

<b>Title, Name and surname</b> Assoc. Prof. Grzegorz Brus
<b>Faculty and Department</b> Faculty of Energy and Fuels, Dep. Of Fundamental Research in Energy Engineering
<b>Keywords.</b> numerical simulation of heat transfer and fluid flow, numerical methods, computational material engineering, computational fluid mechanics, mathematical modeling, fuel cells, energy, application of artificial intelligence in energy engineering
<b>Scientific profile.</b> My research interests are focused on numerical simulations of chemically reacting thermal gas flow in energy systems and chemical reactors. In my work, I use the following numerical tools: MATLAB & SIMULINK and ANSYS Fluent. I have experience using computer simulation in scientific, education, and industrial works. For several years, together with my research team, I have expanded my scientific workshop with artificial intelligence methods and their application in energy engineering.
<b>Exemplary thesis titles</b> - Solid oxide fuel cell's anode optimization using evolutionary algorithms and cellular automata. - Numerical analysis of the macro-patterned methane/steam reforming reactor - An Artificial Neural Network Model for Calculating the Current-Voltage Characteristics of a Solid Oxide Fuel Cell Stack
<b>The form of conducting master's theses</b> 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.