



Vabilo na Preglov kolokvij / Invitation to the Pregl colloquium

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Velika predavalnica Kemijskega inštituta /

Great Lecture Hall

National Institute of Chemistry

Hajdrihova 19, Ljubljana, Slovenia

## **Accessing Innovative Polymers through Emulsion Templating**

PolyHIPEs were originally hydrophobic polymers with highly interconnected macroporous structures synthesized via free radical polymerization (FRP) within water-in-oil (w/o) high internal phase emulsions (HIPEs). Emulsion templating now encompasses a wide variety of synthesis chemistries and a wide variety of emulsions. Recent advances in several very different polyHIPE systems will be discussed including shape memory, stimulus-response, and renewable resource – biodegradable systems. For adsorption applications, a variety of approaches have been used to generate polyHIPEs with hierarchical porosities, porosities that combine polyHIPE macroporosity with mesoporosity and/or microporosity. For absorption applications, robust hydrogel polyHIPEs have been synthesized within oil-in-water (o/w) HIPEs using a variety of monomers. Macromolecular mixing within PHs has been enhanced by synthesizing interpenetrating polymer networks using simultaneous FRP and step growth polymerization reactions. Finally, truly closed cell polyHIPEs have been used to encapsulate aqueous solutions and organic liquids for thermal energy storage and release.

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Vljudno vabljeni / Kindly invited