**Synthesis of Titanium Carbide by the Combustion of**

**TiO2-2Mg-C and 3TiO2-4Al-3C Systems in a Tubular Furnace**

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**ABSTRACT:** *The combustion process of TiO2- 2Mg- C and 3TiO2-4Al-3C systems in a tubular furnace was investigated. TiC has been synthesized by the magnesiothermic reaction from a mixture of compacted powders of TiO2, Mg and charcoal as starting materials in the presence and absence of NaCl. The effects of temperature, pressure, and the stoichiometry ratio in the reaction yield have been studied. The results show that the synthesis of titanium carbide in the presence of sodium chloride has a better yield than other methods. Titanium carbide was also synthesized by aluminothermy reaction from a mixture of compacted powders of aluminum, titanium dioxide and charcoal. The reaction processes are modified to achieve a high yield of TiC. The final products were characterized by XRD and SEM.*

**KEY WORDS:** *Titanium carbide, Magnesiothermic, SEM, Tubular furnace,*

*Aluminothermy, XRD.*