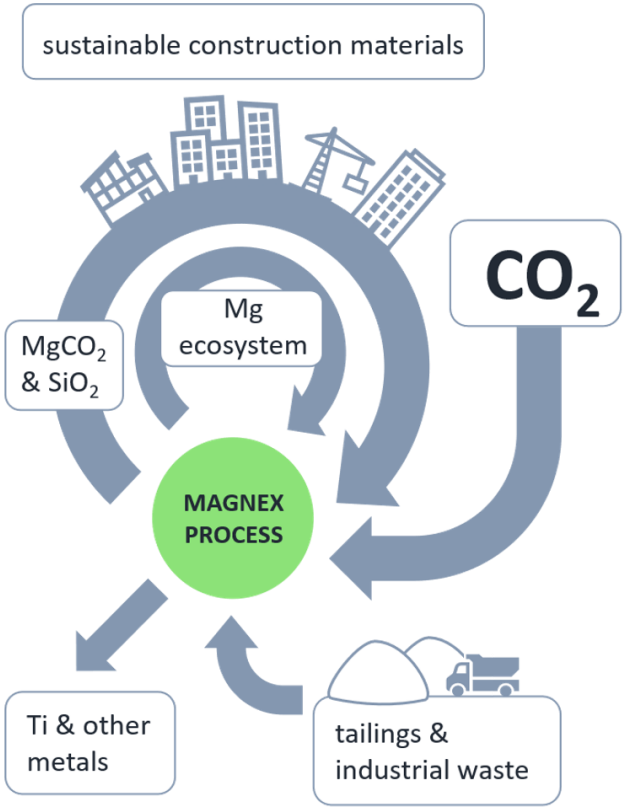
Helsinki, Finland

September 2022

MAGNEX

Viable magnesium ecosystem: exploiting Mg from magnesium silicates with carbon capture and utilization



FIBRE AND PARTICLE ENGINEERING RESEARCH UNIT
UNIVERSITY OF OULU

Tampere University

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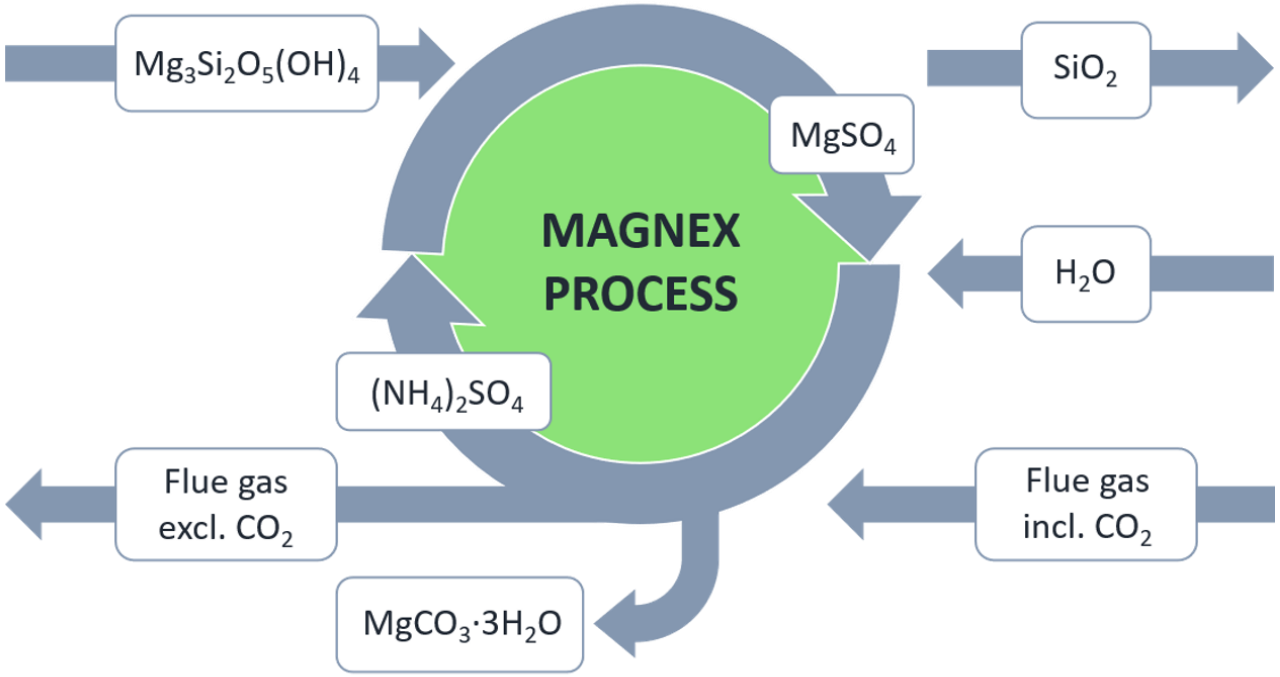
Prof. Erkki Levänen, Tampere University
Prof. Ron Zevenhoven, Åbo Academy

MAGNEX project



- **Thematic areas:**
  - Flows of critical materials
  - High technology products and services
  - Cooperation and governance

- **Main Aims:**
  - ✓ To improve the resource efficiency of the Mg-extraction process from local side streams with carbon capture and utilization (CCU)
  - ✓ To accelerate the kinetics of Mg-carbonation for CCU
  - ✓ To provide suitable applications for all generated material streams
  - ✓ To enable the circular Mg economy

International Partners

- **Dr. Frank Winnefeld from EMPA (CH) -** complementary expertise in Mg- based binders, cement chemistry and thermodynamic modelling o
- **Prof. Martin Kunz (Advanced Light Source, Lawrence Berkeley Laboratory, Berkeley CA)** - Studies of the kinetics and mechanisms of the carbonation reactions utilizing the ALS beamline for in-situ synchrotron measurements.
- **Dr. Thierry Tassaing (CNRS Director of Research, University of Bordeaux, FR)** - In situ mineralization studies in scCO_2 with Raman and IR.
- **Roterdam Harbour Authority, four companies, TU Delft, Citec Oy-Totteurku** - ongoing cooperation for large-scale deployment of Mg-based rock for CCU via the ÅA routes.
- **Dr. Inga Stasiulaitiene (University of Kaunas, LT)** - LCA studies under an Erasmus agreement.