also reflects this personality trait.

Avşar Öztaşkın
Board Member of
Çapa Medikal Sanayi
and Ticaret A.Ş.
and Honnes Sağlık
and Endüstriyel
Ürünler A.Ş.

Avşar Öztaşkın, a board member of Çapa Medikal Sanayi ve Ticaret A.Ş. and Honnes Sağlık ve Endüstriyel Ürünler A.Ş., shares her journey of success as a woman in the medical sector with Chemist readers.

Is it possible to get to know Sevim Öztaşkın, a distinguished figure in your sector? As Sevim Avşar Öztaşkın, after 15 years of public service, I started working at Çapa Medikal Sanayi ve Ticaret A.Ş., a family company established by my brothers Recep Avşar, Zekeriya Avşar, and my husband Recai Öztaşkın in 1987. I am still an active board member at Çapa Medikal Sanayi ve Ticaret A.Ş. and Honnes Sağlık ve Endüstriyel Ürünler A.Ş. Due to my personal mission, I find it difficult to define a specific role for myself. I have set my philosophy as supporting every department that needs help and providing solutions. However, the finance department stands out as the one I mostly support. I can say that I am an enthusiastic and solution-oriented individual and leader.

As a seasoned figure in your sector, what do you owe your success to?

What are the criteria that led you to success? First and foremost, I have a planned and organized personality. I don't leave today's work for tomorrow. Keeping track is very important to me in my work. When I delegate a task to someone, I like to follow up and see the results. Additionally, I work very hard. I can say that working is inherent in my nature. I am patient and persevering. By closely monitoring our sector, I strive to contribute to introducing innovations in our work. Without innovation and change, you cannot survive. I transfer these qualities to our team, and with a harmonious teamwork, we move confidently towards the future.

THE MEDICAL SECTOR WILL WRITE A NEW SUCCESS STORY

Considering the accumulated years of experience, do you think the medical sector has achieved its goals?

The sector has faced challenging periods in the last 4-5 years due to various developments. However, I believe that the sector will soon experience relief. Because Türkiye has entered the "Champions League" in healthcare, and as a result, the medical sector will write a new success story. We need both foreign companies and domestic production, and together, we will achieve this success.

Does your sector shape global trends, and has Türkiye succeeded in achieving success on a global scale?

Turkish products are preferred by many countries. We can see this in export figures. In recent years, the number of companies exporting their products has increased significantly. The high participation rates in the Medica Fair held in Germany and the Arab Health Fair held in Dubai confirm this. Our companies return from these fairs having made important connections. I can say that the sector holds promise for the future. Production costs in Türkiye are also very reasonable. I believe that Türkiye's trade deficit in healthcare will close and turn positive. However, branding in this field requires a process. Companies that manage this process well are making steady progress toward becoming a brand.

How did the pandemic affect your business processes?

Çapa Medikal had transitioned to a new distribution center in 2020 to become a global player. Our transition coincided with the beginning of the pandemic. Covid-19 marked the start of a new era worldwide. Supply chains were disrupted in many sectors, including the healthcare sector. We

WORKING WITH THE VISION OF BEING A GLOBAL COMPANY

Entering the medical sector in 1987 and continuing its steady growth as Çapa Medikal since 1992, our company remains one of the strongest supporters of healthcare service providers in the sector with a broad portfolio of medical consumable materials amidst the technological transformation. Our subsidiary, Honnes, prioritizes high-quality production with sustainability and has become one of Türkiye's most powerful producers in the field of medical consumables.

Our goal as Çapa Medikal and Honnes is to export the products we manufacture abroad. We export to more than 50 countries, including Europe, the Middle East, Asia, and the Turkic Republics. We have both our own products and OEM products in our exports. We are expecting significant growth in our products for the retail and pharmacy sectors. With the vision of becoming a global leader in supply and logistics for the healthcare sector in Türkiye and the surrounding region, we continue our efforts.

tried to adapt to this situation. We are capable of acting quickly. As a country, we successfully managed the pandemic, which also had a positive impact on our sector.

CERTIFICATION PROCESSES AND RAW MATERIAL SUPPLY ARE CRUCIAL FOR THE SECTOR

How do you evaluate your sector and the chemical industry based on your accumulated experience?

In our country, the medical device sector, more commonly known as the medical supplies sector, encompasses a wide range of products, from disposable items like bandages, syringes, and stents to complex technological equipment like ultrasound and MRI machines. The Republic of Türkiye Ministry of Health follows the European Union acquis in medical device regulations. The previously applicable CE certification process, which was known as the Medical Device Directive (MDD), has now been revised as the Medical Device Regulation (MDR). As we experienced during the Covid period, disposable medical devices hold strategic importance for every country, and in our country, medical consumable products that used to rely heavily on imports have started to be produced by experienced companies in the sector and this production is growing day by day. Here, two important issues that need to be addressed arise: certification processes and raw material supply.

Certification processes are costly and time-consuming procedures that need to be considered in every project and unfortunately can play a negative role in not implementing some projects. The second issue is raw material supply...

Our dependence on external sources continues to be a serious problem. Therefore, it is vital for our chemical sector to make serious leaps in raw material production. It is critical for us to source our raw materials domestically in order to produce quality products and remain competitive, which is crucial for sustainability. Thus, it is necessary for everyone in our country to make efforts to develop and strengthen our chemical sector, which provides inputs to every industry, and for our

government to continue increasing its contributions to meet our sourcing needs from domestic sources due to the strategic nature of the chemical sector. With the experience we possess in the sector, it is essential for our chemical industry to be among the world's leading chemical industries to reduce our country's dependence on foreign sources and to play a global role in supplying these products from our country to the world.

THE NEW GENERATION IS VERY DIFFERENT

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

Young people should always know that obtaining something without working for it or putting effort into it goes against the nature of things. Therefore, they need to be determined, observe experienced individuals well, and understand the dynamics of the sector they want to work in. At the same time, adopting lifelong learning should be one of their main principles, which is one of the most important criteria for success. The new generation comes with a very different education, perspective, and unique skills. If they combine these qualities with the determination and effort I mentioned, they will undoubtedly reap the rewards in the medium and long term. Just as it was in the past and will be in the future, reading remains the most important skill. Young people who want to advance in the medical sector should thoroughly understand the dynamics of this sector and have a good grasp of the regulatory status within it.

We know that your workload is heavy. Do you have a hobby that relaxes you mentally and physically?

Taking care of my grandchildren makes me very happy. They are everything to me. Social Responsibility Projects also significantly relax me mentally. Supporting someone, being part of meaningful projects, is truly a significant emotional exchange. For example, since 2018, we have taken on the sponsorship of health products for the Turkish Volleyball Federation with b-good. We sponsored the UF Oldu book written by Saniye Bencik Kangal (@akademisyenanne) and Bedriye Çelik (@kitap_atolyesiii). Within the framework of this sponsorship, we made surgical mask donations to two designated organizations. Additionally, we made a surgical mask donation to KAÇUV, the Cancer-Free Life Association. We supported the "Sevgi Projesi" (Love Project) with TEGV. The purpose of the project was to contribute to increasing educational opportunities for children in TEGV's classrooms using the revenue from Sevgi Yara Bandı (Love Bandage). We supported the "Dost Projesi" (Friend Project) event with Haytap. We also supported the "İyilik Projesi" (Goodness Project) with Koruncuk Vakfı (Orphan Foundation). These kinds of social responsibility projects are a hobby for me, and our support in these areas will continue to grow.

R&D EFFORTS IN TÜRKİYE HAVE SHOWN PROMISING RESULTS, BUT THE PATH AHEAD IS CONSIDERABLY LONG

As the awareness of R&D gradually emerges in Türkiye in recent years, surpassing the level of competitor countries necessitates going beyond this awareness. It is essential to internalize and encourage R&D, which rival countries readily invest in, and make innovative thinking an integral part of life.

When considering economically, socially, and scientifically advanced countries with high levels of prosperity, it becomes evident that these nations have reached their current status by allocating substantial budgets to R&D and innovation over the years. However, in Türkiye, the awareness focused on R&D and innovation dates back only 15-20 years. For instance, in 2003, the allocated budget for R&D nationwide in Türkiye stood at $1.5 billion, while during the same period, a comparison can be made to the fact that a single global automotive company spent 3-4 times that amount on R&D. On the other hand, according to the 2021 data from TÜİK, the total R&D budget in Türkiye reached $82 billion, revealing the significant progress made during this period. Nonetheless, considering that even 4-5 massive brands in the global automotive, white goods, electronics, and defense industries can allocate budgets at such levels, it should not go unnoticed that the journey ahead for Türkiye in this field is quite extensive.

Although Türkiye's path in R&D and innovation may be long, in recent years, significant awareness has been created in this field through the steps taken by the Ministry of Industry and Technology of the Republic of Türkiye. With the establishment of 1,257 R&D centers, 417 technology development zones, and design centers in various sectors, intensive efforts are also underway within companies. Engineering firms in the plastic sector, which attach great importance to R&D activities, are making significant contributions to high-performance engineering plastic products with the values they demonstrate, by undertaking important projects. They are developing various innovative products ranging from the development of special plastics that can replace metals in electric vehicle applications to electrically conductive applications, as well as biodegradable and bio-based plastics. These companies provide supplies to global brands, ranging from the aviation industry to the automotive industry, from household appliances to the electronics sector, and from biomedicals to rail systems, through their successful projects.

R&D CAN OFFER BILLION-DOLLAR OPPORTUNITIES

As products undergo changes in accordance with the demands of the present day, engineering plastics that demonstrate a more sustainable approach, taking into account environmental and climate concerns, are coming to the forefront. Projects focusing on these engineering plastics, which have the potential to revolutionize the field, are being pursued. Within this scope, engineering plastics are being developed as alternative materials to be used in various applications. These plastics are significantly stronger and more durable, with improved physical properties, making them sustainable and biodegradable industrial products. They are positively impacting the future of the world. The development of innovative products in the field of engineering plastics through R&D efforts will lead to exponential growth and transform into billion-dollar opportunities. Innovative projects are emerging with the aim of creating such high-value, groundbreaking solutions.

R&D AWARENESS HAS BEEN ACHIEVED, BUT INTERNALIZATION IS ALSO NEEDED

Representatives of the engineering plastics sector emphasize that they are developing innovative products that will make a difference. However, they express the need for faster action in order to compete with advanced countries and assert themselves by saying, "We are also here." It is emphasized that in order to make faster progress in R&D, qualified human resources in this field and better technology management need to be prioritized, as competitor countries are not hesitant to invest in these areas. Industry representatives emphasize the importance of having an innovative mindset to achieve innovative outcomes. Despite the emergence of R&D awareness in Türkiye, they highlight the significance of its evolution into a culture over time. Furthermore, it is indicated that R&D goes beyond mere awareness and needs to be internalized, requiring all stakeholders, from the government to the public, from employers to employees, to make effective moves in line with the defined roadmap and their respective roles and responsibilities. In terms of educational processes, it is also mentioned that individuals need to engage in activities and explore different techniques in order to generate new ideas, in addition to receiving education. Taking all these into consideration, the essence of successful R&D endeavors lies in the presence of an innovative mindset in all aspects of life.

EUROTEC, PRESENT IN EVERY ASPECT OF LIFE

Eurotec Mühendislik Plastikleri, with our plastic materials suitable for contact with food, is present in every aspect of life, from aviation and defense to construction with food.


Esra ATASOY


Görkem ÜLKÜ

With the goal of being a pioneer in R&D and innovation in the industry, Eurotec Mühendislik Plastikleri has been developing projects with an innovative perspective since its establishment in 2004. The company develops products in many areas, including high-performance engineering plastics, electrical conductivity applications, plastics that can replace metal, special plastics for electric vehicles, biodegradable and bio-based plastics, and recycled plastics, with its rational solutions present in every aspect of life.

Esra Atasoy and Görkem Ülkü, the R&D Project Managers at Eurotec Mühendislik Plastikleri, share that with their vision, high technical experience, technological infrastructure, and laboratory facilities, they have made a difference and increased their competitiveness compared to global competitors. They emphasize their focus on meeting requirements such as battery packs for next-generation vehicles, electric motors, high-voltage connectors, heat management systems, and driver assistance sensors in e-mobility product range development. Atasoy and Ülkü also highlight that they produce their own Tecolor masterbatch, which is highly temperature-resistant, for the popular orange color used in electric vehicles.

DEVELOPING PRODUCTS FOR THE AVIATION INDUSTRY

They also mention that they offer low carbon footprint solutions to domestic and international customers with their environmentally friendly approach, emphasizing their significant position in environmentally friendly engineering plastics projects in the sector. Atasoy and Ülkü also state that they closely follow customer needs in this field and strive to provide solutions. Under the Eurotec umbrella, they have expanded their product range with high-performance plastics such as PEI, PEEK, and PPSU and offer special solutions to customers in the aviation sector as well.

Atasoy and Ülkü conclude, “With our plastic materials suitable for contact with food, we are present in every aspect of life, from aviation and defense to construction and food.”

IMS POLYMERS COMPLETES 26 PROJECTS WİTHİN THE SCOPE OF R&D

In the journey that began with industry-university collaboration, Akın İşbilir, Deputy General Manager of IMS Polymers, states that they have successfully executed projects within the scope of R&D. He expresses their readiness to fulfill all necessary tasks to strengthen the country's ecosystem.

Akın İşbilir Deputy General Manager of IMS Polymers,

Initiating an R&D office at EGE Technopark within Ege University in 2015 under the context of university-industry collaboration, IMS Polymers' endeavor received recognition from the Ministry of Industry and Technology of the Republic of Türkiye two years later. The IMS Polymers R&D Center focuses on the development of functional and value-added engineering plastics for various sectors, including energy, electrical and electronic, construction, automotive, biomedical, and rail transportation. Being 100% domestically funded, IMS Polymers continues its production in the 1st Organized Industrial Zone of Turgutlu, Manisa, while, as part of academia-driven R&D activities, completing 26 projects to date.

Stating that they work with a team of 29 experts consisting of academics, fundamental scientists, and researchers in their R&D centers, IMS Polymers Deputy General Manager Akın İşbilir says, "We believe that we demonstrate a difference in vision as one of the newest players in terms of R&D and innovation in the sector. Since its establishment, we have dedicated our journey to university-industry collaboration. We have shaped our strategic plan to further strengthen this relationship. Türkiye holds a significant position in our sector, both in Europe and globally. As we strive to move away from being seen as subcontractors and intermediate processors and seek more global customers for our R&D project outcomes."

Highlighting examples of their commercialized projects among their innovative products, İşbilir says, "Our product groups built upon various base materials with flame-retardant properties compliant with the EN45545-2 standard, anti-bacterial products, and materials with thermal management applications have achieved success. Finding a place for these project outcomes in the national or international market presents us with a different story."

"WE ARE READY TO FULFILL EVERY TASK THAT FALLS UPON US"

Reminding us that a significant portion of raw materials in the chemical industry is import-based, İşbilir expresses their contentment with seeing new investments in this field and continues, "We believe that these strategic moves, which we consider to have a crucial role in reducing the current account deficit, will lead to the evolution and strengthening of our ecosystem through proper planning by the government. We express in every platform that we have the determination to fulfill every task that falls upon us for the realization of this strategic move."

"WE DEVELOP OUR NICHE PRODUCTS THROUGH R&D"

Binnaz Coşkunkan, R&D Manager of Tisan Mühendislik Plastikleri, emphasizes that they develop their niche products through R&D and with this perspective, specialize in non-standard products in different sectors.

In the engineering plastics sector, where the development of niche products is needed, creating innovation and differentiation is among the essential elements of the competitive environment. Tisan Mühendislik Plastikleri combines their accumulated extensive know-how with their studies on various polymers to create alternative substitute products for imported goods, thereby making a difference. Instead of working on a single product in R&D, the company develops projects that aim to gain knowledge and perspective through different products and to disseminate this knowledge. Pursuing sustainable projects, they aim to achieve both scientific and economic benefits.

Binnaz Coşkunkan, R&D Manager of Tisan Mühendislik Plastikleri, says that since their establishment, they have attached great importance to R&D and, with this perspective, have developed innovative solutions through new products, services, and business models. Coşkunkan reports that the structure of their R&D centers was strengthened with the approval of the Ministry of Industry of the Republic of Türkiye in 2018 and emphasizes that their main goal is to create pioneering values for different sectors on the path to becoming a global brand, thereby developing sustainable new projects.

"At my high-tech R&D laboratory, we quickly lay the foundations for successful works in rapidly growing sectors in Türkiye and around the world with a clear product language. When we talk about innovative works, as the automotive industry turns towards producing electric vehicles, engineering plastics are gradually taking the place of traditional materials like steel and aluminum. Plastic components already play an important role in reducing the weight of vehicles powered by internal combustion engines, and electric and battery-operated vehicles bring along a new series of values," says Coşkunkan, pointing out their focus on a sustainable economy in the new era. He adds that 10 years ago, they differentiated themselves in the market by developing products under the Ecostar® brand in terms of sustainability and environmental impacts, and that they continue their investments in this area by separating their production facility.

SPECIALIZATION IN NON-STANDARD PRODUCTS

Coşkunkan states that in their R&D department, they develop solutions that meet fundamental requirements such as cost-effectiveness, shortening development time, faster market introduction, and high cost-effectiveness with a team of 22 engineers holding degrees in various disciplines, including doctorates and master's degrees. Through these efforts, they produce their niche products in the field of performance and sustainable materials. Reminding us that they expanded their perspective in R&D to not only focus on engineering plastics production but also to develop new product groups that could be used in different sectors, Coşkunkan emphasizes their specialization in non-standard products.

Coşkunkan notes that Olebond® branded maleic anhydride-grafted polymers, developed under the R&D studies with a significantly wide product portfolio, are a noteworthy example. He continues, "In addition to these studies, we are conducting research on a product group that appeals to sectors involving composite pipes, oxygen barrier multilayer pipes, composite panels, halogen-free flame-retardant cables, metal plating, co-extrusion, cast and blown films, and recycling. Our products, with increasing recognition and quality since 2019, have become a global competitor and a brand. Similarly, we are working on the industrial use of bio-based products developed with sustainability and environmental effects in mind. With the Biostar® brand, we aim to expand sustainable products and processes as a project that takes its first steps."

ADOKİM KİMYA SANAYİ AIMS TO BE THE FIRST CHOICE COMPANY IN THE WORLD

Adokim Kimya Sanayi, which gained recognition as a brand competing with century-old global giants in terms of quality and reliability in the field, following the start of ethyl acetate production during the pandemic, is aiming to become the first choice in its sector.

60.000 tons
Annual Production Capactity

%15
Eneregy Efficiency Increase in 2022

%35
Annual Export Share

As the sole producer of ethyl and butyl acetate in Türkiye and one of the three in Europe, Adokim Kimya Sanayi, plays a crucial role in various industries with its supply of raw materials and intermediate products. Ethyl and butyl acetate, classified as strategic chemicals, are products that can have significant impacts, even causing production halts, if the supply is disrupted. Adokim Kimya Sanayi, produces these chemicals domestically and provides import substitution, contributing to the country's economy. With an annual production capacity of 60,000 tons of ethyl and butyl acetate, Adokim stands out as Europe's second-largest facility in its sector. The company exports about 35% of its production, with Italy and other European countries being its primary foreign markets. While ethyl acetate constitutes a substantial portion of the company's exports, there are expectations for high levels of foreign sales of butyl acetate in 2023. Adokim Kimya Sanayi Deputy General Manager Serkan Ali Fidan explains that they operate with a qualified workforce of 100 people in their fully automated facilities and anticipate an increase in this number with upcoming investments.

Fidan emphasizes their willingness to invest, stating, "Adokim embodies research, innovation, and a touch of persistence. Our goal is to establish facilities that produce chemicals not made or deemed sustainable in terms of economy and environment, in line with the objectives set by our founders. We aim to offer these products to our domestic industry at more economical terms. While pursuing these internalized goals as a team, with the support of our customers, we managed to make it to the ISO Top 500 Industrial Enterprises List within just two years of our facility's operation."

As part of their short-term goals, Fidan outlines their plan to increase exports to Europe for ethyl acetate sales in 2023 and enter the American market. Regarding butyl acetate sales, the priority lies in establishing a foothold in the European market. Fidan also mentions their intention to shorten delivery times and provide more creative logistic solutions aligned with these objectives. He adds that they are enthusiastic about such new and niche projects and their product list is extensive.

Fidan highlights the company's commitment to R&D since its inception and its dual approach to existing

INITIAL PRODUCTION STARTS IN 2020

Established in 2018 in Antalya by ADO Group Companies and Ak-Fin International Consulting A.Ş., Adokim Kimya Sanayi entered the sector. The feasibility studies were completed the same year, and the foundation for the first facility was laid in Antalya Organized Industrial Zone in 2019. Despite the challenges of the pandemic, the company managed to start test manufacturing for its ethyl acetate production facility in August 2020, which marked a historic milestone for the country's industry. Following this, they began authorized and uninterrupted production in September 2020. In November 2022, they expanded their product range by adding butyl acetate production to their operations. This expansion not only diversified their product portfolio but also contributed to the country's economy.

Serkan Ali Fidan
Adokim Kimya
Sanayi Deputy
General Manager

and new facilities. They continuously work on maintaining quality sustainability, increasing energy efficiency, and reducing carbon footprint in existing facilities. The company achieved a 15% increase in energy efficiency through developments in 2022 alone. Their R&D efforts for new facilities have been ongoing since the company's establishment. Fidan describes these as a combination of investment, study, and feasibility. He also points out their collaboration with Peteng Engineering for innovative production technology R&D, aiming to ensure the environmental assessment and economic recovery of byproducts and waste. Adokim Chemical Industry also collaborates with regulatory institutions to establish necessary administrative regulations, emphasizing the importance of these efforts to the industry's growth in Türkiye.

Fidan brings attention to the impact of the pandemic on the chemical industry and ethyl acetate in particular. Supply chain disruptions led to an unprecedented global crisis, driving the price

of ethyl acetate to historical highs over the past 50 years. Adokim Chemical Industry managed to continue full-capacity production during this period and help mitigate the crisis's impact in Türkiye. He underscores that their priority was to ensure the availability of necessary raw materials for production and deliver products to customers in need, while also implementing an export quota for the first time in Turkish history to prevent speculative pricing in the domestic market. This approach allowed Türkiye's industry to navigate the global scarcity and extreme price increases more effectively compared to European competitors.

Fidan concludes by stating that this experience underscored Adokim Kimya Sanayi, importance to the country's economy and its strong presence in the domestic market. Their focus remains on delivering the highest quality products to customers consistently and promptly. Despite the challenges posed by the pandemic, they successfully reinforced their brand's position both nationally and internationally. Becoming a preferred brand among century-old global giants in terms of quality and reliability is a testament to their correct priorities. However, Fidan firmly emphasizes that their goal is to remain the first choice for customers, pushing for continuous improvement.

İKMİB, 50 BILLION DOLLAR EXPORT TARGET WITH STEADY STRIDES

The chemical industry achieved $33.6 billion in foreign sales in 2022, surpassing all industries in Türkiye's overall exports and claiming the championship. Adil Pelister, the President of the İstanbul Chemicals and Chemical Products Exporters' Association (İKMİB), stated, "With the exports we achieved in 2022, we have taken the lead and now we will take new steps to reach the goal of permanent leadership" and announced their target of $50 billion in exports by 2030.

As Türkiye's economy focuses on exports to achieve growth goals, the chemical industry contributes the most to this path of progress. In recent years, the chemical industry's success has been remarkable. By overtaking the automotive industry, which has held the export leadership for 16 years, the chemical industry reached the pinnacle of exports in 2022. Behind this success lies the successful efforts of İKMİB, while new projects are being undertaken to ensure the sustainability of the $33.6 billion export achieved in 2022. Within the framework of the "Vision 2030" projection, İKMİB aims to achieve $50 billion in exports during this period by focusing on sustainable R&D, innovation, and design. With an emphasis on environmentally friendly approaches in production, İKMİB will continue its journey of success by scaling up its exports.

Adil Pelister
President of İKMİB

The rising trend in the chemical industry in recent years indicated the future of export leadership. When examining this journey, it is observed that the unit export price per kilogram increased from $0.89 in 2018 to $0.92 in 2021 and further to $1.16 in 2022, indicating that the chemical industry increased its added value. Alongside added value, the total exports of the chemical industry have also shown double-digit

growth in recent years. While the chemical industry achieved $18.31 billion in foreign sales in 2020, it increased this figure by 38.79% to $25.48 billion in 2021. Demonstrating a similar trend in 2022, the chemical industry improved its foreign sales by 31.88% compared to 2021, reaching $33.61 billion in exports. These figures solidify the chemical industry's position as the export champion.

ACROSS THE GLOBE WITH TURKISH PRODUCTS

According to İKMİB's export data, the chemical industry is the sector that provides products to the highest number of countries and regions globally, with 232 in 2022. This strengthens the perception of "Made in Türkiye." The top 10 countries for exports are the Netherlands, the United States, Italy, Romania, Lebanon, Russia, Germany, Spain, Iraq, and South Africa, with 40% of exports directed to EU countries. Notably, the data highlights a record-breaking increase of 270% in the export rate to South Africa within the framework of Türkiye's Distant Countries Strategy announced by the Ministry of Trade.

Analyzing the sector-specific data, the "plastics and articles thereof" product group takes the lead in 2022 with a 13.82% increase and $10.22 billion in exports. The product group "mineral fuels, mineral oils, and products thereof" ranks second with a 73.93% increase and $9.85 billion in exports, while the "inorganic chemicals" product group ranks third with a 57.73% increase, achieving $3.26 billion in foreign sales. The other product groups listed are "essential oils, cosmetics, and soap," "rubber and articles thereof," and "pharmaceutical products."

EXPORT TARGET FOR 2023: $36 BILLION

The driving force behind the rising star of chemical industry exports is İKMİB's commitment to correct strategies and projects. Adil Pelister, President of İKMİB, evaluates the chemical industry's export championship and states, "With 16 subsectors serving as direct suppliers to 27 main sectors, we are a large chemical family with strategic importance. As promised to our chemical exporters, we first achieved lasting second place. Now, despite global challenges, we have taken the lead with the $33.6 billion in exports achieved in 2022, and we will take new steps towards the goal of permanent leadership. Our unit price for export per kilogram has exceeded the $1 threshold. This picture shows that we are growing qualitatively in chemical

exports. Now, within the framework of our 'Vision 2030' strategy, we aim to scale up our chemical exports through growth based on sustainability. Our target is to reach $36 billion in chemical exports in 2023 and $50 billion by 2030. Among the world's top 10 economies, 8 are also leaders in production and export in the chemical industry. Therefore, the chemical industry holds strategic importance for our country's economic development and the future of our exports. With this awareness, we continue our efforts and aim to be among the game changers of the new era in the future of chemistry."

Pelister highlights that a new geopolitical transformation is occurring worldwide, radically affecting the future of exports. He underscores the importance of closely monitoring developments such as sustainable production, digital transformation, high-value-added innovative products, the EU Green Deal, and border carbon adjustments for the new era. Additionally, he mentions important topics that need to be rapidly adapted, such as the "Supply Chain Management Principles" law passed in Germany and the REACH regulation for chemicals. Pelister states, "As İKMİB, in line with our sustainability and digitalization strategy, we are working to scale up our chemical industry and exports to the next level through our projects."

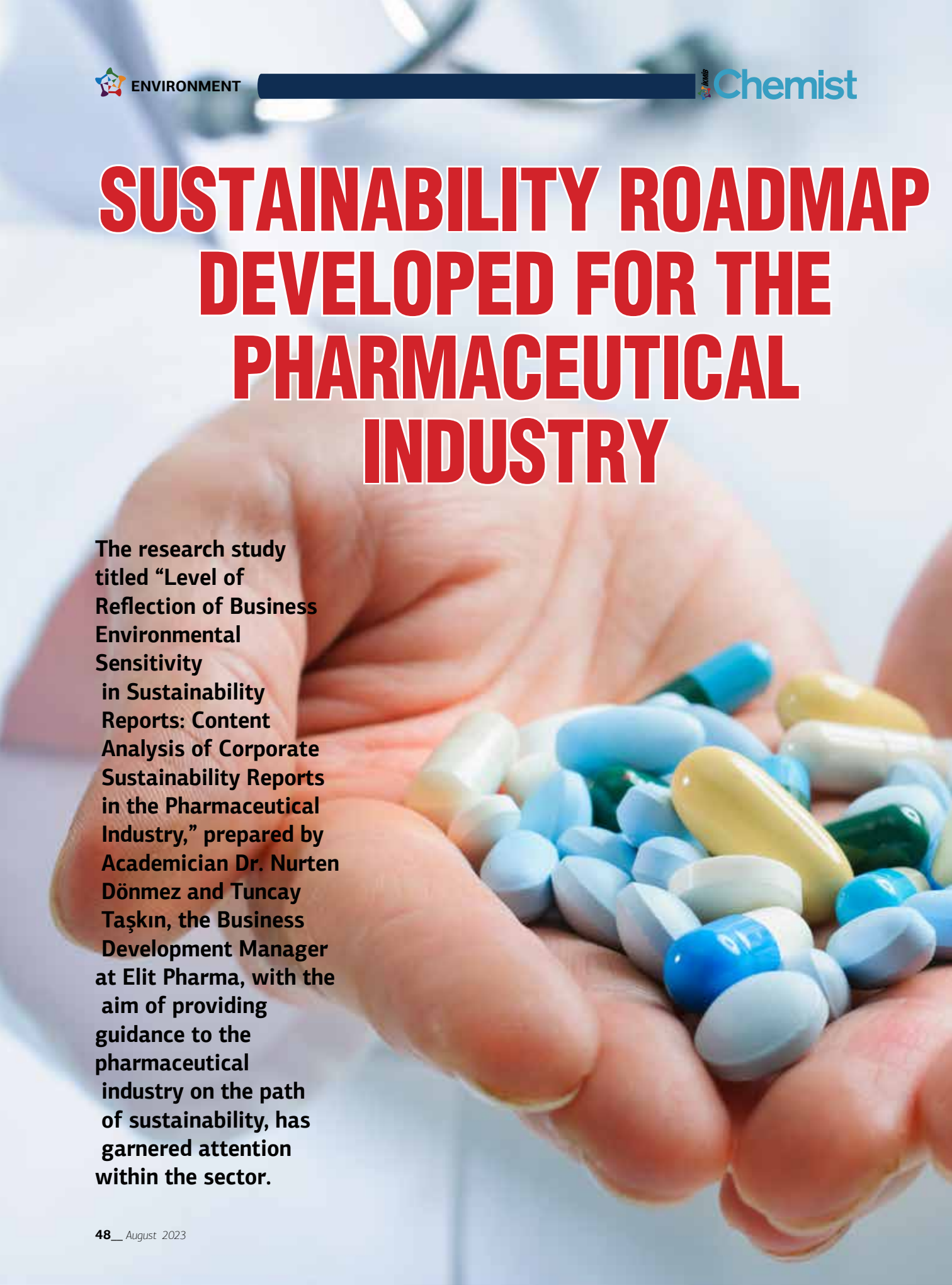
INCREASING GLOBAL MARKET SHARE WITH THE TURKISH CHEMICAL AGENCY

Pelister reminds that the Kimya Teknoloji Merkezi (Chemistry Technology Center) project, which they have been working on for some time, has reached its final stage. He also mentions their medium-term goal of implementing the Türkiye Chemical Agency project. Pelister continues his words regarding the projects that will empower the chemical industry: "We have completed the establishment of our company for the Chemistry Technology Center project. With the support of our Ministry of Industry and Technology, we have completed the allocation of our center building in Bilişim Vadisi and reached the contract stage for our 25 million TL support allocation from the Istanbul Development Agency. In the final stage, we are waiting for budget approval from the Ministry of Trade for the investment amount. With the KTM project, we aim to establish a new ecosystem focused on high technology and high added value. As the next step in our future vision, we want to organize an 'International Chemical Summit' in our country. By bringing together the global players of our industry, public institutions, company CEOs, academics, and all stakeholders of chemistry, we aim to prepare our industry's export strategy document to reach the level of countries with high income from chemistry. Additionally, with our Türkiye Chemical Agency project, which will be a first, we aim to increase the Turkish chemical industry's global market share from over 0.5% to above 1%."

THE ROADMAP TO SUCCESS THAT LED TO THE SUMMIT

As İKMİB (İstanbul Chemicals and Products Exporters' Association) celebrates its rightful pride in export leadership, the roadmap followed to achieve this success gains paramount importance. After the pandemic, İKMİB diligently conducted its operations, realizing 10 national participation events in 21 different countries, 8 information stands, and 13 trade fair visits in 2022. Alongside these events, İKMİB also accomplished a Türkiye promotional stand, six sectoral trade delegations, one preliminary delegation, and five UR-GE (International Competitiveness Development) projects, thus paving the way for exporters to gain a larger share in global trade. In 2023, İKMİB will continue its global activities, organizing 22 trade fair national participations in 14 countries, including the United Kingdom, the Netherlands, Saudi Arabia, Panama, Germany, Russia, the United States, Italy, the UAE, Hong Kong, Kenya, Nigeria, South Africa, Switzerland, Spain, Singapore, Brazil, Argentina, France, the Philippines, and Colombia. Furthermore, among these events, six information stands and six trade delegations are also planned to be organized. Information shared by İKMİB emphasizes that in addition to EU countries, the South American region, African countries, Russia, Saudi Arabia, the United Arab Emirates, distant East Asian countries like China, Vietnam, and Thailand are also on the radar for exports.

SUSTAINABILITY ROADMAP DEVELOPED FOR THE PHARMACEUTICAL INDUSTRY



The research study titled "Level of Reflection of Business Environmental Sensitivity in Sustainability Reports: Content Analysis of Corporate Sustainability Reports in the Pharmaceutical Industry," prepared by Academician Dr. Nurten Dönmez and Tuncay Taşkın, the Business Development Manager at Elit Pharma, with the aim of providing guidance to the pharmaceutical industry on the path of sustainability, has garnered attention within the sector.

Tuncay Taşkın
Elit Pharma's
Business Development Manager

The approach of sustainability, which has become the central theme of environmental and climate issues, has taken center stage on the global agenda in recent years. As numerous studies are conducted on sustainability, efforts are being made to outline roadmaps for the future. Acknowledging the efforts of the pharmaceutical industry in the realm of sustainability and producing a research article that is unparalleled in Türkiye, Academician Dr. Nurten Dönmez and Elit Pharma's Business Development Manager Tuncay Taşkın also highlight this field. The research article by Dr. Dönmez and Taşkın, titled "Level of Reflection of Business Environmental Sensitivity in Sustainability Reports: Content Analysis of Corporate Sustainability Reports in the Pharmaceutical Industry," has been published in the Dumlupınar University Journal of Social Sciences, successfully capturing the interest of various sectors.

"Sustainability Reflection Level of Businesses' Environmental Sensitivity in Sustainability Reports: Content Analysis of Corporate Sustainability Reports in the Pharmaceutical Industry" study was conducted by examining 15 domestic and foreign companies from the pharmaceutical industry. The research was authored by analyzing the contents of sustainability reports voluntarily published by these companies within the scope of the Global Reporting Initiative (GRI). The study aims to draw attention to the significance of environmental practices within the pharmaceutical industry, address the issue of whether the environmental damage can be reduced, highlight which practices are prioritized by businesses in comparison to each other,


Dr. Nurten Dönmez

and emphasize the measures developed. The research aims to provide guidance to the sector in these areas.

Moreover, the research raises the subject of sustainable development, contributing to leaving a more livable world for future generations. It also anticipates that businesses will learn and utilize the environmental standard reporting assessment system, setting an example for each other.

PHARMACEUTICAL INDUSTRY DIRECTLY IMPACTS QUALITY OF LIFE

The research underscores that the pharmaceutical industry, which plays a significant role in health preservation and improving quality of life, is dynamically evolving due to increased income levels, environmental factors, and technological advancements, resulting in longer and higher-quality life spans for individuals. The study highlights the pharmaceutical industry's critical role in countries' healthcare systems by providing drugs that directly affect the quality of life of the population. It further mentions that the expanding and aging global population is expected to lead to increased importance and use of drugs. However, along with this development, concerns arise about the potentially greater impact on ecosystems and health in the long term, as the aging population and drug usage rates are projected to rise. Additionally, the increase in production quantities within the pharmaceutical industry is expected to be accompanied by heightened environmental risks.

"The pharmaceutical industry, as one of the world's largest industries, is both the main source of and a potential solution to the harmful effects of climate change and environmental pollution. The issue of sustainability in the pharmaceutical industry should be approached from a managerial perspective. The chemical composition of drugs, the hazardous effects of pharmaceutical waste on the environment and human health, and the rigorous regulation and control of expired medications are critical matters. An environmentally appropriate waste management system and control in the pharmaceutical industry are important for sustainability" concludes the research article.

THE RESEARCH DERIVES FROM ANALYSIS OF COMPANIES' SUSTAINABILITY REPORTS

"This study investigates whether the voluntary utilization of the environmental standard reporting assessment system by businesses can help mitigate adverse environmental impacts in developing countries, and whether these businesses need to engage in data reporting to what extent in order to evaluate environmental practices. To achieve this objective, content analysis of the sustainability reports of 15 companies operating in the pharmaceutical industry in Türkiye and worldwide, which voluntarily published sustainability reports under the Global Reporting Initiative (GRI) framework, was conducted for the year 2020. The 15 companies within the scope of this study constitute approximately 40% of the $1.265 billion global pharmaceutical market for the year 2020. This article proposes ideas that allow for the understanding of how the sustainability theme is approached in the management literature within the pharmaceutical industry, thus providing academics with guiding information for future research in the sector and sustainability, as well as for businesses in the pharmaceutical industry.

The research outcome indicates that businesses make reasonable efforts to disclose their environmental performance in accordance with the GRI Sustainability Reporting Guidelines. It can be said that these guidelines provide a solid and ready tool for reporting comprehensive progress in all aspects of environmental activities. The voluntary adoption of the guidelines by most businesses in the pharmaceutical industry will enhance transparency, reliability, and comparability in sustainability reporting. As a result of the study, it is observed that while GRI aims to offer a standardized set of sustainability reporting rules to address the formation of a common language in reporting, more time is needed for GRI reports to reach the standardization level of uniform chart of accounts in financial reporting.

The lack of adherence of sustainability-related reporting to internationally uniform rules, albeit supportive of each other, and the existence of various standard reports generated with content developed by different organizations make it difficult to compare these reports with each other."

ENVIRONMENTAL SENSITIVITY FOR A SUSTAINABLE WORLD IS CRUCIAL

These reports, which are under the initiative of businesses rather than being mandatory, not only grant prestige to businesses but their true benefits should not be overlooked. Environmental sensitivity for a sustainable world holds vital importance. Leaving a livable world for future generations is the responsibility of the current generation. Businesses' environmental awareness during production stages creates a significant impact as an example for other businesses. The analysis revealed that some of the GRI environmental standards are not reported by businesses. Undoubtedly, the absence of reporting certain items does not imply businesses' insensitivity to the environment or neglect of actions related to those items; it merely indicates non-reporting. For instance, some companies like Pfizer, while not present in GRI reports, highlight environmental measures they have taken and beneficial actions on their websites. Thus, it can be concluded that GRI reports have not yet achieved the desired level of providing clear information. Nevertheless, reporting according to GRI standards is a positive step towards achieving uniformity and standardization. Businesses reporting GRI environmental standards with sustainability sensitivity are found to be inspiring for the sector. Organizations that appreciate these efforts also exist. For instance, Johnson & Johnson has been awarded the prestigious World Environment Center Gold Medal twice for sustainability leadership. Similarly, Abdi İbrahim won the Gold Award in the Sustainability Report category at Istanbul Marketing Awards 2021 with their 2020 sustainability report, and even earned the Grand Award in the Annual Report category at NYX Awards 2022 with their 2021 sustainability report.

As stipulated in GRI standards, a managerial approach to sustainability is highly crucial for businesses. When businesses communicate this approach to their employees and other stakeholders, environmental initiatives will be more robust. Through reporting, businesses and individuals can inspire each other, and competition in pursuit of a noble goal such as environmental awareness can contribute to leaving a more livable world for both the current and future generations.

This study sheds light on future academic research on sustainability in the pharmaceutical industry, such as waste management, cleaner production, green chemistry, industry's greenwashing tactics and sustainability, recycling, greenhouse gas emissions, and carbon footprint. Additionally, during this research, it became apparent that there are various aspects of academic literature related to sustainability in the pharmaceutical industry that have yet to be thoroughly explored. Considering the impact of how the pharmaceutical industry is changing and affecting the hope of improving individuals' quality of life and leaving a better world for future generations through academic research, the industry is open to new research opportunities."

THE RESEARCH INCLUDED THE PHARMACEUTICAL INDUSTRY'S MOST IMPORTANT COMPANIES

Environmental Sensitivity in Sustainability Reports: Content Analysis of Corporate Sustainability Reports in the Pharmaceutical Industry" by Dr. Dönmez and Taşkın was prepared by examining the following companies: Abdi İbrahim, Eczacıbaşı, Deva Holding (Türkiye), Johnson & Johnson, Bristol-Myers Squibb Company, Merck & Co, Gilead (USA), Recordati (Italy), Novartis, Roche (Switzerland), Sanofi (France), GlaxoSmithKline (United Kingdom), Bayer, Pfizer (Germany), Takeda (Japan).

The rationale behind selecting the pharmaceutical industry for this research is also provided in the research report: "The pharmaceutical industry has been chosen as the study area considering its importance for environmental sustainability in the future due to reasons such as high energy consumption, global supply chains, environmental pollution associated with pharmaceutical production, and significant output of packaging waste."