

Materials based on ash for environmental protection. I. Obtaining and characterization

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The fly ash produced from the burning of pulverized coal in a coal-fired boiler is a fine-grained, powdery particulate material that is carried off in the flue gas. Approximately 70 to 75 percent of the generated fly ash is still disposed of in landfills or storage lagoons. Much of this ash, however, can be recovered and used. Examples of these applications are: additives for the immobilization of industrial wastewater treatments; Extraction of valuable metals, such as Al, Si, Fe, Ge, Ga, V, Ni, Zn; Land stabilization in mining areas; Sorbents for flue gas desulfurization et all. In order to use the ash for synthesis of zeolites and adsorbents, we proposed to conduct their characterization from a chemical, mineralogical and technological point of view. For this we performed the chemical analysis for the oxidic compounds, the thermogravimetrical and the FTIR analysis. Also, we have run analysis in order to determine their density and their Blaine specific surface. This paper presents the result of the study of ash characterization produced by CET Iasi in order to obtain new adsorbents for wastewater treatment.