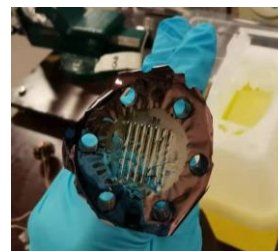
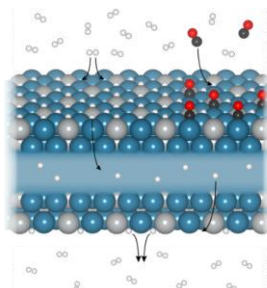


Pd-based membranes for hydrogen and ammonia

Introduction

- To address distribution challenges in the development of hydrogen systems, ammonia is regarded as a high-potential carrier.
- While this solution would improve economic and safety considerations of hydrogen transport, it requires efficient separation and purification of hydrogen prior to end use.
- Palladium-silver (PdAg) membranes have been shown to separate H₂ from gas mixtures with high purity

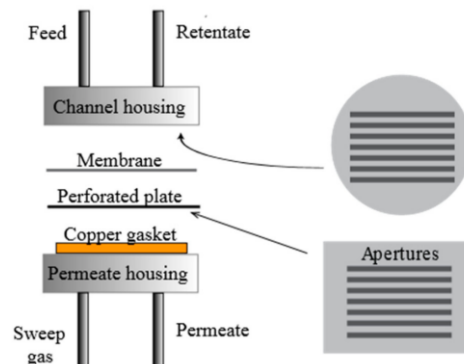


Primary objective

- Investigate performance and stability of PdAg membranes for hydrogen separation in the presence of ammonia

Secondary objective

- Improve understanding of PdAg membrane surface characteristics



Willow Dew

Affiliation(s) = Norwegian University of Science and Technology (NTNU)

Related projects: FME Hydrogeni

PhD Candidate, Department of Chemical Engineering, NTNU, Norway

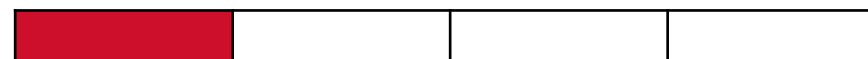
Education

- MSc. in Science Technology, Aalto University, Finland
- MSc. in Engineering, Taltech, Estonia
- MSc. Biology AgroSciences, URCA, France
- BSc. In Chemical Engineering, University of Alberta, Canada



Estimated progress of the PhD project:

Just started ... < 50 % > 50 % Almost done ☺



Publications

- Peters T, Caravella A. Pd-Based Membranes: Overview and Perspectives. Membranes (Basel). 2019 Feb 1;9(2):25. doi: 10.3390/membranes9020025. PMID: 30717272; PMCID: PMC6410063.
- Vicinanza, Nicola & Svenum, Ingeborg-Helene & Næss, Live & Peters, T.A. & Bredesen, Rune & Borg, Anne & Venvik, Hilde. (2015). Thickness dependent effects of solubility and surface phenomena on the hydrogen transport properties of sputtered Pd77%Ag23% thin film membranes. Journal of Membrane Science. 476. 602-608. 10.1016/j.memsci.2014.11.031.

