

Prevention of gas hydrates in the oil industry – from anti-freeze to fish proteins and beyond

In contrast to being a huge potential source of natural gas, gas hydrates are a nuisance to the oil and gas industry. They are ice-like solids that contain water and natural gas and can form at temperatures as high as 30°C under pressure. If formed, gas hydrate plugs can shut down drilling operations, oil or gas production pipelines or processing equipment, both on and offshore. Potential gas hydrate plugging has been identified as the number one problem facing development and production from deepwater fields.

There are several ways to protect against gas hydrate plugging which will be described in the presentation. However, focus will be put on a relatively new chemical technique known as Low Dosage Hydrate Inhibitors (LDHIs), which is the author's main research interest. The story of LDHI development starting from curious experiments with certain fish proteins to the current status as a multi-million dollar industry will be presented. UiS's and IRIS's own contributions to LDHI technology will also be discussed.