Seminar thesis:
Modeling bubble flow near walls

Electrolyzers are mainly utilized to produce hydrogen from water and green energy. Oxygen management reportedly affects electrolyzers’ efficiency and needs to be investigated for better understanding. In this work, oxygen bubble (see in blue in figure below) dynamics near walls shall be modeled by solving the 3D incompressible Navier-Stokes equations on a Finite Volume grid and by capturing the fluid-fluid interfaces via the Volume of Fluids method (solver already implemented in C++ based OpenFOAM code). The model solution needs to be described and checked for physical plausibility as well as for grid dependency.

Desirable knowledge/skills:
- Passed exam in Numerical Fluid Dynamics
- Experience with Linux
- Experience with postprocessing of simulations (Paraview, Matlab etc.)

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