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# MINERAL CARBONATION OF MODIFIED AND NON-MODIFIED FLY ASH IN AN ELEVATED PRESSURE AND TEMPERATURE

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**In the proposed study, mineral carbonation of the fly ash from one of the polish power plants burning brown coal was performed at laboratory scale. Conditions for this process were: pressure range 4-16 bar and temperature 323 K. For the experiment one fly ash was used. In one experimental set raw form of fly ash was used. In the second experimental set in analogical conditions, the same fly ash was used, but specially, "artificially" prepared for the experiment. Preparation of fly ash included heating of fly ash in air in elevated temperatures to decompose formed carbonates (result of atmospheric carbon dioxide reaction with eg.: non-reacted calcium oxide from desulphurisation process) and experimentally check and compare the results for such prepared material in correlation to raw fly ash from the same source. Laboratory investigations proved that the carbon dioxide uptake is increasing with pressure in both analysed cases. "Artificial" preparation of fly ash for the experiments did not result in increase of $CO_2$ uptake. The results indicate that no special preparation of fly ash is needed in order to use it as a material for CO2 utilisation.**

## Biography

PhD Piotr Zabierowski CEng graduated from the Faculty of Chemistry at the Cracow's University of Technology in 1993. In 2002 he obtained doctorate of science at the AGH University of Science and Technology in Krakow, where he has been working at Department of Coal Chemistry and Environmental Sciences, Faculty of Energy and Fuels. He specializes in engineering and chemical technology.

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