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(54) **JOINING OF DISSIMILAR MATERIALS**

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(76) Inventors: **Michael C. Tucker**, Oakland, CA (US); **Grace Y. Lau**, Fremont, CA (US); **Craig P. Jacobson**, Moraga, CA (US)

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Correspondence Address:  
**BEYER WEAVER LLP**  
**P.O. BOX 70250**  
**OAKLAND, CA 94612-0250**

(57) **ABSTRACT**

A method of joining dissimilar materials having different ductility, involves two principal steps: Decoration of the more ductile material's surface with particles of a less ductile material to produce a composite; and, sinter-bonding the composite produced to a joining member of a less ductile material. The joining method is suitable for joining dissimilar materials that are chemically inert towards each other (e.g., metal and ceramic), while resulting in a strong bond with a sharp interface between the two materials. The joining materials may differ greatly in form or particle size. The method is applicable to various types of materials including ceramic, metal, glass, glass-ceramic, polymer, cermet, semiconductor, etc., and the materials can be in various geometrical forms, such as powders, fibers, or bulk bodies (foil, wire, plate, etc.). Composites and devices with a decorated/sintered interface are also provided.

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