

# Measurements on the catalytic ortho-parahydrogen conversion using hydrous ferric oxide

*Thursday 25 July 2024 11:15 (15 minutes)*

The increased demand for hydrogen as an energy vector and storage medium results in a constantly growing need for higher liquefaction capacity. However, the design of the required ortho-parahydrogen converters is currently subject to major uncertainty. The data on the activity of the current standard catalyst hydrous ferric oxide, commercially available as “Ionex-Type O-P Catalyst”(Ionex) by Molecular Products, are outdated and partially contradictory. The HyCat project, currently conducted at Dresden University of Technology, aims to create a new set of highly accurate design data for ortho-para converters. For this reason, a sophisticated measurement apparatus has been set up in the past years, allowing the testing of ortho-para catalysts in the entire operational range of modern large-scale hydrogen liquefaction plants. This work presents first activity measurements for Ionex at several conversion conditions.

## Submitters Country

Germany

**Author:** EISENHUT, Sebastian

**Co-author:** HABERSTROH, Christoph

**Presenter:** EISENHUT, Sebastian

**Session Classification:** Thu-Or17

**Track Classification:** Tracks ICEC 29 Geneva 2024: ICEC 06: Cryogenic applications: hydrogen and LNG systems