Short Bio-data

Name: Dr ABANTI NAG

Designation: Principal Scientist

Division: Materials Science Division

Area of Expertise: Functional Ceramics, Structure-property correlation, Crystallographic analysis, Nanostructured sensor and energy materials, non-oxide ceramics, Device fabrication and testing

Specialisation: Materials Science and Engineering

Publications: 28 journal papers (publication list enclosed enclosed)

Subject area willing to guide the student: Chemistry / Physics / Material Science

List of Publications

1. Influence of particle size on magnetic and electromagnetic properties of hexaferrite synthesised by sol-gel auto combustion route
   Abanti Nag, RSC Bose, K S Venu, H Singh
   Ceramics International 48, 15303 (2022)

2. Effect of homologue impurity phases on thermoelectric transport properties of heavily doped ZnO
   RSC Bose, Abanti Nag
   Journal of Physics D: Applied Physics 54, 375502 (2021)

3. High Temperature Ceramic Radomes (HTCR)–A Review
   Abanti Nag, RR Rao, PK Panda
   Ceramics International 47, 20745 (2021)

4. An Energy Harvesting Perspective of a Perovskite Based Thermoelectric Module: Fabrication and Evaluation
   Abanti Nag, K Sathiyamoorthy
   Journal of Electronic Materials 49, 7036 (2020)

5. Transport properties of p-type $Ca_{3-x}Ln_xCo_4O_9$-Ag (Ln = Lu,Yb; 0.1≤x≤0.2) oxides
   RSC Bose, Abanti Nag
   Ceramics International, 46, 3203 (2020)

6. Investigation of thermoelectric performance and power generation characteristics of dual doped $Ca_{1-x}RE'_{x/2}RE''_{x/2}MnO_3$ (RE'/RE'' = Dy, Gd, Yb, Lu; 0.05 ≤ x ≤ 0.1)
   RSC Bose, Abanti Nag
   ACS Applied Energy Materials, 1, 3151 (2018)

7. Defect-Associated Thermoelectric Transport Properties of Dual Substituted $CaMn_{1-x}Nb_{x/2}M_{x/2}O_3$ (M = Mo, W; 0.02 ≤ *x* ≤ 0.06)
   RSC Bose, Abanti Nag
   Journal of Electronic Materials 46, 6653 (2017)

8. Process dependent thermoelectric transport properties of $Ca_3Co_4O_9$
   RSC Bose, Abanti Nag
   Advanced Materials Proceedings 2, 485 (2017)

9. High temperature transport properties of co-substituted $Ca_{1-x}Ln_xMn_{1-x}Nb_xO_3$ (Ln= Yb, Lu;0.02 ≤ x ≤ 0.08)
   RSC Bose, Abanti Nag
   Materials Research Bulletin, 74, 41 (2016)

10. Effect of dual-doping on the thermoelectric transport properties of $CaMn_{1-x}Nb_{x/2}Ta_{x/2}O_3$
    RSC Bose, Abanti Nag
    RSC Advances, 6, 52318 (2016)

11. Doping induced transport properties of $Ca_{1-x}Gd_xMn_{1-x}Nb_xO_3$ (0 ≤ x ≤ 0.1)
    Abanti Nag, F. D'Sa, V Shubha
    Materials Chemistry and Physics, 151, 119 (2015)

12. Oxide thermoelectric materials – a structure-property relationship
    Abanti Nag and V. Shubha

Journal of Electronic Materials, 43, 962 (2014)

13. $Ba_3M^{III}TiM^{V}O_9$ (M^{III} = Fe, Ga, Y, Lu; M^{V} = Nb, Ta, Sb) perovskite oxides: Synthesis, structure and dielectric properties
J.E. Joy,. E Atamanik, R. Mani, Abanti Nag, R.M. Tiwari, V. Thangadurai and J.Gopalakrishnan
Solid State Sciences, 12, 1970 (2010)

14. Dielectric properties of some $MM'O_4$ and $MTiM'O_6$ (M = Cr, Fe, Ga; M' = Nb, Ta, Sb) rutile type oxides
R. Mani, S.N. Achary, K.R. Chakraborty, S.K. Deshpande, J.E. Joy, Abanti Nag, J.Gopalakrishnan and A.K. Tyagi
Journal of Solid State Chemistry, 183, 1380 (2010)

15. Manganese-mediated ferromagnetism in $La_2Fe_{1-x}Mn_{2x}Cr_{1-x}O_6$ perovskite oxides
R.M. Tiwari, M. Gadhvi, Abanti Nag, N.Y. Vasanthacharya and J. Gopalakrishnan
Journal of Chemical Sciences, 122, 529 (2010)

16. An investigation of structural, magnetic and dielectric properties of R_2NiMnO_6 (R = rareearth, Y)
R.J. Booth, R. Fillman, H. Whitaker, Abanti Nag, R.M. Tiwari, K.V. Ramanujachary, J.Gopalakrishnan, S.E. Lofland
Materials Research Bulletin, 44, 1559 (2009)

17. $FeTiTaO_6$: A New Lead-Free Relaxor Ferroelectric Based on the Rutile Structure
R. Mani, S. N. Achary, K. R. Chakraborty, J. E. Joy, Abanti Nag, A. K. Tyagi and J.Gopolakrishnan
Advanced Materials, 20, 1348 (2008)

18. $Sr_4M_3ReO_{12}$ (M = Co, Fe): New Ferromagnetic Perovskite Oxides
Abanti Nag, J. Manjanna, R. M. Tiwari and J. Gopolakrishnan
Chemistry of Materials, 20, 4420 (2008)

19. Rare-Earth Tricyanomelaminates $[NH_4]Ln[HC_6N_9]_2[H_2O]_7 \cdot H_2O$ (Ln = La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy): Structural Investigation, Solid-State NMR Spectroscopy and Photoluminescence
Abanti Nag, Bettina V. Lotsch, Jörn Schmedt auf der Günne, Oliver Oeckler, Peter J.Schmidt and Wolfgang Schnick
Chemistry – A European Journal, 13, 3512 (2007)

20. Synthesis and characterization of $Tb[N(CN)_2]_3 \cdot 2H_2O$ and $Eu[N(CN)_2]_3 \cdot 2H_2O$: two new luminescent rare-earth dicyanamides
Abanti Nag, Peter J. Schmidt and Wolfgang Schnick
Chemistry of Materials, 18, 5738 (2006)

21. Synthesis, crystal structure and thermal behavior of gadolinium dicyanamide dihydrate $Gd[N(CN)_2]_3 \cdot 2H_2O$
Abanti Nag and Wolfgang Schnick
Zeitschrift für Anorganische und Allgemeine Chemie, 632, 609 (2006)

22. Photoluminescence due to efficient energy transfer from Ce^{3+} to Tb^{3+} and Mn^{2+} in$Sr_3Al_{10}SiO_{20}$
Abanti Nag and T.R.N. Kutty
Materials Chemistry and Physics, 91, 524 (2005)

23. Effect of interface states associated with transitional nanophase precipitates in the enhancement of red emission from $SrAl_{12}O_{19}:Pr^{3+}$ by Ti^{4+} addition
Abanti Nag and T.R.N. Kutty
Journal of Physics and Chemistry of Solids, 66, 191 (2005)

24. The light induced valence change of europium in Sr_2SiO_4:Eu involving transient crystal structure
Abanti Nag and T.R.N. Kutty
Journal of Materials Chemistry, 14, 1598 (2004)

25. The mechanism of long phosphorescence of $SrAl_{2-x}B_xO_4$ ($0<x<0.2$) and $Sr_4Al_{14-x}B_xO_{25}$($0.1<x<0.4$) co-doped with Eu^{2+} and Dy^{3+}
Abanti Nag and T.R.N. Kutty
Materials Research Bulletin, 39, 331 (2004)

26. Role of interface states associated with transitional nanophase precipitates in the photoluminescence enhancement of $SrTiO_3$:Pr^{3+},Al^{3+}
Abanti Nag and T.R.N. Kutty
Journal of Materials Chemistry, 13, 2271 (2003)

27. Photoluminescence of $Sr_{2-x}Ln_xCeO_{4+x/2}$ (Ln = Eu, Sm or Yb) prepared by wet chemical method
Abanti Nag and T.R.N. Kutty
Journal of Materials Chemistry, 13, 370 (2003)

28. Role of B_2O_3 on phase stability and long phosphorescence of $SrAl_2O_4$:Eu,Dy
Abanti Nag and T.R.N. Kutty
Journal of Alloys and Compounds, 354, 221 (2003)