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**Processing, Valorization and Application of Waste Derived from Silica and Alumina**

Fungaro, D.A.(1);  
(1) IPEN;

Many industrial processes produce hazardous inorganic wastes which representing a large and increasing global flux. Majority of these wastes are dumped in landfills, ash ponds, lagoons and only a very small percentage is reutilized. The value-added applications to reduce/reuse these waste materials are important from the standpoint of sustainable development. Coal Combustion Products (CCPs), an industrial by-product generated during the combustion of coal, contains silica and alumina as the main components allowing their use as raw material for the synthesis of value-added materials. Brazil is the largest recycler of aluminum can in the world. The Al-containing waste generated by aluminum recycling activity can also be employed as a secondary raw material. In our studies, alkali hydrothermal reaction strategies have been proposed in order to obtain efficient adsorbent materials from FGD waste. Besides that, NaA zeolite was prepared by alkaline fusion method using aluminum waste from tertiary industry as Al-additive. Samples were characterized by different techniques such as XRF, XRD and cation exchange capacity. Therefore, recover the aluminum content of the hazardous waste and the recycling of CCPs represents a green and feasible alternative to highly valuable product synthesis