



### Head

Mikołaj Szafran

### Staff

Paweł Falkowski  
Paulina Wiecińska  
Janusz Sokółowski  
Ewa Bobryk  
Marta Łukaszuk  
Roman Szerszeniewski

### Current PhD students

Milena Zalewska  
Agnieszka Antosik  
Emilia Pawlikowska  
Aleksandra Kędzińska  
Emilia Pietrzak  
Małgorzata Głuszek

### Former PhD students

Agnieszka Szudarska  
Anna Danelska  
Magdalena Gizowska  
Paulina Wiecińska  
Paweł Falkowski  
Krzysztof Perkowski  
Katarzyna Jach  
Dariusz Jach  
Wojciech Lipiec  
Paweł Wiśniewski

### Current research

- Ceramic-polymer composites for microwave applications
- Synthesis and application of organic additives in shaping advanced ceramic materials
- UV-curing polymers in the fabrication of thick ceramic films and ceramic microreactors
- Smart materials based on shear-thickening fluids
- Elaboration of ceramic inks composition

### Selected publications

Wiecinska P., Mizerski T., Szafran M., *Monoacryloyl Esters of Carbohydrates: Synthesis, Polymerization and Application in Ceramic Technology*, Carbohydrate Polymers, 111, 610, 2014

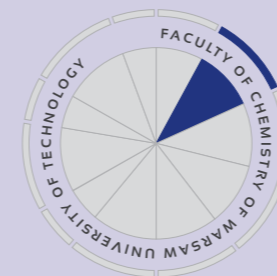
Szudarska A., Mizerski T., Sakka Y., Suzuki T., Szafran M., *Fabrication of Textured Alumina by Magnetic Alignment via Gelcasting Based on Low-Toxic System*, Journal of the European Ceramic Society, 34 (15), 3841, 2014

Wiecinska P., Graule T., Szafran M., *L-ascorbic Acid as a New Activator in Fabrication of Ceramics by Techniques Using in Situ Polymerization*, Journal of the European Ceramic Society, 34, 1581, 2014

Falkowski P., Grzelak A., *Effect of Solvents on Curing Process of Photopolymerizable Ceramic Suspensions*, Archives of Metallurgy and Materials, 58, 1411, 2013

Falkowski P., Bednarek P., Danelska A., Mizerski T., Szafran M., *Application of Monosaccharides Derivatives in Colloidal Processing of Aluminum Oxide*, Journal of the European Ceramic Society, 30, 2805, 2010

Bednarek P., Szafran M., *Thermal Decomposition of Monosaccharides Derivatives Applied in Ceramic Gelcasting Process Investigated by the Coupled Dta/Tg/Ts Analysis*, Journal of Thermal Analysis and Calorimetry, 109, 773, 2012



### Research profile

Ceramic-polymer and ceramic-metal composites  
Ceramic inks  
Saccharides in ceramic technology  
Shear-thickening fluids  
Gelcasting  
Colloidal processing  
Porous ceramic materials  
UV curable ceramic suspensions

### Collaboration

NIMS – National Institute for Materials Science, Tsukuba (Japan)  
EMPA – Swiss Federal Laboratories for Materials Science, Dübendorf (Switzerland)  
ICV – The Institute of Ceramics and Glass, Madrid (Spain)  
ISTEC-CRN – Institute of Science and Technology for Ceramics, Faenza (Italy)

### Scientific Awards

- Mikołaj Szafran was elected a new member of the World Academy of Ceramics, 2014
- Award of the Polish Ceramic Society – Janusz Sokółowski for industrial implementation of the research results, 2011
- Best poster award – Magdalena Gizowska during the E-MRS Fall Meeting, 2010

### Research equipment

- Kinexus Pro Rheometer
- Zetasizer Nano ZS
- Nikon light microscope
- Retsch ball mills
- Carbolite chamber and tube furnaces

### Additional activity

- Start-up of the factory which produces sintered lightweight aggregate on the basis of technology developed by Janusz Sokółowski
- Co-organization of the symposia at the E-MRS Fall Meeting Conference in the years: 2008, 2009, 2010, 2012, 2013, 2014
- Co-operation with industrial partners: Polsport S.A. (Bielsko-Biala), IEn Oddział Ceramiki Cerel (Boguchwała)

