

# TURKISH JOURNAL OF CHEMISTRY

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SPECIAL ISSUE  
FOR THE



100<sup>th</sup>

ANNIVERSARY  
OF THE REPUBLIC  
OF TÜRKİYE



# TURKISH JOURNAL OF CHEMISTRY

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VOLUME 47 • ISSUE 5 • 2023

ISSN 1300-0527 • E-ISSN 1303-6130

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- The Turkish Journal of Chemistry is a bimonthly multidisciplinary journal published by the Scientific and Technological Research Council of Turkey (TÜBİTAK).
- The journal is dedicated to dissemination of knowledge in all disciplines of chemistry (organic, inorganic, physical, polymeric, technical, theoretical and analytical chemistry) as well as research at the interface with other sciences especially in chemical engineering where molecular aspects are key to the findings.
- The journal accepts English-language original manuscripts and contribution is open to researchers of all nationalities.
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- All manuscripts are peer-reviewed and electronic processing ensures accurate reproduction of text and data, plus publication times as short as possible.

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## ABSTRACTED

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All the articles published in this issue are dedicated to the  
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## Foreword

It is with great pleasure and honor that the Turkish Journal of Chemistry publishes this special issue to celebrate the 100th Anniversary of the Turkish Republic. This esteemed journal aims to advance the understanding and dissemination of cutting-edge research in all branches of chemistry. As the President of the Scientific and Technological Research Council of Türkiye (TÜBİTAK), I am delighted to witness the remarkable strides taken by our researchers in the field of science, particularly in the field of chemistry.

Within the framework of the National Technology Move, the collaborative and inclusive approach of our R&D and innovation ecosystem holds strategic importance. Through this approach, we are leveraging all our strengths to enhance result-oriented processes in finding solutions. As an institution celebrating its 60th anniversary in this Turkish Century, we, in TÜBİTAK, are putting this approach into practice, aligning with our aspirations for 2053.

Complex challenges, including the pressing issues of climate change and sustainability, demand a collaborative approach, focusing on shared success, to provide both multidisciplinary and multistakeholder solutions. Chemistry is often acclaimed as the central science due to its profound connections with physics, mathematics, biology, medicine, the earth, and environmental sciences. With its diverse branches and interdisciplinary nature, chemistry plays an essential role in addressing global issues and achieving sustainable development goals.

Since the early 2000s, significant progress has been made by our researchers and industries in the field of chemistry. TÜBİTAK has been a major supporter of proposals in the field of chemistry. The success rate of proposals in the chemical industry in technology and innovation programs has increased from 9% to 12% since the early 2000s, and the success rate of proposals in the field of chemistry in research funding programs has consistently been over 25%. It has always been the case that research project applications in the field of chemistry account for more than 30% of basic sciences applications. TÜBİTAK also places a strong emphasis on supporting young researchers to participate in collaborative research: Programs like TÜBİTAK's STAR program provide support to undergraduate researchers across a wide range of scientific disciplines, including chemistry. TÜBİTAK offers a comprehensive range of fellowships and grants for early-career researchers, including support for postdoctoral researchers seeking international experience, and assistance for early-career scientists who wish to return to Turkey or conduct research in our country. Regardless of the scale of the challenges, they can be better addressed through collective effort.

In this special issue of the Turkish Journal of Chemistry, you will find a diverse array of articles, ranging from fundamental research to applied studies, all of which contribute to the advancement of knowledge and its practical applications. We hope that the research published here will inspire future generations of scientists, ignite new avenues of exploration, and further the progress of chemistry as a transformative force for the betterment of society.

I extend my heartfelt gratitude to all authors, reviewers, and editors for their contributions to the Turkish Journal of Chemistry. Through their valuable work, they have shaped this special issue into what it is today. In the 100th Anniversary of the Turkish Republic and beyond, for a sustainable future, let us push the boundaries of knowledge in Chemistry and other research fields through collaborative efforts.

Prof. Hasan MANDAL  
President, TÜBİTAK