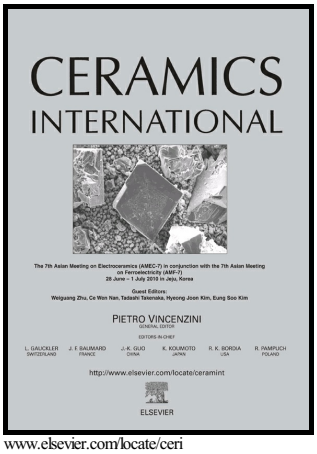


www.elsevier.com/locate/ceri

# Effects of solid loading on the fabrication of ceramic microparts by soft molding

Bo Su, Junhu Meng, Zhaozhu Zhang, Zidong Yang, Honggang Wang

PII: S0272-8842(16)31935-6
DOI: http://dx.doi.org/10.1016/j.ceramint.2016.10.203
Reference: CERI14087

To appear in: *Ceramics International*

Received date: 29 September 2016
Revised date: 25 October 2016
Accepted date: 25 October 2016

Cite this article as: Bo Su, Junhu Meng, Zhaozhu Zhang, Zidong Yang and Honggang Wang, Effects of solid loading on the fabrication of ceramic microparts by soft molding, *Ceramics International*, http://dx.doi.org/10.1016/j.ceramint.2016.10.203

# Effects of solid loading on the fabrication of ceramic microparts by soft molding

**Bo Su[a], Junhu Meng[a,*], Zhaozhu Zhang[a], Zidong Yang[b], Honggang Wang[a]**

[a]*State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, P.R. China*

[b]*School of Engineering, Zhejiang Agriculture & Forestry University, Lin'an, Hangzhou 311300, Zhejiang, P.R. China*

*Corresponding authors. Tel./fax: +86 931 4968378.

E-mail: jhmeng@licp.cas.cn (Junhu Meng).



**Abstract**

The effects of solid loading on the fabrication of ceramic microparts by soft molding were studied. Alumina microchannel parts of different dimensions (60 to 160 μm) were fabricated from well-dispersed suspensions with different solid loadings (70, 75 and 80 wt.%). The structural integrity of the green microchannel parts was examined to study the moldability of the suspensions. It was found that the minimum feature size and linear shrinkage of the microchannel parts decreased with increasing solid loading, while the green density and sintered density showed the opposite trend. The reasons for incomplete filling and demolding failures were also discussed.

***Keywords:*** A. Shaping; D. $Al_2O_3$; Microparts