

## ABSTRACT

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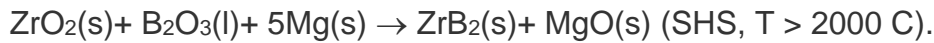
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### **Industrial Production of UHT (Ultra-High-Temperature) Ceramics**

Ceramic materials such as transition metal borides (e.g. HfB<sub>2</sub>, AlB<sub>12</sub>), carbides (e.g. TiC) and nitrides (e.g. TiN, BN) that offer excellent stability at temperatures > 2000 °C are classified as UHT ceramics. They used for a various number of applications based on their outstanding properties which are: ability to withstand extremely high temperatures, relatively low weight, high ballistic impact performance, low friction and resistance to wear, corrosion and hardness.

In this talk we will present the industrial and pilot scale the production of some of the above mentioned UHT ceramics in powder form as performed at Pavezum Kimya facilities. The production is based on well-known carbo- thermal and or/ and magnesiothermal reduction, e.g. ZrB<sub>2</sub>:



Both carbo- and magnesio thermal production techniques will be compared with respect to cost, quality of the obtained powders (e.g. purity grade, particles size) and their physical, chemical and mechanical properties.