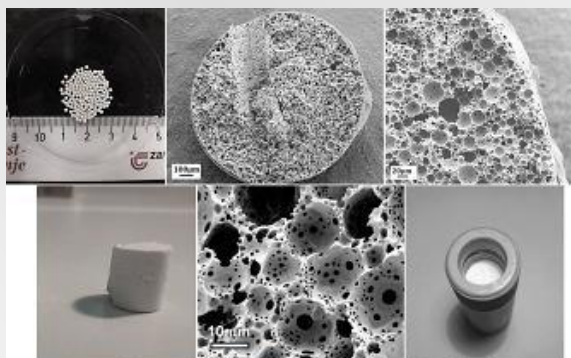


π -CONJUGATED POLYELECTROLYTE (CPE) FOAMS FOR NEW APPLICATION OPPORTUNITIES



The highly porous structures with porosities up to 95 %, low densities ($< 0.1 \text{ g / cm}^3$) and surface areas exceeding $500 \text{ m}^2/\text{g}$ are properties that distinguish our semiconducting π -conjugated polyelectrolyte (CPE) foams. Combination of such 3D-interconnected macroporous morphology and the photoactive π -electron backbone hold a great promise in the semiconductor-mediated heterogeneous photocatalysis.

TYPE OF COOPERATION

R&D cooperation and technology
licensing opportunity

INTELLECTUAL PROPERTY

LU102618

DEVELOPED BY

Department of Polymer Chemistry
and Technology

CONTACT

Knowledge Transfer Office
P: 00386 1 4760 529
E: knowledge.transfer@ki.si

MORE INFORMATION ABOUT THE INVENTION



Technology

They represent "smart" materials with properties that attract an increasing level of interest in a large number of applications, especially in heterogeneous photocatalysis e.g. degrading aquatic, atmospheric or microbial contaminants.

Main advantages

Our π -conjugated (polyelectrolyte) foams can be custom-made according to the wishes of the customer in various forms such as beads, monoliths or monolithic columns having either cauliflower or 3D interconnected macroporous morphologies. Most important, these foams possess two important features in a single functional material: π -conjugated backbone (providing organic semiconducting properties) and water-soluble ionic side chains (providing necessary hydrophilicity). Water-soluble ionic side chains make π -conjugated polyelectrolyte foams as a hydrophilic material and, thus, applicable in water-borne systems as opposed to the typically hydrophobic π -conjugated polymers.

Key words

Porous polymers, custom-made, morphology, shape