

What we understand and what we need to know in sintering

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Sintering is probably the oldest human technology with the firing of pottery. Yet, modern ceramic products and powder metallurgical parts are produced mostly by the sintering technique. In this respect, it would be worth to look at our past achievements and discuss the future research directions in sintering science and technology.

This presentation will first review our current understanding of sintering phenomena – densification, grain growth and microstructural evolution – during solid state sintering (SSS) and liquid phase sintering (LPS). An emphasis will be laid on a recent issue of the effects of interfacial energy anisotropy on the sintering phenomena. Future research directions in sintering science and technology will then be suggested.

Suggested reading:

Bordia RK, Kang SJL, Olevsky E, *J. Am. Ceram. Soc.*, 100, 2314-52 (2017).