



The mercury emissions from combustion of coal and lignite in Large Combustion Plants in the Czech Republic

Lukas Pilar, Karle Borovec, Zbyszek Szeliga
Czech Technical University in Prague

This paper presents the results of research projects focused on the mercury emission after fossil fuel combustion, notably the finished research project named "The development of the pilot plant for monitoring of the mercury emissions reduction from large and medium capacity energy sources". The projects currently respond to future EU legislation on BAT for LCP, which sets lower emission limits for SO₂, NO_x, Dust, CO and sets new emission limits for concentrations of HF and HCl and also emission limits for concentration of Hg in flue gases and will be valid for existing plants after 2021. The finished research project was based on the analyses of fuels used in the Czech Republic. In terms of the analyses, lignite and coal samples were analysed for concentration of Hg and Cl. Then, numerous measurements were conducted at power plants in the Czech Republic with the aim to define value of concentration of Hg and various Hg species in flue gases and to analyse combustion by-products - ash and gypsum including suspension. For analyses of the concentrations of Hg and Hg species in flue gases, we used continual measurement and "Ontario Hydro method". The main aim of the finished project was construction and research on a pilot unit intended for oxidation of Hg⁰ to Hg²⁺ using a layer of catalyst at high temperature of flue gases. The project will continue with further research on oxidation of Hg within lower temperatures.

