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Faculty of Technology  
University of Novi Sad

**VIII  
STUDENTS'  
MEETING**

Processing and Application  
of Ceramics

December 2-5, 2009

**Programme and Book of Abstracts of The Eighth Students' Meeting – SM-2009, "Processing and Application of Ceramics"** publishes abstracts from the field of ceramics, which are presented at traditional international Students' Meeting.

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**Preface**

*The Eighth Students' Meeting "Ceramics", is a great honor for the Faculty of Technology, University of Novi Sad. The idea of this meeting, which is today a tradition, is to bring together scientists from all over the world, to discuss the standards of the field. The papers presented at the Meeting are the result of the work of many researchers from different universities and we truly hope that they will appreciate very much the enthusiasm we have shown and we truly hope that they will continue to contribute to the future. Special thanks to all participants in the Meeting.*

*The quality of the papers presented as inspiration for the "Ceramics". This is also the papers for the future.*

*Growing from the work of students from all over the world, specific material topics for students.*

- *Advanced*
- *Ceramics*
- *Traditions*
- *Culture*

*The opening of the Meeting, we would like to welcome us at our organizing committee meeting, and especially possible.*

*A warm welcome to all participants in the meeting with many.*

T6

### THE INFLUENCE OF MECHANICAL ACTIVATION ON DRYING PROCESS

Miloš Vasić, Zagorka Radojević  
*"Institute for Testing Materials", Belgrade, Serbia*

The results of parallel scientific research about behavior of masonry clay prepared by classical procedure and mechanically activated clay have been presented in this paper. One representative sample of masonry clay from the locality Banatski Karlovac has been prepared according to classical procedure by wet grinding to the size granulation below 1 mm. The other representative sample, from the same locality was mechanically activated for 30 minutes in Fritch mill. Prepared samples characterization has been done by using X-ray, thermal characterization (DTA and TGA, DIL), granulometric test and by using some technological characterization. The obtained results show significant differences in structure, morphology and final properties of the obtained samples. The method of multi-factorial experimental design has been used for determination of the samples properties after the drying process. The mathematical relationship as a function of temperature, humidity and the velocity of drying medium was set up. The influence of the same factors on drying time duration in order to reach the critical point was also analyzed. Obtained outputs are very significant for the optimization of masonry clay product drying process and for establishing the fast drying regimes of the same products.

T7

### BIOLOGICAL EFFICIENCY OF PHOTOCATALYTIC TiO<sub>2</sub> COATINGS ON CLAY ROOFING TILES SUBSTRATE

Dmitar Zorić<sup>1</sup>, S. Markov<sup>1</sup>, M. Radeka<sup>2</sup>, J. Ranogajec<sup>1</sup>  
<sup>1</sup>*Faculty of Technology, University of Novi Sad, Serbia*  
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Photocatalytic titanium dioxide coatings on clay roofing tiles substrate have been extensively studied for possible antimicrobial application. The wide acceptance of photocatalytic TiO<sub>2</sub> to be antimicrobial efficient has led to attempts of different coating processes. This research involves a spray technique as the method for applying two different TiO<sub>2</sub> coatings: mesoporous TiO<sub>2</sub> coating based on PEG-UV light sensitive system and TiO<sub>2</sub> coating (based on commercial suspension) sensitive to visible light radiation. Photocatalytic performances of the deposited specimens are tested with model pollutants - methylene blue solution (UV light sensitive system) and rhodamin B (visible

light sensitive system). Antimicrobial efficiency of Aspergillus niger (fungus) and other microorganisms. The antimicrobial efficiency of the obtained colonies that grew on the surface of the tiles obtained by using a light sensitive system and photocatalytic titanium dioxide were correlated with the efficiency of the photocatalytic titanium dioxide.

T8

### APPLICATION OF

Teslim Kolarić  
*University of Novi Sad*

Advanced ceramics are used in various fields ranging from heat engines to automotive industries and electronics. This technology is introduced, and its application is illustrated current and future.

During the event I will present the following area that are yet to be explored.

Also, I will also show the application of like in Nigeria decorative ceramics, such as:

1. Bearing, seals and gaskets
2. Technology of aluminum and zircon sand
3. Artworks.