ROMEO
REACTOR OPTIMISATION BY MEMBRANE ENHANCED OPERATION

European Research & Innovation Project
Reactor Optimisation by Membrane Enhanced Operation

Interview with
Jan Hoffmann Jørgensen

Development Engineer
at LiqTech International, Denmark

"While working first with catalysts and then with membranes, I always wanted to combine the two disciplines into developing a catalytic membrane reactor."

Hi, Jan ! Can you please tell us a little bit about yourself ?

My background is a MSc in chemistry from University of Copenhagen and a PhD in catalysis from Technical University of Denmark. After university I started up the company that later became LiqTech International, together with a CEO and five student workers.

My first task was development of catalysts for diesel particulate filters but now I spend most of my time on developing silicon carbide membranes for water and wastewater treatment.

What is your favorite work subject ?

The favorite part of my job is really to create jobs in Denmark by exporting new technical solutions. Recently, I have taken interest in using our water membranes in gas applications. One example is to use them as hydrogen dispersers for biological upgrading of biogas.

There is no typical day or week for me. I not only have tasks in R&D but often also in supporting sales or production staff.

What excites you in ROMEO?

While working first with catalysts and then with membranes I always wanted to combine the two disciplines into developing a catalytic membrane reactor. ROMEO has made this possible together with a team of highly skilled and motivated European professionals.

What are you expecting from the project?

Apart from the benefits from process intensification like lower emissions and energy consumption, I am of course interested in the new business opportunities for our company in the

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chemical industry. We are already doing some testing with petrochemicals and ROMEO will give us an idea of the potential and the challenges to be overcome within specialty chemicals and other sectors in the industry. Maybe the project can also generate new ideas for future EU applications.

What are, according to you, the major challenges to be overcome in ROMEO?

Right now I see the major challenge as stable membrane operation , but I might change my view on that. It's a challenge for us to apply a membrane support layer on a convex surface and it could affect the separation layer.

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Are you participating in other international projects?

I am also involved in a Horizon 2020 project called AQUAlity. It is an Innovative Training Network where I will supervise a PhD student. The aim is to remove Contaminants of Emerging Concern from water and wastewater by combining membranes with Advanced Oxidation Processes.

Thanks for your time, Jan, and all the best for your membranes projects!

LiqTech International is specialised in the development, manufacturing and supply of revolutionary silicon carbide ceramic technology for the purification of liquids and gases.

One of LiqTech's tasks in the ROMEO project is to optimise the tubular membrane structures. This includes the development of structures with different geometry and pore size. Additionally, LiqTech will be highly involved in the design and manufacture of a reactor module that can be used in the demonstration tests.

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ROMEO in brief

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6 Million €

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Scientific Coordinator - Dr. Frank Stenger
Project Manager - Dr. Marc Oliver Kristen

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