

8th World Congress on Chromatography

4th International Conference on

&

Polymer Science and Technology

September 13-14, 2018 | Prague, Czech Republic

Kinetics and Thermodynamics of Asphaltene Adsorption on Nanocomposite PolyHIPEs

Taner Özker and Sevil Çetinkaya
Kirikkale University, Turkey

Asphaltene precipitation is one of the most important problems of the petroleum industry. Asphaltene collapses during petroleum processing and extraction from the well, blocking the pipes and causing many problems. For this reason, asphaltene should be removed from heavy oils. The main objective of this study was to synthesize new nanocomposite materials to be used in oil industry to prevent asphaltene deposition. The adsorption of asphaltenes from toluene solutions onto NiO/polyHIPE nanocomposite was investigated in detail. Asphaltene adsorption capacities of the polyHIPE-based nanocomposites were determined. Asphaltene adsorption kinetics and isotherms were obtained. It was seen that the pseudo-second-order model provided a good fit for the experimental data while the pseudo-first-order model did not. It is concluded that the synthesized and characterized polymer nanocomposites are important for the oil industry owing to having potential use as an adsorbent. The authors thank the Scientific and Technological Research Council of Turkey (TUBİTAK) for the financial support for this study (Project No. 214Z074).

Biography

Sevil Çetinkaya is a Professor of Inorganic Chemistry in the Department of Chemistry at Kirikkale University. She obtained her Ph.D. in Inorganic Chemistry at Hacettepe University in 2003. She joined the Kirikkale University as an Assistant Professor in 2006 and became an full Professor in 2013. Her current research interests focused on organometallic chemistry, design, preparation and applications of nanomaterials and porous carbon materials.

scetinkaya@kku.edu.tr

Notes: