



PROJECT "THEORY AND APPLICATIONS OF SINTER-CRYSTALLIZATION" DN 19/7

## Program

**1<sup>st</sup> Day, Monday 27<sup>th</sup> September 2021**

14:00 - 15:00 Registration

15:30 - 16:00 Open Talk – Sinter-Crystallization Version in Sofia and L'Aquila, Alexander Karamanov

16:10 - 16:40 Sol-gel chemistry as a tool for the preparation of functional aerogel powders and composites, Stoyan I. Gutzov, Nina Danchova, Dimitar Shandurkov

16:50 - 17:20 Applying Avramov's useful method for analyzing DTA data on overall crystallization kinetics on glass powders; comparing to other methods, Kati Avramova, Issak Avramov, Alexander Karamanov

17:30 - 18:00 Is the good (sigmoid) fit enough to implement the "true" kinetics when modelling quasi-2D crystallization in glasses?, Vesselin Tonchev

18:10 - 20:30 Welcome Drink and Poster Section



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**2<sup>nd</sup> Day, Tuesday 28<sup>th</sup> September 2021**

10:00 - 10:30 Sintering kinetics, phase transformations and melt properties during the vitrification path of the ceramic products, Michele Dondi, Chiara Zanelli, Sonia Conte, Chiara Molinari, Matteo Ardit, Giuseppe Cruciani

10:40 - 11:10 Quantification of Transient Quartz before and after sinterization

Daniele Paganelli, Maria Chiara Vaccari, Mariano Paganelli, Chiara Venturelli

11:10 - 11:30 Coffee Break

11:30 -12:00 Effect of the addition of kaolin on the sinterability and microstructure of a glass-ceramic glaze, J. L. Amorós, E. Blasco, A. Moreno, C. Feliu

12:10 - 12:40 Sinter-crystallization and foaming of glass from metallurgical slag

Nicolai B. Jordanov, Alexander Karamanov

Lunch: 12:50 - 14:30

14:30 - 15:00 Glass-ceramics from glass powders and reactive silicone binders: from sealants to additive manufacturing, Enrico Bernardo, Hamada Elsayed, Jozef Kraxner, Dusan Galusek



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15:10 - 15:40 Sintering of a simulated high level waste in an yttrium aluminosilicate glass

Diana C. Lago, Miguel O. Prado

15:50 – 16:10 Coffee Break

16:10 - 16:40 Understanding the mixed-alkali and alkaline-earth effects on the sinterability of bioactive glasses, Murilo C. Crovace, Viviane O. Soares, Ana Candida, M. Rodrigues, Oscar Peitl, Edgar D. Zanotto

16:50 - 17:20 Laboratory X-ray micro-computed tomography for silicate materials

Ivan Georgiev, Miriana Raykovska



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**3<sup>rd</sup> Day, Wednesday 29<sup>th</sup> September 2021**

10:00 - 10:30 Crystallizing glasses for reactive and for rapid laser sealing

Christian Rüssel, Franziska Döhler, Christian Thieme

10:40 - 11:10 Sintering, crystallization shrinkage and formation of crystallization induced porosity in model diopside glasses, Alexander Karamanov

11:10 - 11:30 Coffee Break

11:30 - 12:00 Effect of microwave in glass powder sintering and sinter-crystallization

Cristina Leonelli, Elena Colombini, Paolo Veronesi, Alexander Karamanov

12:10 - 12:40 Glass powder processing, sintering, crystallization, and foaming

Boris Agea-Blanco, Carsten Blaeß, Harald Behrens, Ralf Müller

Lunch: 12:50 - 14:30

14:30 - 15:00 Computational Homogenization for Determination of Material Properties of Closed Cell Foams, Roumen Iankov, Ivan Georgiev, Maria Datcheva



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15:10 - 15:40 Sensing solutions for automotive industry, Sensata Technologies Bulgaria Ltd.

15:50 - 16:10 Coffee Break

16:10 - 16:40 Production of Sintered Glass-Ceramics at Jiangxi Pujing New Materials Co. Ltd., Hongwei Guo, Feng Liu, Peng Li, Bingji Yan, Wei Zhao, Hongwei Li, Shaodong Zhang, Fengjuan Pei, Shichan Deng, Xiaofeng Huang, Rui Wang

16:50 - 18:00 Final Discussion

20:00 - Closing



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**Posters**

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**Crystallization behavior of glasses in ZnO-B<sub>2</sub>O<sub>3</sub>-WO<sub>3</sub>-Nb<sub>2</sub>O<sub>5</sub> system**

Lyubomir Aleksandrov, Reni Iordanova, Margarita Milanova

**Crystallization in strontium-substituted barium titanate-containing oxide glass-ceramics – phase composition and microstructure**

Ruzha Harizanova, Wolfgang Wisniewski, Peter Švančárek, Georgi Avdeev, Irena Mihailova, Christian Rüssel

**Structure and phase composition of ceramics based on huge amount of MSWA**

Emilia Karamanova, Stela Atanasova-Vladimirova, Iskra Piroeva, Georgi Avdeev,  
Alexander Karamanov

**Tracing of the porosity variations with micro computed tomography during sinter-crystallization process**

Dragomir Tatchev, Alexander Karamanov

**Synthesis and possible applications of cermet materials based on Cu/ZrW<sub>2</sub>O<sub>8</sub>**

Georgi Avdeev, Nikola Mirchev, Dragomir Tatchev



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**Ceramic pigments of the garnet type synthesized by utilization of rice husk ash**

Fila Yovkova, Irena Georgieva Markovska, Tsvetan Dimitrov