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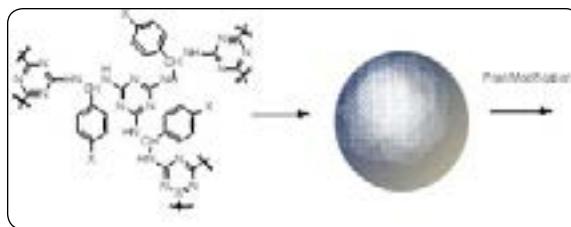
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Cost-effective polyaminal polymer for the heavy metal removal

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Environmental pollution is one of growing worldwide problem, especially, drinkable water is threatened by heavy metals in process of industrial growth. To solve this issue, all technique including membrane filtration, chemical precipitation ion-exchange, has been tried. Among them, adsorption materials are very simple and cost-effective. The Mesoporous polymers with 2-50nm pore size are one of most promising subject in wastewater treatment. Because it provides not only low diffuse barrier for water but also possibility of post-modification. Herein, we synthesized polyaminal polymer with Melamine and monomer based on benzenealdehyde which have hierarchical structure with 400~650m²/g BET surface area. Then decoration of sulfur and nitrogen on designed polymer with thiol-ynе click chemistry. Thiol yne click reaction is very reactive under UV lamp. In this study, designed MVP-SN investigated by BET, ICP-OES, Elemental analysis, SEM, EDAX for evaluating of heavy metal removal such as Cd(II), Pb(II), Hg(II) and Cu(II)



Recent Publications:

1. Guiyang Li (2016) "Facile Synthesis of Fluorinated Microporous Polyaminals for Adsorption of Carbon Dioxide and Selectivities over Nitrogen and Methane Macromolecules" 49, 2575–2581
2. Qi Sun(2016) postsynthetically modified covalent organic frameworks for efficient and effective mercury removal, J.Am. soc.2017, 139, 2786 – 2793.
3. Han, Y.; Yuan, L.; Li, G.; Huang, L.; Qin, T.; Chu, F.; Tang, C.(2016) Renewable polymers from lignin via copper-free thermal click chemistry, Polymer, 83, 92-100
4. Andrew B. Lowe,*a Charles E. Hoyleb and Christopher N. Bowman*c,(2010), Thiol-ynе click chemistry: A powerful and versatile methodology for materials synthesis, J. Mater. Chem., 20, 4745–4750
5. Jyotirmoy Sarkar,† Joydeep Chowdhury,*‡ and G. B. Talapatra*,(2007), Adsorption of 4-Methyl-4H-1,2,4-triazole-3-thiol Molecules on Silver Nanocolloids: FT-IR, Raman, and Surface-Enhanced Raman Scattering Study Aided by Density Functional Theory, J. Phys. Chem. C, 111, 10049-10061.

Biography

Jihyeong Ryu took BS in 2017. And he moved to Inha University for MS. He has studied Chemical Engineering, long been involved in heavy metal adsorbent for wastewater remediation. He is interested in Porous organocar Polymers and Covalent organic frameworks which have large surface area.

Notes:

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