

## Dr. Dulal Chandra Jana

Designation: Scientist - E



### Academics

Ph.D. (Materials Engineering), 2015, IISc, Bangalore

M. Tech. (Materials Science), 2002, IIT, Kanpur

B. Tech. (Ceramic Engineering), 2000, University of Calcutta

### Professional experience

Scientist, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad, 2003 - present

### Research areas of interest

Ceramic processing, non-oxide ceramics, CVD coating, cellular ceramics and materials characterization

### List of publications:

1. A. Basumajumdar, **D. C. Jana** and P. K. Maiti, Effect of ZrO<sub>2</sub> additive in reaction sintering of bauxite and titania, *Journal of Indian Chemical Society*, 81 (2004), 528-530.
2. I. Ganesh, **D. C. Jana**, S. Shaik and N. Thiyagarajan, An aqueous gelcasting process for sintered silicon carbide ceramics, *Journal of the American Ceramic Society*, 89 (2006), 3056-3064. (DOI: 10.1111/j.1551-2916.2006.01198.x)
3. I. Ganesh, N. Thiyagarajan, **D.C. Jana**, Y.R. Mahajan and G. Sundararajan, Influence of chemical composition and Y<sub>2</sub>O<sub>3</sub> on sinterability, dielectric constant and CTE of β-SiAlON, *Journal of the American Ceramic Society*, 91 (2008), 115-120. (DOI: 10.1111/j.1551-2916.2007.02144.x)
4. I. Ganesh, N. Thiyagarajan, **D.C. Jana**, P. Barick and G. Sundararajan, An aqueous gelcasting route to dense β-Si<sub>4</sub>Al<sub>2</sub>O<sub>2</sub>N<sub>6</sub>-0.5SiO<sub>2</sub> ceramics, *Journal of the American Ceramic Society*, 91 (2008), 1566–1571. (DOI: 10.1111/j.1551-2916.2008.02316.x)
5. I. Ganesh, N. Thiyagarajan, D.C. Jana, P. Barick, J.M.F. Ferreira, and G. Sundararajan, Dense β- SiAlONs consolidated by a modified hydrolysis assisted solidification route, *Journal of the European Ceramic Society*, 28 (2008), 879-885. (DOI: 10.1016/j.jeurceramsoc.2007.08.005)
6. I. Ganesh, N. Thiyagarajan, **D.C. Jana**, Y.R. Mahajan and G. Sundararajan, An aqueous gelcasting process for β-Si<sub>4</sub>Al<sub>2</sub>O<sub>2</sub>N<sub>6</sub> ceramics, *Journal of the American Ceramic Society*, 91 (2008), 3121-3124. (DOI: DOI: 10.1111/j.1551-2916.2008.02588.x)
7. I. Ganesh, N. Thiyagarajan, **D.C. Jana**, G. Sundararajan, S.M. Olhero and J.M.F. Ferreira, Influence of processing route and SiO<sub>2</sub> on sintering ability, CTE and dielectric constant of β-Si<sub>4</sub>Al<sub>2</sub>O<sub>2</sub>N<sub>6</sub>, *Journal of Materials Research*, 23 (2008), 2305-2311.

8. P. Barick, **D. C. Jana** and N. Thiyagarajan, Effect of particle size on the mechanical properties of reaction bonded boron carbide ceramics, *Ceramic International*, 39 (2013), 763-770. (DOI: <http://dx.doi.org/10.1016/j.ceramint.2012.06.089>)
9. P. Barick, **D. C. Jana** and B.P. Saha, Load-dependent indentation behaviour of  $\beta$ -SiAlON and  $\alpha$ - Silicon carbide, *Journal of Advanced Ceramics*, 2, (2013), 185-192. (DOI: 10.1007/s40145-013-0060-2)
10. **D. C. Jana\***, G. Sundararajan and K. Chattopadhyay, Effect of porosity on structure, Young's modulus and thermal conductivity of SiC foams by direct foaming and gelcasting, *Journal of the American Ceramic Society*, 100 (2017), 312-322. DOI: 10.1111/jace.14544)
11. **D. C. Jana\***, G. Sundararajan and K. Chattopadhyay, Effect of monomers content in enhancing solid-state densification of silicon carbide ceramics by aqueous gelcasting and pressureless sintering, *Ceramic International*, 43 (2017), 4852-4857. (DOI: <http://dx.doi.org/10.1016/j.ceramint.2016.12.117>)
12. S. V. A. Raj, **D. C. Jana\***, P. Barick and B. P. Saha, Microstructure Evolution in Densification of SiC Ceramics by Aluminium Vapour Infiltration and Investigation of Mechanical Properties, *Ceramic International* (Accepted, DIO: <https://doi.org/10.1016/j.ceramint.2018.02.132>).
13. **D. C. Jana\***, P. Barick and B. P. Saha, Effect of Sintering Temperature on Density and Mechanical Properties of Solid-State Sintered Silicon Carbide Ceramics and Evaluation of Failure Origin, *Journal of Materials Engineering and Performance*, 27 (2018), 2960-2966. (DOI: <https://doi.org/10.1007/s11665-018-3397-4>).
14. **D. C. Jana\***, G. Sundararajan and K. Chattopadhyay, Effective activation energy for the solid-state sintering of silicon carbide ceramics, *Metallurgical and Materials Transactions A*, Vol 49 A (2018), 5599-5606. (DOI: <https://doi.org/10.1007/s11661-018-4884-9>).
15. **D. C. Jana** and B. P. Saha, Silicon carbide based lightweight mirror blanks for space optics applications. In: Y. R Mahajan and R. Johnson (Eds) Handbook of Advanced Ceramics and Composites Applications, First Edition, Springer, NY (DOI:[https://doi.org/10.1007/978-3-319-73255-8\\_37-1](https://doi.org/10.1007/978-3-319-73255-8_37-1)).

## Presentation in conferences

1. G. Sundararajan, **D. C. Jana** and K. Chattopadhyay, Processing, structure and thermal properties of solid-state sintered SiC foams by aqueous gelcasting, presented at the 39<sup>th</sup> International Conference and Exposition on Advanced Ceramics and Composites of the American Ceramic Society, Daytona, FL, January 28, 2015 (Paper No. ICACC-S9-013-2015).
2. **D. C. Jana**, Techniques for processing of non-oxide ceramics at the one-day workshop on "Advanced Ceramics: Powder to Products" of the India Ceramic Society, Hyderabad, February 16, 2018 (Invited talk)

## Awards and recognitions

National Scholarship for B. Sc. (Hons.) (1997)  
Satish Chandra Sinha Studentship in B. Tech. (2000)  
M. H. R. D. Scholarship in M. Tech. (2000)  
BOYSCAST Fellowship (2010)

### **Affiliation to professional societies:**

American Ceramic Society (Membership Number: 1166259)  
India Ceramic Society – Life Member (Membership Number: SI-411)  
Indian Institute of Metals – Life Member (Membership Number: 57554)

### **Contact information**

Centre for Non-Oxide Ceramics  
International Advanced Research Centre for Powder Metallurgy and New Materials  
(ARCI)  
Phone: +91-40-24452390 (O)  
Fax: +91-40-24442699  
Email: [janad@arci.res.in](mailto:janad@arci.res.in)