

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, mirror materials, cellular ceramics and materials characterization

List of publications:

1. A. Basumajumdar, **D. C. Jana** and P. K. Maiti, Effect of ZrO₂ 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 Y₂O₃ 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-Si₄Al₂O₂N₆-0.5SiO₂ 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-Si₄Al₂O₂N₆ 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 SiO₂ on sintering ability, CTE and dielectric constant of β-Si₄Al₂O₂N₆, *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 β -SiAlON and α - 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*, 44 (2018), 9221-9226 (DOI: <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*, 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. Mahajan and R. Johnson (Eds) Handbook of Advanced Ceramics and Composites, First Edition, Springer Nature Switzerland AG, 2020, pp. 1135-1163. (DOI: https://doi.org/10.1007/978-3-319-73255-8_37-1).
16. P. Barick, B.V. Shalini, M. Srinivas, **D. C. Jana**, and B. P. Saha, A facile route for producing spherical granules comprising water reactive aluminium nitride added composite powders. *Advanced Powder Technology*, 31 (2020) 2119-2127 (DOI: <https://doi.org/10.1016/j.appt.2020.03.009>).

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 39th 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
- India Ceramic Society
- Indian Institute of Metals

Journal reviewer

- Journal of the American Ceramic Society
- Journal of the European Ceramic Society
- International Journal of Applied Ceramic Technology
- Journal of Advanced Ceramics
- Transactions of the Indian Institute of Metals

Contact information

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