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**Graeve et al.**

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(54) **COMBUSTION SYNTHESIS METHOD AND BORON-CONTAINING MATERIALS PRODUCED THEREFROM**  
  
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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 359 days.

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(51) **Int. Cl.**  
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(57) **ABSTRACT**  
  
One embodiment of the present disclosure provides a method of making a ceramic material that contains boron and a metal. A metal source, an oxidizer, a boron source, and a fuel source are combined. These reactants are then heated at, or to, a temperature sufficient to initiate a combustion reaction. The combustion reaction produces a ceramic material that includes boron and the metal. The present disclosure also provides materials formed by the disclosed method, as well as methods and systems using such materials.

(52) **U.S. Cl.**  
USPC ..... **423/276**; 423/289; 423/263; 423/297  
(58) **Field of Classification Search**  
None  
See application file for complete search history.

**19 Claims, 13 Drawing Sheets**

