

Title of the Abstract: **Novel surfactant modified porous graphitic carbon: an effective and sustainable adsorbent for organic dye removal**

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Abstract:

An environmentally friendly and economically effective surfactant modified porous graphitic carbon (S-PGC) was successfully fabricated to be used as a high efficiency sorbent for removing organic dyes from simulated water samples. The novel adsorbents prepared by pre-treating the porous graphitic carbon (PGC) prepared from alginate biomass using conventional anionic surfactants such as sodium dodecyl sulfate (SDS) and sodium dodecyl benzene sulfonate (SDBS) exhibited excellent adsorption performance for removal of cationic organic dyes such as methylene blue (MB), methyl violet (MV) and methyl yellow (MO). As compared to PGC of meso and microporous character, the developed S-PGC adsorbent achieved excellent adsorption capacities (>90%) and faster adsorption kinetics for the elimination of organic dyes even at very high dye concentrations of 1000 mg/L. Anchoring of the surfactant on the surface of the graphitic carbon is believed to improve its affinity towards the dyes owing to the narrowing of the pore opening and existence of abundant hydroxyl, ether and amine groups. Based on the high efficiency, feasibility and recyclability, surfactant modified graphitic carbon prepared from alginate biomass exhibits a great potential for water purification..

Biography:

Fawzi Banat is a Professor & Cahir of Chemical Engineering Department at Khalifa University of Science and Technology, Petroleum Institute. Obtained PhD (Chemical Engineering) at McGill University, Canada, in 1995. He received several research awards and published over 140 papers and holds a number of international patents.

Research Interests:

Research interests include wastewater treatment, membrane technology, desalination and separation processes.

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