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Modification of expanded polystyrene waste, Application to dye retention

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Polystyrene (PS), one of the most used polymers in everyday life, has a low recycling rate due to its inexpensive virgin resin. In order to make polystyrene waste (WPS) recycling advantageous, it is possible to change it chemically, introducing heteroatoms in the polymer chain thus transforming the waste into a material with more added value. In this work, sulfonation reactions of polystyrene waste (expanded polystyrene - EPS) with different degrees of sulfonation were carried out using sulfuric acid as a sulfonating agent and then characterized by infrared spectroscopy (FTIR) and thermal analysis (ATG/DTG) and applied for removal of different dyes from water. The adsorbent showed good adsorption performance due to its functional groups and strong adsorption forces with methylene blue (MB) and congo red (CR) and AB113 in differences concentrations.

Biography

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