Membrane Applications for Flue Gas Remediation

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Abstract:

Flue gas from incineration processes such as coal fired power plants, waste incinerators, or cement kilns contain a variety of contaminants that need to be removed before the gas can be released to the atmosphere. These include particulate matter, SO2, NOx, dioxins, mercury, VOCs, and many more. Membrane separation processes are seldom used for these removal processes as they are not very efficient in removing low concentration contaminants. However, combining membranes with sorbent and catalyst particles can result in very effective emission control devices.

This talk will describe the general structure of these materials and how they may be applied for flue gas remediation. Simple models will be introduced to demonstrate the performance, illustrate the various components of the mass transport resistance, and how to relate laboratory performance to the observations in the field. Full installation data will illustrate the durability of these materials in real flue gas streams. Finally, applications for emerging contaminants and possibilities for combining separation processes will be discussed.

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