



**University of Kragujevac
Faculty of Technical Sciences Čačak**



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**7th International Scientific Conference
Technics and Informatics in Education**

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Preface

Seventh international scientific conference Technics and Informatics in Education – TIE 2018 aims to promote and support research in education of new generations in technical and technological fields at all levels of education and contribute to technology development and education improvement.

Some 72 papers have been submitted within various fields of technical, IT and technology-supported education at all educational levels – primary, secondary, higher education and education for adults. After reviewing, 64 papers have been accepted for the current edition of Book of abstracts in the form of plenary lectures and original scientific papers.

Authors are responsible for any spelling, grammar and stylistic errors in their work.

Articles in the *Proceedings TIE 2018* are organized by the following topics:

- Plenary lectures
- Technics, Technology and Informatics in Education
- IT Education and Practice
- Engineering Education and Practice

Special activities within the Conference are the following:

- Round Table – University education of the professors of technics and IT in the region
- The Day of Computing – 20 years of Computer engineering studies at the Faculty of technical sciences Čačak
- Poster Session: Research project in the field of technical sciences and teaching at the Faculty of technical sciences

The Scientific and Organizing Committee wishes to express gratitude to all the professionals from various fields who contributed to the Conference.

We would like to thank Partner Institutions which participated as co-organizers of the Conference.

We express special thanks to the Ministry of Education, Science and Technological Development of the Republic of Serbia for financial contribution to this scientific gathering.

Ivan Milićević
Editor

Chairmen's Foreword

Faculty of Technical Sciences Čačak, University of Kragujevac, has the honour to organize the seventh international scientific conference 'Technics and Informatics in Education – TIE 2018'.

The Conference continues the tradition of gathering scientific associates and professionals in technical, technological and IT education in primary and secondary schools in Serbia. For the last 50 years this assembly has been organized in various forms (scientific and professional conferences and consultations on technical education, information technologies, technical seminars, etc.). These scientific and professional gatherings have had a huge impact on the development of technical education, mostly in primary and secondary education. The impact is also noticeable in both higher and university education. Six conferences titled Technics and Informatics in Education were held in 2006, 2008, 2010, 2012, 2014 and 2016. Still, the necessity for continuous, organized scientific assembly related to technics and informatics in new surroundings has increased.

The aim of the conference TIE 2018 is to improve the exchange of knowledge and experience between experts, scientific associates and professionals from Serbia, neighbouring countries and Europe, engaged in the subject matter. The conference will provide an analytical review of technical (technological) and IT education, as well as education regarding technical (technological) and IT achievements including assistive technology, teaching aids, student books, etc. Teacher training is considered highly significant for research and development in education in this field.

The Conference includes technical (technological) education at all levels: from preschool institutions, primary and secondary schools over higher and university education, to various forms of lifelong learning.

Furthermore, the special emphasis will be given to the place, importance, and role of informatics and IT in technical and professional education, as well as correlation with other natural, social and education science.

A comprehensive analytical review will be given on the state of education in the fields of technics and informatics, as well as the contribution of technical and IT education to other fields.

The conference results are expected to provide the basis for planning the development of education in Serbia, especially in the fields of technical (technological) education, engineering, IT and informatics. The results are also expected to support and contribute to the exchange of educational patterns in the region and coordination with European trends in this field.

We hope that experience gained at the Conference will be very useful both for the participants and for the development of technical-technological education field.

Danijela Milošević
Željko M. Papić
Co-Chairs

Organization

The 7th International Scientific Conference Technics and Informatics in Education – TIE 2018 is organized by the Faculty of Technical Sciences Čačak, University of Kragujevac, Serbia.

The Conference is held under the patronage of:

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