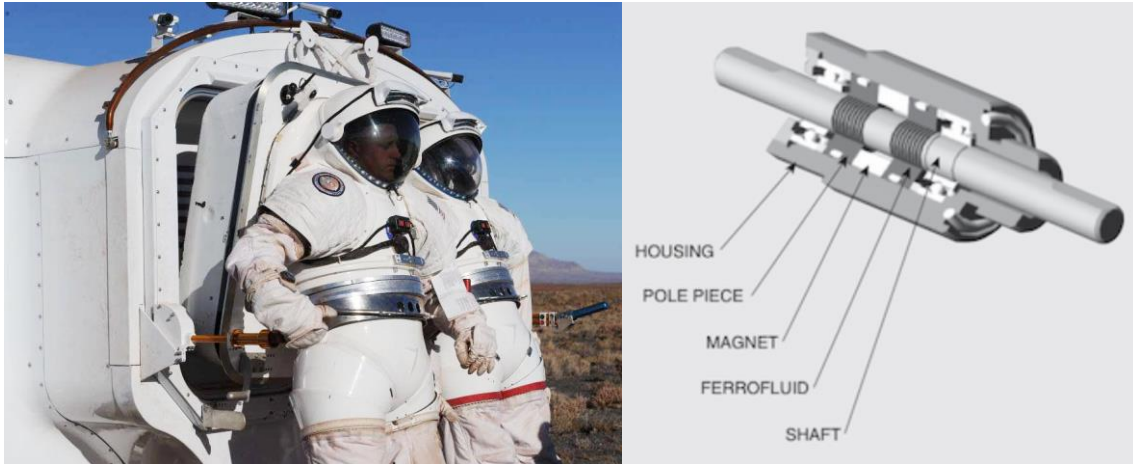


# Master Thesis

## Feasibility of Ferrofluid Seals for Suitports



Picture: (Left) Suitport with entrance through the back, (Right) Common Ferrofluid multi ring seal from ambient pressure to vacuum

### Task:

A demonstrator of an ferrofluid seal, on suitport scale, shall be built and tested.

### Motivation:

Seals are a vital part of extraterrestrial habitats. A promising, but not yet explored material for large seals are ferrofluids, which could be produced from resources available on Mars. This would enable maintenance on-site without the need for supplies from Earth, reducing cost and increasing safety.

### We search for Students who:

- Are responsible, team oriented, engaged, and conscientious.
- Are interested in rapid prototyping (CAD, 3D-Printing, manufacturing).
- Curious about what ferrofluids are and could do for humans on Mars.

### What we offer:

- A team oriented and helpful environment
- The infrastructure of the ZARM institute for the project
- Expertise in CAD design and rapid prototyping
- Previous work on Suitports as starting point
- Knowledge about ferrofluids, magnetic fields and how to control them.

Please send your application along with a CV and your TOR to:

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