



Proceedings of the selected papers,
abstracts and posters of
the First International Conference
**TRENDS IN HERITOLOGY: INDUSTRIAL
AND INTANGIBLE HERITAGE**

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PREFACE

The Proceedings includes the selected papers, abstracts and posters presented at The First International Scientific Conference "TRENDS IN HERITOLGY: INDUSTRIAL AND INTANGIBLE HERITAGE". The Conference was held on 28th June 2018 at High School of Engineering Professional Studies "Tehnicum Taurunum", Zemun, Belgrade.

It was organized by Central Institute for Conservation, Belgrade, Association for Ethics and Evaluation in Culture and Science, Belgrade and High School of Engineering Professional Studies "Tehnicum Taurunum", Belgrade.

The aim of Conference was to bring together on an international level scientists and specialists for discussion of current research progress and problems concerned primarily with industrial and intangible heritage.

The Conference brought together scientists from following institutions: Central Institute for Conservation, Belgrade; University of Belgrade: Institute of Nuclear Science "Vinca", Faculty of Electrical Engineering, Faculty of Mechanical Engineering, Faculty of Agriculture, Faculty of Philosophy, Faculty of Philology, Faculty of Traffic and Transport, Faculty of Civil Engineering, Faculty of Architecture, Faculty of Political Science, Faculty of Mining and Geology, Faculty of Technology and Metallurgy, Technical Faculty in Bor; High School of Engineering Professional Studies "Tehnicum Taurunum", Belgrade; IHIZ – IRC Technoexperts, Zemun; University of Novi Sad: Technical Faculty "Mihajlo Pupin" Zrenjanin, Institute for Technology of Nuclear and other Mineral Raw Materials; University Singidunum, Belgrade; Universidad de Madrid, Spain, Brown University, USA; Southampton University, Great Britain; College of Science and Technology, Lincoln University, USA; University of Baghdad, Iraq; University Sorbonne, France; University of Basilicata – Potenza, Italy; National R&D Institute for Welding and Material Testing- ISIM Timișoara, Romania; Innovation Centre Faculty of Mechanical Engineering, Belgrade; Electrical Engineering Institute "Nikola Tesla", Belgrade; ICT College of Vocational Studies, Belgrade; Regional Center for Talents Belgrade 2; Railway High School Vocational Studies, Belgrade; Technical School Ada, Zrenjanin; University of Montenegro: Faculty of Philology, Niksic, Faculty of Political Science; University of East Sarajevo, Faculty of Technology; School of Computing, University Union; Plan Protection Directorate; Analysis a.d.d.; DATA COM; Metalac, d.o.o.; Gornji Milanovac; Perić & Perić d.o.o. Požarevac; TELEKOM, Republika Srpska.

The Conference had a multidisciplinary character, exhibited a total of 47 scientific papers, submitted by over 90 participants from 10 countries. The aim of the Conference was, also, to connect different/various fields of science, because many common points between different research areas could be found. Collecting researchers from different/various scientific disciplines open possibilities of developing new technologies or improving the old ones. Therefore, the Conference covered trends in heritology (industrial and intangible) from the points of view of the following fields: mechanical science, transport and traffic engineering, material science, metallurgy, electrical engineering, agriculture, architecture, medicine etc.

Although, the Conference had multidisciplinary character, the participants had very active discussion after the presentations and we hope that it will provoke the further cooperation between them with the new ideas.

The papers presentation was by oral and poster. The all papers are reviewed. The authors only are responsible for the accuracy and contents of all published papers.

We would like to thank all authors who have contributed to this Proceedings and also to the Scientific Committee, Organizing Committee, reviewers, speakers, chairpersons, and all the conference participants for their support for a successful scientific meeting.

Editors



CONTEMPORARY TREND IN DOCUMENTATION AND ANALYZES OF CULTURAL HERITAGE OBJECTS

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Contemporary trend in reverse engineering in the area of architecture, civil engineering and surveying assumes application of contemporary software tools and measuring devices, where the result – „state of the art“ of a cultural heritage monument and its terrain surroundings is a point cloud in referenced 3D coordinate system. Terrestrial laser scanning (TLS), as the measuring method, gives accurate data on an object/terrain, available for further processing (according to professional needs) and analysis. Contemporary software solutions for point cloud data processing enable results for the purposes of accurate 2D technical documentation, creation of 3D realistic mesh models, presentations, animations and other deliverables in overall research processes. This paper presents the results of architectural-geometric analysis of the Kings' church exterior in Studenica monastery, based on point cloud data provided by TLS at the site during 2017 and partly on existing technical documentation. Kings' church (originally dedicated to Ss. Joachim and Anna) is a legacy of the king Milutin (the end of 13th / beginning of 14th c), very modest in dimensions, almost square shaped in its layout. Its architectural structure is composed as a compressed inscribed cross. It belongs to a group of one nave domed churches built by the principles of Byzantine architectural style.

The paper presents 2D projections (cross-sections and characteristic facades) of the church obtained from point cloud results, along with its proportional analyses.

Key words: Terrestrial laser scanning, technical documentation, architectural – geometric analysis, proportions, cultural heritage monuments.

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