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P4.175 Low pressure fusion exhaust gases separation

Thursday, 20 September 2018 11:00 (2 hours)

Plasma enhancement gases (PEGs) (such as: nitrogen, neon, argon and other inert gases) are injected into the plasma of several tokamaks in order to reduce the power load over the plasma facing component.
The exhaust gas in DEMO reactor consists of more than 90% of unburned fuel gas (D and T) and the remaining part will be He and impurities.
In DEMO reactor it is foreseen to recover the fuel gas and PEGs.
Experiments on separation of the exhaust gas from fusion reactors by using inorganic membranes have been performed.
The membranes with different geometry (single channel and multichannel) and pore sizes have been supplied by Ceramiques Tecniques et Industrielles (CTI SA) France.
Single gas permeation of air, helium (He), hydrogen (H2), nitrogen (N2) and argon (Ar) were measured at room temperature and feed pressure between few Pa and 100000 Pa.

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