LOW EMISSION COMBUSITON

3 ECTS (ELECTIVE)

AGH University of Science and Technology

Course responsible: Prof. dr hab. inż. Andrzej Szlęk (SUT)

Course overview

The aim of the curse is to deliver knowledge on noxious substances formation and primary and secondary methods of emission decrease.
In the first part of the course it is described chemical mechanisms which lead to formation of noxious substances which special emphasis of such pollutants as nitric oxides, sulphur oxides, carbon monoxide, soot, hydrocarbons, dioxines and furanes. Moreover main factors which control mentioned mechanisms are characterized. Second part of the course is devoted to primary methods of decreasing harmful emission. It is described how, depend on fuel it is possible to reduce emission of nitric oxide, carbon monooxide, soot, hydrocarbons, dioxines and furanes. Third part of the lecture is oriented to secondary methods of flue gas cleaning such as desulphurization, elimination of particulate matter and reduction of NO concentration.

The course consists of lectures, classes and laboratory.

Outcome of the course

After this course the student should be able to

- Identify conditions (type of boiler, fuel, operating conditions) which cause a risk of pollutants formation
- Chose and design primary technologies to decrease emission of noxious compounds
- Chose and design suitable secondary cleaning method of flue gases

Course coordinator & teachers

Prof. dr hab. inż. Andrzej Szlęk, Silesian University of Technology