

Gas Separations for Fossil Energy Utilization

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The United States Department of Energy's National Energy Technology Laboratory (NETL) is aggressively pursuing research and development directed towards mitigating apprehensions over fuel independence, energy availability and reliability and environmental issues, especially as related to global warming. The production of "synthesis gas" (syngas) from the gasification of indigenous carbonaceous feedstocks has the potential to address some of these energy and environmental concerns. The abundance of coal in the US in conjunction with the flexibility of syngas, which can be converted to electricity, hydrogen and/or liquid fuels, is considered a promising near- to mid-term component in the transition to a renewable energy society. NETL has devoted substantial resources towards the identification and verification of efficient separation technologies to enhance gasification efficiency as well as to mitigate greenhouse gas emissions. Specifically, gas separations of interest to advance fossil energy conversion processes include oxygen-nitrogen, carbon dioxide-nitrogen and hydrogen-carbon dioxide are

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