

# Nanochemistry and biotechnology

## Synthesis of mesoporous polymeric microspheres methacrylic derivatives of aromatic thiols

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This paper presents a novel method of the synthesis of mesoporous microspheres derivatives of three aromatic thiols: phenylthiomethacrylate (PSM), S,S'thiodi-4,1-phenylenebis(thiomethacrylate) (DMSPS) and bis[4(2-hydroxy-3-methacryloyloxypropoxy)phenyl]sulfide (BES.DM) with divinylbenzene. The microspheres were obtained by emulsion-suspension polymerization [1]. The porous structure obtained microspheres methacrylic derivatives of thiols was investigated by low-temperature nitrogen adsorption data.

Their chemical structure was confirmed by ATR/FT-IR spectroscopy. The morphology of microspheres has been confirmed using optical microscope MORPHOLOGI G3 Malvern.

Thermal properties were also investigated using the DSC method. The synthesized microspheres can be used as sorbents. Preliminary studies show that they can be used to adsorb heavy metal ions from aqueous solutions [2].

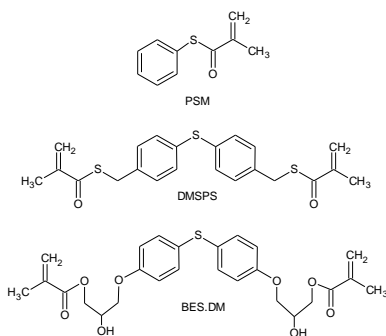


Fig.1 Chemical structure of the monomers used for copolymerization.

1. Podkościelna B. The Use of Bis[4(2-hydroxy-3-methacryloyloxypropoxy)phenyl]sulfide in Preparation of Microspheres with Pendant Amine Groups as a Heavy Metal Sorbent// Sep Sci Technol.-2013.-**48**.-P. 1699-1708.
2. Podkościelna B., Kolodyńska D., Hubicki Z., Gawdzik B., Bartnicki A. Synthesis, characterization, and application of a new methylenethiol resins for heavy metal ions removal// Sep Sci Technol.-2016.-**51**.-2501-2510.