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### **Pervaporative removal of polyaromatic hydrocarbons from model diesel composition using a fabricated polyimide membrane and process optimization**

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**D**iesel combustion in transportation and other industrial activities release toxic air pollutants like polyaromatic hydrocarbons (PAHs) that can cause serious health effects. According to the worldwide fuel charter, PAH in diesel has to be limited to 2% m/m (max.). Removal of PAHs from diesel is conventionally achieved via hydroprocessing which is hazardous, expensive and gives low conversions. Membrane pervaporation, a unique combination of permeation and evaporation which is comparatively a simple and inexpensive method can be applied for separating PAHs from diesel efficiently. An aromatic polyimide membrane was fabricated and successfully used for the said purpose. The efficiency of the process was evaluated in terms of permeation flux of PAHs. The effect of different physicochemical parameters on the permeation flux was investigated and the process was optimized using response surface methodology with a view to maximize the flux of PAHs.

#### **Biography**

Debarati Mitra has completed her MTech degree from the University of Calcutta and subsequently completed her PhD in Chemical Engineering from Jadavpur University. She is presently working as an Assistant Professor in the Department of Chemical Technology, University of Calcutta. She has published 18 papers in reputed international journals and has been engaged in research in the fields of membrane separation processes, biotechnology and biopolymers.

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