Title, Name and surname
Assist. Prof. Tomasz Prokop, PhD

Faculty and Department
Faculty of Energy and Fuels, Dep. Of Fundamental Research in Energy Engineering

Keywords.
computational material engineering, numerical simulation of heat transfer and fluid flow, numerical methods, computational fluid mechanics, mathematical modeling, fuel cells, energy, optimization

Scientific profile.
My research interests are related to computer modeling of mass and charge transport in materials with complex, evolving microstructures such as porous electrodes. Although I have generally wrote my own code (in C++, MATLAB, Python) for the purpose of numerical simulation and scientific visualization, I also have experience with ANSYS Fluent. I have taught courses on mathematical and numerical modeling, optimization, programming, and analysis of energy systems.

Exemplary thesis titles
-Numerical analysis of the microstructure of a porous material using nanotomographic data.
-Analysis of reaction site density in a digital material representation of a porous electrode
-Quantification of phase boundaries in a digital reconstruction of a solid oxide fuel cell microstructure

The form of conducting master's theses
Students participate in weekly meetings where the research progress and plans for the next week's are presented. The meeting is organized together with Ph.D. students and young staff members.