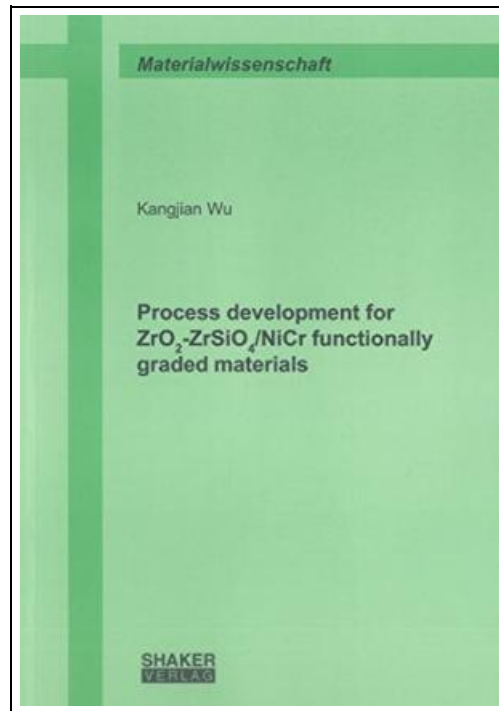


Process development for ZrO₂-ZrSiO₄/NiCr functionally graded materials



Filesize: 3.98 MB

Reviews

An incredibly awesome pdf with perfect and lucid explanations. I have read through and that i am confident that i am going to gonna read yet again yet again in the foreseeable future. I am quickly can get a delight of reading a created book.
(Mr. Johnson Hane)

PROCESS DEVELOPMENT FOR ZrO₂-ZrSiO₄/NiCr FUNCTIONALLY GRADED MATERIALS

[DOWNLOAD](#)

To save **Process development for ZrO₂-ZrSiO₄/NiCr functionally graded materials** eBook, remember to follow the web link listed below and download the document or have accessibility to other information which might be highly relevant to PROCESS DEVELOPMENT FOR ZrO₂-ZrSiO₄/NiCr FUNCTIONALLY GRADED MATERIALS book.

Shaker Verlag Sep 2013, 2013. Buch. Condition: Neu. Neuware - Summary of the work Metal-ceramic functionally graded materials (FGMs) are promising candidates for future high-temperature applications, with the ceramic component offering thermal barrier effects and protecting the metal from melting and oxidation, while the FGMs are strengthened by the metallic component. In previous works, it has been proved that ZrO₂-ZrSiO₄/NiCr FGMs of thermal barrier type possess significantly higher oxidation resistance as compared to conventional ZrO₂/NiCr FGMs. Moreover, it was also found that thermal mismatch stresses in pressurelessly sintered ZrO₂-ZrSiO₄/NiCr FGMs vanish at high temperatures. In the present study, further efforts were given with the aim to develop pressureless sintered ZrO₂-ZrSiO₄/NiCr FGMs based on two different microstructural concepts. On the one hand, five-layered ZrO₂-ZrSiO₄/NiCr FGMs with a stepwise gradient were prepared via slip casting by pressureless sintering with a shrinkage matching process. Shrinkage behavior of the constituent layers of FGM was matched based on the strategy of reducing the mismatches of shrinkage rate between the adjacent layers by a systematic adjustment of the ZrSiO₄ inclusion content and the particle size of ZrO₂ matrix. By utilizing this strategy, ZrO₂-ZrSiO₄/NiCr FGMs without any sintering defects were obtained. The prepared FGMs were further investigated with respect to their microstructures, mechanical, thermal properties and high temperature oxidation behavior. Bending strength and Young's modulus of the individual layers of FGM depend not only upon relative density, but also upon phase connectivity of metal and the amount of ZrO₂/NiCr interface. Coefficients of thermal expansion of the individual layers are lower than calculated theoretical values, due mainly to the relatively low phase connectivity of metal in the metal-ceramic composite layers. The prepared FGMs exhibit superior thermal barrier effects due to the existence of a huge amount of interfacial microstructural defects as thermal resistance in the ceramic-rich side of...

[Read Process development for ZrO₂-ZrSiO₄/NiCr functionally graded materials Online](#)[Download PDF Process development for ZrO₂-ZrSiO₄/NiCr functionally graded materials](#)

Other eBooks



[PDF] Where's Toto?/Ou Est Toto?

Access the web link under to download and read "Where's Toto?/Ou Est Toto?" PDF document.

[Read PDF »](#)



[PDF] Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success

Access the web link under to download and read "Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success" PDF document.

[Read PDF »](#)



[PDF] The Frog Tells Her Side of the Story: Hey God, I m Having an Awful Vacation in Egypt Thanks to Moses! (Hardback)

Access the web link under to download and read "The Frog Tells Her Side of the Story: Hey God, I m Having an Awful Vacation in Egypt Thanks to Moses! (Hardback)" PDF document.

[Read PDF »](#)



[PDF] Unplug Your Kids: A Parent's Guide to Raising Happy, Active and Well-Adjusted Children in the Digital Age

Access the web link under to download and read "Unplug Your Kids: A Parent's Guide to Raising Happy, Active and Well-Adjusted Children in the Digital Age" PDF document.

[Read PDF »](#)



[PDF] A Dog of Flanders: Unabridged; In Easy-to-Read Type (Dover Children's Thrift Classics)

Access the web link under to download and read "A Dog of Flanders: Unabridged; In Easy-to-Read Type (Dover Children's Thrift Classics)" PDF document.

[Read PDF »](#)



[PDF] It's Just a Date: How to Get 'em, How to Read 'em, and How to Rock 'em

Access the web link under to download and read "It's Just a Date: How to Get 'em, How to Read 'em, and How to Rock 'em" PDF document.

[Read PDF »](#)