



EDITOR-IN-CHIEF'S WORD

Dear Readers,

The Croatian Academy of Engineering devotes great care to the publication of our regular issues, which cover a wide range of interesting topics. In our latest issue of Engineering Power, we are devoted to two interesting areas: inorganic chemical technology and metallurgy. With this issue, we aim to provide our readers with valuable insights into these fascinating fields. By addressing inorganic chemical technology and metallurgy, we aim to shed light on their importance and the ongoing advances that are shaping modern engineering practice. This endeavor is consistent with our important goal of reindustrializing the country, and we hope to demonstrate the transformative potential of these disciplines.

Editor-in-Chief

Vedran Mornar, President of the Croatian Academy of Engineering



EDITOR'S WORD

Dear readers,

It is my great pleasure to present the issue of Engineering Power edited by Prof. Stanislav Kurajica, Ph.D. In the four articles in this issue, he has succeeded in presenting the most important scientific research activities of the Department of Inorganic Chemical Technology and Nonmetals of the University of Zagreb, Faculty of Chemical Engineering and Technology. Bioactive glass composite, ceria nanoparticles catalyst, thin films for energy conversion, and acoustic cement are the scientific topics covered in this issue. Enjoy reading!

Editor

Bruno Zelić, Vice-President of the Croatian Academy of Engineering



FOREWORD

Dear readers,

The Department of Inorganic Chemical Technology and Metallurgy of the Chemical Engineering Institute of the Higher technical school was founded in 1922. Over time, the Department operates as part of the Faculty of Engineering, the Faculty of Technology and finally the Faculty of Chemical Engineering and Technology of the University of Zagreb. The Department has been dealing with materials since the very beginning, eventually becoming internationally recognizable in the areas of glass, ceramics and mineral binders. Accordingly, it changed its name to the Department of Inorganic Chemical Technology and Nonmetals. At the beginning of millennium, the Department turned to nanotechnology and new materials, and if it ever changes its name again, according to the area of scientific, teaching and professional work, the name Department for Advanced Materials and Nanotechnology would suit it best. The Department continues to be characterized by intense scientific activity, competitive projects and publications in esteemed journals. In 2022, five professors, two senior assistants, two postdoctoral students, one assistant and seven doctoral students worked at the Department. During that year, one PZS, four HRZZ projects, three IRI projects and four bilateral projects were carried out at the Department, also four financial grants for research from the University of Zagreb were received. Again, during that year, 29 scientific papers were published in journals cited in the CC database, as well as numerous other scientific papers. Four scientific groups can be clearly distinguished in the Department; my intention was to present their work through topics of their choice. Although each of the groups has several areas of research in which they have top competences, to my satisfaction, they chose the topics on which they are currently most active. Thus, papers on bioactive glass composite, ceria nanoparticles catalyst, thin films for energy conversion, and acoustic cement boards are included. I hope you find some of these topics close to your own interests.

Guest-Editor

Stanislav Kurajica, University of Zagreb, Faculty of Chemical Engineering and Technology