

Combustion of solid fuels is the worldwide main source of primary energy which is transformed to the electricity. Improvement of the solid fuels combustion devices as well as optimization of their exploitation is constrained by the fact that the solid fuel combustion process is not sufficiently understood. In particular solid fuel particle models are predominantly based on the assumption that the particle is spherical and whole it's surface has the same reactivity with respect to oxidant.

The main scientific goal of this project is to identify and quantify influence of the diversified properties of the particle surface as well as particle shape on the combustion process with special attention to the trajectory of the particle movement. The main outcome of the project will be widening the knowledge on the single particle combustion, and as the consequence possibility of the more accurate modeling of the combustion process.

In the future knowledge gained within the project will allow to reduce fuels consumption which are used for electricity generation as well as to reduce emission of pollutants to the atmosphere.