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P4.179 Separation and recycle of Plasma Enhancement Gases using a CMS membrane

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The research focuses on testing carbon molecular sieve membrane (CMS) for separation of the exhaust gas from fusion reactors.

The exhaust gas in tokamak demonstration reactor (DEMO) consists of more than 90% of unburned fuel gas (D and T) and the remaining part will be He, plasma enhancement gases (PEGs) and impurities. Plasma enhancement gases (PEGs) (such as: nitrogen, neon, argon and other inert gases) are injected into the plasma in order to reduce the power load over the plasma facing component. In demonstration reactor (DEMO) is foreseen to recover the fuel gas (D and T) and PEGs.

The CMS membranes have been supplied by Media and Process Technology Inc. (Pittsburgh, PA, USA).

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