

Obtaining of TiB₂ Powder from Evaporation Boat Wastes

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ABSTRACT

TiB₂ is a metal boride, which has excellent mechanical properties. It is one of the most preferred material in defense industry, refractory materials, cutting tools, evaporation boats, etc. Evaporation boats which is made of hBN-TiB₂ composite structure is used to produce thin aluminum coating for decorative applications, plastics, glasses or food packaging. These evaporation boats lose their function in time because of corrosion and they are out of using cycles. Amount of waste evaporation boats increase day by day. In present work, TiB₂ powders were obtained by the recycling processes from evaporation boat wastes. Samples were characterized by XRD, Rietveld and SEM-EDX analysis. As a result, TiB₂ amount in the powder was increased to 65% from 39%.

Keywords: h-BN-TiB₂ composites, Evaporation Boat, Recycling