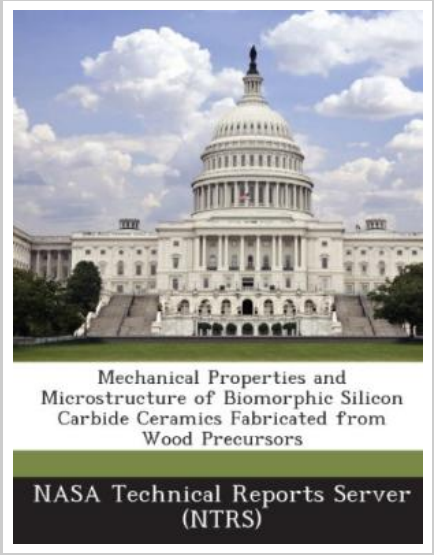

DOWNLOAD PDF

Mechanical Properties and Microstructure of Biomorphic Silicon Carbide Ceramics Fabricated from Wood Precursors

By -

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 28 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.Silicon carbide based, environment friendly, biomorphic ceramics have been fabricated by the pyrolysis and infiltration of natural wood (maple and mahogany) precursors. This technology provides an eco-friendly route to advanced ceramic materials. These biomorphic silicon carbide ceramics have tailorable properties and behave like silicon carbide based materials manufactured by conventional approaches. The elastic moduli and fracture toughness of biomorphic ceramics strongly depend on the properties of starting wood preforms and the degree of molten silicon infiltration. Mechanical properties of silicon carbide ceramics fabricated from maple wood precursors indicate the flexural strengths of 3441-58 MPa at room temperature and 230136 MPa at 1350C. Room temperature fracture toughness of the maple based material is 2. 6 - 0. 2 MPa(square root of)m while the mahogany precursor derived ceramics show a fracture toughness of 2. 0 - 0. 2 Mpa(square root of)m. The fracture toughness and the strength increase as the density of final material increases. Fractographic characterization indicates the failure origins to be pores and chipped pockets of silicon. This item ships from La Vergne,TN. Paperback.

READ ONLINE

Reviews

This is the finest book i have got study till now. It usually does not price a lot of. I found out this publication from my i and dad encouraged this book to understand.

-- ***Jamil Collins***

Absolutely among the best book I have possibly go through. I have go through and that i am certain that i am going to gonna read through once again again in the future. I am just delighted to tell you that this is basically the finest book i have got go through within my personal existence and could be he finest book for ever.

-- ***Brian Bauch***