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P74. Synthesis of Porous Titania/Alumina Ceramic, Using Fine Aluminum as Foaming Agent

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There are a lot of applications for porous ceramic materials, such as water filtration, filtration of exhaust gases and molten metals, as catalyst carrier, refractory applications etc. However most of the commercially available porous ceramic materials are produced using different pyrolysis techniques which have some considerable disadvantages - as toxic fumes, leftover residues of organic precursors etc. In our research a lightweight refractory ceramic is produced by foaming the slurry of raw materials, using a chemical hydrogen gas formation technique. This technique is quite similar to the one used in aerated concrete production as it uses fine grade aluminum powder as foaming agent. From acquired samples, dependency of pore size, geometry and porosity on the properties of slurry are analysed. After sintering and mechanical preparation other important properties of acquired ceramic, such as composition, thermal shock resistance, mechanical strength as well as filtering properties etc., are evaluated.