



Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION XI
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 18-20. September 2023.

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Book title: Serbian Ceramic Society Conference - ADVANCED CERAMICS AND APPLICATION XI Program and the Book of Abstracts

Publisher:

Serbian Ceramic Society

Editors:

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Technical Editors:

Dr. Adriana Peleš Tadić

Dr. Jelena Živojinović

Printing:

Serbian Ceramic Society, Belgrade, 2023.

Edition:

120 copies

CIP - Каталогизacija у публикацији
Народна библиотека Србије, Београд

666.3/.7(048)

66.017/.018(048)

SRPSKO keramičko društvo. Conference Advanced Ceramics and Application : New Frontiers in Multifunctional Material Science and Processing (11 ; 2023 ; Beograd)

Program ; and the Book of abstracts / Serbian Ceramic Society Conference Advanced Ceramics and Application XI New Frontiers in Multifunctional Material Science and Processing, Serbian Academy of Sciences and Art Serbia, Belgrade, 18-20. September 2023. ; [editors Nina Obradović, Lidija Mančić]. - Belgrade : Serbian Ceramic Society, 2023 (Belgrade : Serbian Ceramic Society). - 90 str. : ilustr. ; 30 cm

Tiraž 120.

ISBN 978-86-905714-0-6

a) Керамика -- Апстракти б) Наука о материјалима -- Апстракти

COBISS.SR-ID 122849545



Dear colleagues and friends,

We have great pleasure to welcome you to the Advanced Ceramic and Application XI Conference organized by the Serbian Ceramic Society in cooperation with the Institute of Technical Sciences of SASA, Institute of Chemistry Technology and Metallurgy, Institute for Technology of Nuclear and Other Raw Mineral Materials and Institute for Testing of Materials.

It is nice to host you here in Belgrade in person. We are very proud that we succeeded in bringing the scientific community together again and fostering the networking and social interactions around an interesting program on emerging advanced ceramic topics. The chosen topics cover contributions from fundamental theoretical research in advanced ceramics, computer-aided design and modeling of new ceramics products, manufacturing of nano-ceramic devices, developing of multifunctional ceramic processing routes, etc.

Traditionally, ACA Conferences gather leading researchers, engineers, specialists, professors and PhD students trying to emphasize the key achievements which will enable the widespread use of the advanced ceramics products in the High-Tech industry, renewable energy utilization, environmental efficiency, security, space technology, cultural heritage, etc.

Serbian Ceramic Society was initiated in 1995/1996 and fully registered in 1997 as Yugoslav Ceramic Society, being strongly supported by American Ceramic Society. Since 2009, it has continued as the Serbian Ceramic Society in accordance with Serbian law procedure. Serbian Ceramic Society is almost the only one Ceramic Society in South-East Europe, with members from more than 20 Institutes and Universities, active in 9 sessions..

Dr. Nina Obradović
President of the Serbian Ceramic Society

Dr. Suzana Filipović
President of the General Assembly of the Serbian Ceramic Society

Conference Topics

- Basic Ceramic Science & Sintering
- Nano-, Opto- & Bio-ceramics
- Modeling & Simulation
- Glass and Electro Ceramics
- Electrochemistry & Catalysis
- Refractory, Cements & Clays
- Renewable Energy & Composites
- Amorphous & Magnetic Ceramics
- Heritage, Art & Design

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Institut za tehnologiju nuklearnih i drugih mineralnih sirovina

C₃N₄ semiconductor in combination with TiO₂ is an excellent strategy to enhance the photocatalytic activity under visible light irradiation. In this study, g-C₃N₄/TiO₂ photocatalyst was successfully synthesized and used in single and simultaneous photodegradation of cationic Methylene Blue and anionic Orange G dyes. To examine the heterojunction between g-C₃N₄ and TiO₂ and the mechanism of the transport pathway of photogenerated e⁻/h⁺, the photoluminescence spectra and radical scavenger study were applied. The present research offers a novel approach in reaction mechanism analysis for degradation of dye pollutants in single/mixed solutions and suggests a strategy for determination of heterojunction type in g-C₃N₄/TiO₂ systems.

Acknowledgement: This work was financially supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Grant No. 451-03-47/2023-01/200026 and 451-03-47/2023-01/200135).

ORL9

The lumped approach in drying modeling of roofing tiles – variable effective diffusivity determination

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In this paper, the drying modeling of roofing tiles was done using a "lumped" approach. In other words, several forces that are influencing internal moisture transport are combined to create effective moisture diffusivity. For this reason, the effective diffusivity coefficient was added to Crank's diffusion equation. In their earlier works, the authors published the solution to the diffusion equation, which assumes that effective diffusivity is constant. It was demonstrated that, particularly if shrinkage is not taken into account during the computation stage, the simulated drying curves differ from the experimental results. The next step was to ascertain the time-dependent effective diffusivity and to more precisely anticipate the drying kinetic. The general functional relationship between effective moisture diffusivity and Fourier number was first determined to fulfill this assignment. Experimental proof of the proposed model was provided. Less than 3% of the outcomes from the simulation and the experiment deviated from each other. This was a resounding affirmation that effective diffusivity is not constant during drying and that all internal transport mechanisms are observable in their time-dependent relation.

Acknowledgments: This investigation is supported by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Contract No. 451-03-47/2023-02/200012).