

## Tentative Outline

### Special Thematic Issue for the journal *Recent Innovations in Chemical Engineering*

#### Phosphate Glass and Ceramics-unique Group of Materials with Great Potential for Engineering

Guest Editor: *Srdjan Matijašević*

- **Scope of the Thematic Issue:** Developments of phosphate glasses for a variety of technological applications, from rare-earth ion hosts for solid state lasers, low temperature sealing glasses to bioactive glasses and glasses as slow fertilizer have led to renewed interest in understanding the structures and engineering of these unusual materials. The properties that make phosphate glasses candidates for so many different applications are related to their molecular-level structures.

**Keywords:** glass, ceramics, bioactivity, fertilizer, engineering

#### Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Theory of glass, phenomenon of crystallization of glass forming melts
- Synthesis and characterization of glass and ceramics
- Bioactive glass and ceramics
- Glass as eco-friendly fertilizer

#### Tentative titles of the articles and list of contributors:

Almost a ninety years of first glass theory, what we know about glass, Mihajlo Tošić, ITNMS, Franchet d Esperey St.86, 11000 Belgrade, Serbia, e-mail: m.tosic@yahoo.com

New answers, old question and contradictions, classical theory of crystal nucleation and growth, Jurn W.P. Schmelzer, University of Rostock, Polymer Physics, Albert-Einstein-Strasse 23-25, 18059 Rostock, Germany, e-mail: juern-w.schmelzer@uni-rostock.de

Synthesis and characterisation of glasses, glass-ceramics and ceramics materials, overview, Alexander Karamanov, Rostislav Kaischew Institute of Physical Chemistry, Bulgarian Academy of Sciences, G.Bonchev Str. Block 11, 1113 Sofia, Bulgaria, e-mail:karama@ipc.bas.bg

New technological applications and recent interest in the structures of simple phosphate glasses. Richard K. Brow, Department of Ceramic Engineering, University of Missouri-Rolla, Rolla, MO 65409-0330, USA, e-mail: brow@umr.edu

Bioactive (phosphate) glass and ceramics, overview, Edgar D. Zanotto, Federal University of Sao Carlos (UFSCar), Rodovia Washington Luís, Km 235 - SP-310, 13565-905, São Carlos, Estado de Sao Paulo, Brazil, e-mail:dedz@ufscar.br

Free topic, Rada Petrovic, University of Belgrade, Faculty of Technology and Metallurgy, Karnegijeva 4, 11000 Belgrade, Serbia, e-mail: radaab@tmf.bg.ac.rs

Solubility and ion release in the phosphate glass, Jonathan C. Knowles, UCL Eastman Dental Institute, 256 Gray's Inn Road, London, WC1X 8LD, UK, e-mail: j.knowles@ucl.ac.uk

(Phosphate) glass as eco-friendly fertilizer, Goutam Hazra, Department of Chemistry, Kalna College, Kalna-713409, India, e-mail: hazragoutam1980@rediffmail.com

Structural role of (transition) metals in soil active phosphate glasses, Magdalena Szumera, Faculty of Materials Science and Ceramics, AGH - University of Science and Technology, 30-059 Cracow, Poland, e-mail: mszumera@agh.edu.pl

Phosphate based glasses unique material with great potential for engineering, overview, Hatem A. Elbatal, Glass Research Department, National Research Center, Dokki, Cairo, Egypt, e-mail: h\_elbatal@yahoo.com

**Schedule:**

✧ Thematic issue submission deadline: September 2020

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