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Ceramic Applications in TÜPRAŞ Refineries for Energy Savings

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Tüpraş is Turkey's largest industrial enterprise and seventh biggest refining company in Europe, with 28.1 million tones crude oil processing capacity and operating four refineries with more than 5000 employees. Tüpraş R&D Center certified by Turkish Law "Supporting Research and Development Activities" was established in 2010. Tüpraş carries out R&D projects in line with the objective of developing sustainable production strategies alternative fuels, fuel production and energy minimization technologies. A refinery infrastructure mainly is made out of metals however; ceramics also have key roles in daily operation. Ceramic materials such as refractory bricks, thermally stable oxide compounds, catalyst carriers and supports with controlled shape and geometry, coatings and thermal insulation materials are widely used in refineries. Ceramic materials are used in nozzle, seal, valve and membrane components and the places where thermal insulation and corrosion resistance are strictly required. Ceramic based thermal insulation for energy savings is one of a significant application not only for energy dense-industries but also for petroleum refineries. These materials are mainly classified into two parts: traditional (mineral, rock wool etc.) and new generation (aerogel, porous powder etc.). In this talk, refinery ceramics used for energy savings will be shortly discussed and new opportunities for collaboration with universities and companies will be addressed.