

**Styszko, K., Drobniak, A. Adsorption Potential of Fly Ash for Xenobiotics Removal from Water Solutions. *Ochrona Srodowiska* 2015, Vol. 37, No. 1, pp. 25–31.**

**Abstract:** Xenobiotics, *e.g.* drug metabolites, present in surface waters are posing new technological problems. Wastewater treatment processes do not effectively remove compounds of this type and their metabolites, therefore alternative methods of their elimination from water solution are sought. Fly ash is produced as an industrial by-product causing severe environmental problems. The main way of fly ash utilization is in the building industry, civil engineering, mining, post-excavation and landfill restoration. The potential use of fly ashes for selected xenobiotics removal from water solutions was evaluated. For this purpose, the fly ashes from combustion of coal with varying unburnt carbon content (0.5%, 4.9% and 6.4%) were examined. High Freundlich adsorption constant ( $K_F$ ), determined from adsorption experiments for individual xenobiotics on fly ash, confirmed utilization potential of such adsorbents for organic contaminant removal from water solutions. Adsorption of the compounds tested depended on the unburnt carbon content in the ash. The highest values of Freundlich constants were obtained for fly ash with the highest content of the unburnt carbon.

**Keywords:** Sewage, pharmaceuticals, degradation, by-products.