

EDGaR New Gas Sensor project

F.P. Bakker

Juni 2013

ECN-L--13-010



EDGaR New Gas Sensor project

Is it possible to demonstrate a gas meter and gas appliance with special sensors for safe and efficient use of new gases, in order to facilitate the transition to a sustainable energy infrastructure in the most cost-efficient way?



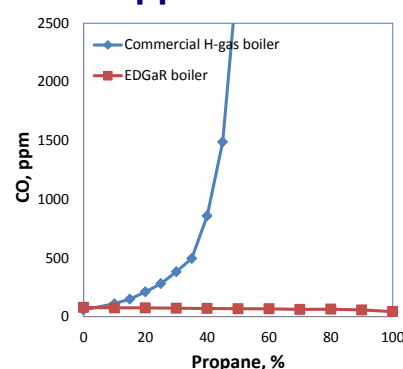
The Energy Delta Gas Research (EDGaR), a Dutch research consortium of ten enterprises and research institutes, coordinates the realization of scientific, applied and technological researches on gas and sustainability. Participants to the consortium come from the industry — Gasunie, GasTerra, Kiwa, Enexis, Liander and Stedin — and scientific institutions — ECN, University of Groningen, Delft University of Technology and Hanze University of Applied Sciences. Since its beginning on 1 January 2010, EDGaR has subsidized original projects in the domains of natural science, engineering and social sciences.



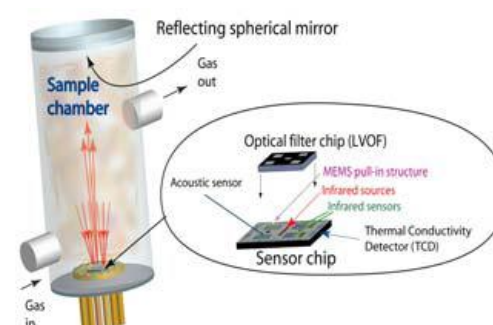
Select and test sensors



Connect sensors with appliances



Develop new sensors



Results

Sensor principle	Component	Performance	Low cost?
Optical (IR)	CH ₄ , CO ₂	+++	++
Optical (mirror)	H ₂	++	+++
Micro-GC	H ₂ , N ₂ , CH ₄ , CO ₂	+++	-
Physical (conductance)	H ₂	++	++
Physical (calorimetric)	Energy content	+	+
Physical (movement)	Viscosity	++	++

Future

- Develop H gas system (SBIR project ministry Economic Affairs)
- Perform field test sensor systems for H and G gas
- Develop integrated sensor chip (EDGaR 2?)

ECN

Westerduinweg 3
1755 LE Petten

Postbus 1
1755 LG Petten

T 088 515 4949
F 088 515 8338
info@ecn.nl
www.ecn.nl