

Nanochannel Technologies



UNIVERSITY OF
NOTRE DAME

Technology Transfer Office

Nanoscale Reactors for In-situ Reagent Generation and Use

Pat. Pending

Background

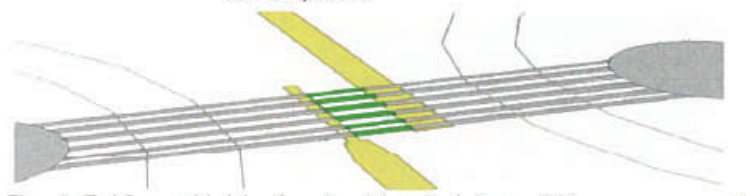
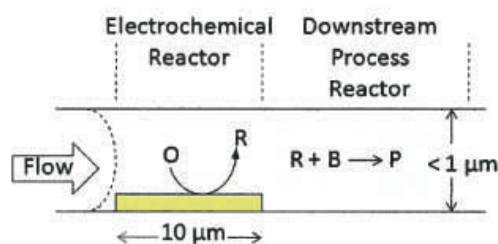
Nanofluidic channels can facilitate applications including electrochemical biosensing, and heterogeneous solution chemistry. Convective dynamics including rapid colloidal and radial diffusion lead to improved mass transport and improved reaction efficiencies.

Technology

A nanochannel reactor has been developed which provides for the efficient in-situ production of reagents. In one instance the electrolysis of water can be achieved through the application of a potential to an electrode located within a channel. Operation of this nanochannel reaction can be shown to produce hydrogen gas in solution at the solubility limit. The generation of other reactive elements is possible from corresponding solvents.

The efficient and fast production of hydrogen is accomplished while avoiding nucleation and channel blockage.

The technology can be applied in multiple fields broadly including environment remediation, oxidation reactions, and catalysis.



Advantages

- Chip level technology can be used for applications involving minute amounts and concentrations
- While the reaction chemistry occurs on a small scale, the technology can be scaled by the use of thousand of channels, chips, and reactors
- Safer than high pressure means of producing and storing H_2

Nanoscale Reactor

this technologies made possible by the efforts of students, researchers and faculty at . . .

UNIVERSITY of NOTRE DAME Chemical and Biomolecular Engineering

Interested in Licensing or Sponsored Research opportunities?

**Scan and email
Or
FAX To
(574) 631-6630**

TO: Tim Joyce, Licensing Associate

_____ I am interested in learning more about the general aspects of this technology. Please contact me. The best time to reach me is:

_____ I would like to learn more about the specifics of this technology and would be willing to complete a Confidential Disclosure Form in order to discuss it further.

_____ I am not interested in this technology but would be interested in learning more about: (please specify):

Please Enter Your Contact Information Below

Name: _____	Phone: _(____)_____
Title: _____	Email: _____
Company: _____	Fax: _____
Address: _____ _____	