
# SERBIATRIB '25

## 19th International Conference on Tribology

14 – 16 May 2025, Kragujevac, Serbia

# PROCEEDINGS


SERBIATRIB '25

Serbian Tribology Society

University of Kragujevac
Faculty of Engineering

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**EDITOR: Slobodan Mitrović**

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# 19th International Conference on Tribology – SERBIATRIB '25

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## Preface

The International Conference on Tribology – SERBIATRIB is a well-established scientific event, traditionally organized by the Serbian Tribology Society every two years since 1989. Over the decades, the conference has been hosted in several prominent locations across Serbia and the region, including Kragujevac (1989, 1991, 1993, 1999, 2005, 2007, 2011, 2013, 2017, 2019, and 2023), Herceg Novi (1995), Kopaonik (1997), and Belgrade (2001, 2003, 2009, 2015). Continuing this tradition, the 19th International Conference on Tribology – SERBIATRIB '25 will take place in Kragujevac from May 14 to 16, 2025, bringing together researchers, academics, and industry professionals from around the world to share their latest findings and innovations in the field of tribology.

This Conference is organized by the Faculty of Engineering, University of Kragujevac, in collaboration with the Serbian Tribology Society (STS). Through organizing scientific conferences such as SERBIATRIB, STS plays a vital role in promoting the fundamentals of tribology and providing a platform for engineers and researchers to share their knowledge, present innovative solutions, and discuss the latest research developments in the field.

The scope of the 19th International Conference on Tribology – SERBIATRIB '25 encompasses the current state-of-the-art and emerging trends in tribology research and its applications. Two key aspects of modern tribological practice deserve particular attention. Firstly, the demand for increased machinery productivity requires equipment to operate under higher loads, speeds, and temperatures—making it crucial to identify effective tribological solutions that can ensure performance, durability, and reliability. Secondly, advancing tribological knowledge significantly contributes to the conservation of both materials and energy, aligning with global efforts toward sustainability and efficient resource use.

The Conference program typically covers a wide range of topics, including: fundamentals of friction and wear; tribological properties of solid materials; surface engineering and coating tribology; lubricants and lubrication; tribotesting and tribosystem monitoring; tribology in machine elements; tribology in manufacturing processes; tribology in transportation engineering; design and analysis of tribological contacts; sealing tribology; biotribology; nano- and microtribology, as well as other areas closely related to tribology.

Highlighting the global relevance of tribology, a total of 92 abstracts and 75 papers authored by researchers from 35 countries — including Algeria, Australia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, China, Croatia, Czechia, Germany, Greece, Hungary, India, Iraq, Italy, Jordan, Kuwait, Lithuania, Malaysia, Mexico, Montenegro, Netherlands, Nigeria, Pakistan, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Turkey and Ukraine — have been published in the Book of Abstracts and the Proceedings.

All papers presented at the conference are organized into eleven thematic chapters:

- Fundamentals of friction and wear
- Tribological properties of solid materials
- Surface engineering and coating tribology
- Lubricants and lubrication
- Tribology in machine elements
- Tribology in manufacturing processes
- Design and calculation of tribocontacts
- Biotribology
- Other topics related to tribology

It was a great pleasure for us to organize this Conference. We hope that bringing together specialists, research scientists, and industrial technologists, as well as the publication of the Book of Abstracts and the Proceedings, will inspire new ideas and concepts and promote further advancements in the field of tribology.

I would like to express my sincere gratitude to the Scientific and Organizing Committees, as well as to everyone who contributed to making this Conference a success.

The Conference is financially supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia, Lotrič Metrology and Ansar-Analitika Instrumenti.

We wish all participants a pleasant stay in Kragujevac and look forward to welcoming you all at the 20th International Conference on Tribology – SERBIATRIB '27.

Kragujevac, May 2025

Editor
Slobodan Mitrović

*NOTE:*
*The authors have full responsibility for the originality and content of their own papers.*

# Contents

## *Fundamentals of friction and wear*

## *Tribological properties of solid materials*

## *Surface engineering and coating tribology*

## *Lubricants and lubrication*



## *Tribology in machine elements*

## *Tribology in manufacturing processes*

## *Design and calculation of tribocontacts*



## *Biotribology*



## *Other topics related to tribology*