

BIOMODELLING project consortium comprised of six partners, including three higher education establishments: Czestochowa University of Technology (Poland), Lappeenranta University of Technology (Finland), Chalmers University of Technology (Sweden), moreover a research institute VTT (Finland), an industrial boiler manufacturer Foster Wheeler (Finland) and an industrial partner – PGE GiEK S.A. Department Turow Power Plant. The focus of the project was to elaborate and improve modelling methods of a solid biomass combustion with respect to the circulating fluidized bed reactors. In the project modern scientific methods have been used such as: laboratory-scale experiments, computer modelling and full-size industrial measurements. The activities of Czestochowa University of Technology included elaboration of a computer program, making possible calculation of CO<sub>2</sub>, CO, SO<sub>2</sub>, and NO<sub>x</sub> concentration along the boiler's combustion chamber height. The program is also calculating "in stack" other flue gas components, such as: H<sub>2</sub>, H<sub>2</sub>O, O<sub>2</sub>, CH<sub>4</sub>, HCN, NH<sub>3</sub>, NCO, NO, N<sub>2</sub>O. The program is available in a demo version. It is working under Windows and performing calculation for 261 MWe CFB compact boiler. The model could be adopted to any circulating fluidized bed boiler, firing or co-firing biomass.