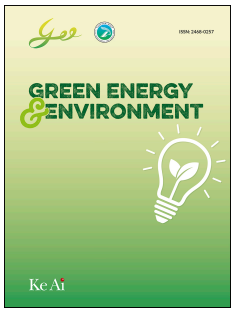
# Accepted Manuscript




Vehicle fuel from biogas with carbon membranes; a comparison between simulation predictions and actual field demonstration

Shamim Haider, Arne Lindbråthen, Jon Arvid Lie, Petter Vattekar Carstensen, Thorbjørn Johannessen, May-Britt Hägg

PII: S2468-0257(17)30188-7

DOI: 10.1016/j.gee.2018.03.003

Reference: GEE 109

To appear in: *Green Energy and Environment*

Received Date: 8 December 2017

Revised Date: 21 March 2018

Accepted Date: 22 March 2018

Please cite this article as: S. Haider, A. Lindbråthen, J.A. Lie, P. Vattekar Carstensen, T. Johannessen, M.-B. Hägg, Vehicle fuel from biogas with carbon membranes; a comparison between simulation predictions and actual field demonstration, *Green Energy & Environment* (2018), doi: 10.1016/j.gee.2018.03.003.

# Graphical Abstract

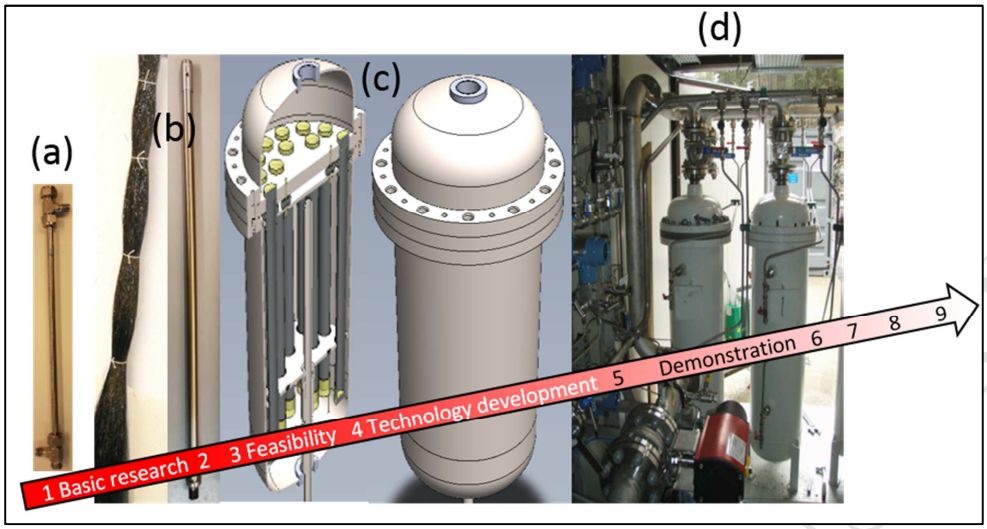



**Figure 3 in the article**:

Technology readiness level according to the EU commission/Up-Scaling from lab to pilot scale; (a) lab scale module, (b) medium sized module, (c) Multimodule, (d) Membrane Pilot plant

# Highlight for graphical content:

Biomethane as vehicle fuel from biogas was upgraded in a carbon membrane-based pilot plant process. Applying a single stage separation operation meant a low energy usage; 0.13 kWh/($Nm^3$ of upgraded biogas). However, the brittleness of hollow fibers remained a challenge.