

## Publications

### *Publications in International SCI Journals*

#### 2004

1. S. P. Singh, Aman and **A. Tarafder**, "Effect on alkaline earth oxide on the intensity of absorption band due to  $\text{Cu}^{2+}$ ,  $\text{Mn}^{3+}$ , and  $\text{Cr}^{3+}$  in ternary silicate glasses", **Bulletin of Materials Science**, 27 (2004) 281-7.

#### 2006

2. S. Maitra, A. Rahaman, A. Sarkar and **A. Tarafdar**, "Zirconia-mullite materials prepared from semi-colloidal route derived precursors", **Ceramics International**, 32 (2006) 201-6.

#### 2007

3. K. Annapurna, **A. Tarafder** and K. K. Phani, "Compositional dependence of ultrasonic velocities in glasses", **Journal of Applied Physics**, 102 (2007) 083542 (1-5).

#### 2009

4. **A. Tarafder**, K. Annapurna, R. S. Chaliha, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Processing and properties of  $\text{Eu}^{3+}:\text{LiTaO}_3$  transparent glass-ceramic nanocomposites", **Journal of the American Ceramic Society**, 92 (2009) 1934-9.
5. **A. Tarafder**, K. Annapurna, R. S. Chaliha, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Nanostructuring and fluorescence properties of  $\text{Eu}^{3+}:\text{LiTaO}_3$  in  $\text{Li}_2\text{O}-\text{Ta}_2\text{O}_5-\text{SiO}_2-\text{Al}_2\text{O}_3$  glass-ceramics", **Journal of Materials Science**, 44 (2009) 4495-8.
6. A. D. Sontakke, **A. Tarafder**, K. Biswas and K. Annapurna, "Sensitized red luminescence from  $\text{Bi}^{3+}$  co-doped  $\text{Eu}^{3+}:\text{ZnO}-\text{B}_2\text{O}_3$  glasses", **Physica B: Condensed Matter**, 404 (2009) 3525-9.
7. R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Luminescence and dielectric properties of nano-structured  $\text{Eu}^{3+}:\text{K}_2\text{O}-\text{Nb}_2\text{O}_5-\text{SiO}_2$  glass-ceramics", **Solid State Sciences**, 11 (2009) 1325-32.

#### 2010

8. **A. Tarafder**, A. R. Molla and B. Karmakar, "Processing and properties of  $\text{Eu}^{3+}$ -doped transparent YAG ( $\text{Y}_3\text{Al}_5\text{O}_{12}$ ) nano glass-ceramics", **Journal of the American Ceramic Society**, 93 (2010) 3244-51.
9. **A. Tarafder**, A. R. Molla and B. Karmakar, "Effects of nano-YAG ( $\text{Y}_3\text{Al}_5\text{O}_{12}$ ) crystallization on the structure and photoluminescence properties of  $\text{Nd}^{3+}$ -doped  $\text{K}_2\text{O}-\text{SiO}_2-\text{Y}_2\text{O}_3-\text{Al}_2\text{O}_3$  glasses", **Solid State Sciences**, 12 (2010) 1756-63.

10. **A. Tarafder**, K. Annapurna, R. S. Chaliha, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Structure, dielectric and optical properties of  $Nd^{3+}$  doped  $LiTaO_3$  transparent ferroelectric glass-ceramic nanocomposites", **Journal of Alloys and Compounds**, 489 (2010) 281-8.
11. R. S. Chaliha, **A. Tarafder**, K. Annapurna and B. Karmakar, "Preparation and Properties of  $BaBiBO_4-SiO_2$  Glasses", **International Journal of Applied Glass Science**, 1 (2010) 368-77.
12. R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Optical and dielectric properties of isothermally crystallized nano  $KNbO_3$  in  $Er^{3+}$ -doped  $K_2O-Nb_2O_5-SiO_2$  glasses", **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy**, 75 (2010) 243-50.
13. R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Structure, dielectric and optical properties of transparent  $Nd^{3+}$ :  $KNbO_3$  nanocrystalline glass-ceramics", **Optical Materials**, 32 (2010) 1202-9.
14. S. P. Singh, K. Pal, **A. Tarafder**, M. Das, K. Annapurna and B. Karmakar, "Effects of  $SiO_2$  and  $TiO_2$  fillers on thermal and dielectric properties of eco-friendly bismuth glass microcomposites of plasma display panels", **Bulletin of Materials Science**, 33 (2010) 33-41.
15. S. P. Singh, K. Pal, **A. Tarafder**, T. Hazra and B. Karmakar, "Influence of  $SiO_2$  and  $Al_2O_3$  fillers on thermal and dielectric properties of barium zinc borate glass microcomposites for barrier rib of plasma display panels (PDPs)", **Transactions of the Indian Ceramic Society**, 69 (2010) 75-82.

## 2011

16. **A. Tarafder**, S. P. Singh and B. Karmakar, "Effects of  $TiO_2-SiO_2$  fillers on thermal and dielectric properties of bismuth glass microcomposite dielectrics for plasma display panel", **Journal of Materials Science: Materials in Electronics**, 22 (2011) 515-22.
17. **A. Tarafder**, K. Annapurna, R. S. Chaliha, S. Satapathy, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Second harmonic generation in ferroelectric  $LiTaO_3$  and  $KNbO_3$  containing bulk nano glass-ceramics", **Journal of Nonlinear Optical Physics and Materials**, 20 (2011) 49-61.
18. **A. Tarafder**, K. Annapurna, R. S. Chaliha, V. S. Tiwari, P. K. Gupta and B. Karmakar, "Effects of nano  $LiTaO_3$  crystallization on dielectric and optical properties in  $Er^{3+}$ -doped  $Li_2O-Ta_2O_5-SiO_2-Al_2O_3$  Glasses", **International Journal of Applied Ceramic Technology**, 8 (2011) 1031-41.
19. A. R. Molla, **A. Tarafder** and B. Karmakar, "Synthesis and properties of glasses in the  $K_2O-SiO_2-Bi_2O_3-TiO_2$  system and bismuth titanate ( $Bi_4Ti_3O_{12}$ ) nano glass-ceramics thereof", **Journal of Materials Science**, 46 (2011) 2967-76.
20. R. S. Chaliha, V. S. Tiwari, P. K. Gupta, K. Annapurna, **A. Tarafder** and B. Karmakar, "Structure and dielectric properties of potassium niobate nano glass-ceramics", **Journal of Materials Science: Materials in Electronics**, 22 (2011) 728-34.

21. A. D. Sontakke, K. Biswas, **A. Tarafder**, R. Sen and K. Annapurna, "Broadband  $Er^{3+}$  emission in highly nonlinear bismuth modified zinc-borate glasses", **Optical Materials Express**, 1 (2011) 344-56.
22. **A. Tarafder**, S. P. Singh and B. Karmakar, "Environmentally friendly and new generation glasses for plasma TV", **Kanch**, 4 (2011) 42-48.

## 2012

23. **A. Tarafder**, A. R. Molla, S. Mukhopadhyay and B. Karmakar, "Synthesis and properties of  $SrBi_2Ta_2O_9$ -based glass-ceramics modified with  $Eu^{3+}$ ", **Journal of the American Ceramic Society**, 95[6] (2012) 1851-57.
24. A. R. Molla, **A. Tarafder**, S. Mukherjee and B. Karmakar, "Transparent  $Eu^{3+}$ -doped ferroelectric bismuth titanate glass-ceramic nanocomposites: fabrication and properties", **Journal of the American Ceramic Society**, 95[10] (2012) 3056-63.

## 2013

25. **A. Tarafder**, A. R. Molla and B. Karmakar, "Enhanced photoluminescence and structure of  $Dy^{3+}$ -doped  $SrBi_2Ta_2O_9$ -containing transparent glass-ceramics", **Optical Materials**, 35[8] (2013) 1549-56.
26. **A. Tarafder**, A. R. Molla, C. Dey and B. Karmakar, "Thermal, structural and enhanced photoluminescence properties of  $Eu^{3+}$ -doped transparent willemite glass-ceramic nanocomposites", **Journal of the American Ceramic Society**, 96[8] 2424-2431 (2013).
27. A. R. Molla, **A. Tarafder**, S. Mukherjee, S. K. Mohanty and B. Karmakar, "Processing and properties of  $Eu^{3+}$ -doped barium bismuth titanate ( $BaBi_4Ti_4O_{15}$ ) glass-ceramic nanocomposites", **Journal of the American Ceramic Society**, 96[8] (2013) 2387-2395.
28. U. Gangadharini, A. R. Molla, **A. Tarafder** and B. Karmakar, "Synthesis and Characterization of  $Eu^{3+}$ -doped transparent glass-ceramics containing nanocrystalline  $Sr^{II}Nb^{IV}O_3$ ", **Journal of the American Ceramic Society**, 96[7] (2013) 2155-2162.

## 2014

29. **A. Tarafder**, A. R. Molla, S. Mukhopadhyay and B. Karmakar, "Fabrication and enhanced photoluminescence properties of  $Sm^{3+}$ -doped  $ZnO-Al_2O_3-B_2O_3-SiO_2$  glass derived willemite glass-ceramic nanocomposites", **Optical Materials**, 36[9] (2014) 1463-1470.
30. **A. Tarafder**, A. R. Molla, S. Mukhopadhyay and B. Karmakar, "Fabrication and photoluminescence properties of  $Ag^0$  and  $Ag^0-Er^{3+}$  containing plasmonics glass nanocomposites in the  $K_2O-ZnO-SiO_2$  system", **Solid State Sciences**, 37 (2014) 144-153.
31. A. R. Molla, C.R. Kesavulu, R. P. S. Chakradhar, **A. Tarafder**, S. K. Mohanty, S. Mukherjee, J. L. Rao, B. Karmakar and S. K. Biswas, "Microstructure, mechanical, thermal, EPR, and optical properties of  $MgAl_2O_4:Cr^{3+}$  spinel glass-ceramic nanocomposites", **Journal of Alloys and Compounds**, 583 (2014) 498-509.

32. A. R. Molla, **A. Tarafder**, S. Mukherjee and B. Karmakar, "Transparent  $Nd^{3+}$ -doped bismuth titanate glass ceramic nanocomposites: Fabrication and properties", **Optical Materials Express**, 4[4] (2014) 843-863.
33. A. R. Molla, **A. Tarafder**, C. Dey, B. Karmakar, "Synthesis and properties of ZnTe and  $Eu^{3+}$  ion co-doped glass nanocomposites", **Journal of Applied Physics**, 116[16] (2014) 163510, 13 pages.
34. C. Dey, A. R. Molla, **A. Tarafder**, M. K. Mishra, G. De, M. Goswami, G. P. Kothiyal and B. Karmakar, "Single-step in-situ synthesis and optical properties of ZnSe nanostructured dielectric nanocomposites", **Journal of Applied Physics**, 115 (2014) 134309, 10 pages.
35. M. Garai, N. Sasmal, A. R. Molla, S. P. Singh, **A. Tarafder** and B. Karmakar, "Effects of nucleating agents on crystallization and microstructure of fluorophlogopite mica-containing glass-ceramics", **Journal of Materials Science**, 49[4] (2014) 1612-1623.
36. N. Sasmal, M. Garai, A. R. Molla, **A. Tarafder**, S. P. Singh and B. Karmakar, "Effects of lanthanum oxide on the properties of barium-free alkaline-earth borosilicate sealant glass", **Journal of Non-Crystalline Solids**, 387[4] (2014) 62-70.

## 2015

37. M. Garai, N. Sasmal, A. R. Molla, **A. Tarafder** and B. Karmakar, "Effects of in-situ generated coinage nanometals on crystallization and microstructure of fluorophlogopite mica containing glass-ceramics", **Journal of Materials Science and Technology**, 31[1], 2015, 110-119.
38. J. Sarkar, **A. Tarafder** and B. Karmakar, "Processing and characterization of in-situ generated nanosilver and  $Er^{3+}$  co-doped bromoborosilicate glass nanocomposites", **Journal of Nanoscience and Nanotechnology**, 15[9] (2015) 6582-6591.
39. N. Shasmal, **A. Tarafder** and B. Karmakar, "Anomalous properties of chloroborosilicate glasses in the  $K_2O$ - $BaO$ - $Al_2O_3$ - $B_2O_3$ - $SiO_2$ - $BaCl_2$  system", **Bulletin of Materials Science**, 38[6] (2015) 1487-1497.

## 2016

40. A. R. Molla, **A. Tarafder** and B. Karmakar, "Fabrication and properties of  $Nd^{3+}$ -doped ferroelectric barium bismuth titanate glass-ceramic nanocomposites", **Journal of Alloys and Compounds**, 680 (2016) 237-246.

## 2017

41. A. R. Molla, **A. Tarafder**, N. Sasmal, J. Mistry and B. Karmakar, "Synthesis and characterization of Low  $T_g$  As-S-I chalcogenide glass for processing of raw diamonds", **International Journal of Applied Glass Science**, 8 (2017) 132-135.

## 2018

42. A. Chakrabarti, **A. Tarafder** and A. R. Molla, *Synthesis of  $\text{Eu}^{3+}$ -doped  $\text{BaBi}_2\text{Ta}_2\text{O}_9$  based glass-ceramic nanocomposites: Optical and dielectric properties*, **Journal of the American Ceramic Society**, 101[1] (2018) 231–243.
43. R. Kumar, A. R. Molla, A. Chakrabarti and **A. Tarafder**,  *$\text{Eu}^{3+}$ -doped transparent potassium lanthanum silicate ( $\text{KLaSiO}_4$ ) glass-ceramic nanocomposites: Synthesis, Properties and Application*, **Journal of the European Ceramic Society**, 38 (2018) 2639–2648.
44. **A. Tarafder**, B. Karmakar and A. R. Molla, *Nano Gold ( $\text{Au}^0$ ) and  $\text{Au}^0$ - $\text{Er}^{3+}$  Containing Plasmonic  $\text{K}_2\text{O}$ - $\text{ZnO}$ - $\text{SiO}_2$  Glass Nanocomposites: Processing and Properties*, **Transactions of the Indian Ceramic Society**, 77[1] (2018) 12–19.

## 2019

45. S. Bindai, K. Annapurna and A. Tarafder, *Realization of phosphor-in-glass thin film on soda-lime silicate glass with low sintering temperature for high color rendering white LEDs*, **Applied Optics**, 58[9] (2019) 2372–2381.

## 2022

46. S. Khan, A. R. Allu, A. Gaddam, H. R. Fernandes, S. Dutta, P. S. Kongar, **A. Tarafder**, J. M. F. Ferreira, K. Annapurna, *Use of colemanite and borax penta-hydrate in soda lime silicate glass melting - A strategy to reduce energy consumption and improve glass properties*, **Ceramics International**, 48[1] (2022) 1181–1190.
47. S. Prasad, Margit Fábíán, **A. Tarafder**, S. Kant, P. K. Sinha, S. Tripathy, A. Kalyandurg, A. R. Allu and K. Biswas, *Factors governing the sinterability, In vitro dissolution, apatite formation and antibacterial properties in  $\text{B}_2\text{O}_3$  incorporated S53P4 based glass powders*, **Ceramics International**, 48[4] (2022) 4512–4525.

## ***Publications in Conference/Symposium/Seminar***

### 2004

- 1) **A. Tarafder** and S. P. Singh, *"Studies on preparation and properties of radiation shielding lead-alkali-silicate glasses"*, presented in the "Society of Glass Technology Annual Conference" held at University of Liverpool, Liverpool, UK during April 21-23, 2004. **(Oral Presentation)**

### 2005

- 2) S. Ganguly, P. V. Mathure, R. Vijayan, **A. Tarafder**, A. V. Patwardhan, R. K. Saha, *"Role of membrane reactors in steam reforming of hydrocarbons to produce hydrogen - A review"*, presented in the "1st Annual Session of Students' Chemical Engineering Congress (SCHEMCON 2005)" organized by Indian Institute of Chemical Engineers" held at IIT Guwahati, Guwahati during December 7-9, 2005. **(Poster Presentation)**

## 2008

- 3) R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "*Isothermal nanostructured crystallization and property evaluation of Eu<sup>3+</sup> doped K<sub>2</sub>O-Nb<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub> glasses*", presented in the "National Symposium on Science and Technology of Glass/Ceramics (NSGC-08)" held at BARC, Mumbai during October 15-17, 2008. **(Poster Presentation)**
- 4) S. P. Singh, K. Pal, **A. Tarafder**, M. Das, K. Annapurna and B. Karmakar, "*Effects of TiO<sub>2</sub> and SiO<sub>2</sub> fillers on the properties of lead-free environmental-friendly ZnO-Bi<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub> glass microcomposites of plasma display panels*", presented in the "National Symposium on Science and Technology of Glass/Ceramics (NSGC-08)" held at BARC, Mumbai during October 15-17, 2008. **(Poster Presentation)**

## 2009

- 5) **A. Tarafder**, K. Annapurna, R. S. Chaliha, V. S. Tiwari, P. K. Gupta and B. Karmakar, "*Effect of nanostructuring on fluorescence properties of Eu<sup>3+</sup> doped LiTaO<sub>3</sub> containing glass-ceramics*", Presented in the "National Conference on Luminescence and its Applications (NCLA-2009)" held at IACS, Kolkata during February 19-21, 2009. **(Oral Presentation)**
- 6) R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "*Crystallization enhanced remarkable NIR luminescence in Nd<sup>3+</sup> doped K<sub>2</sub>O-Nb<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub> nano glass-ceramics*", presented in the "National Conference on Luminescence and its Applications (NCLA-2009)" held at IACS, Kolkata during February 19-21, 2009. **(Poster Presentation)**
- 7) R. S. Chaliha, K. Annapurna, **A. Tarafder**, V. S. Tiwari, P. K. Gupta and B. Karmakar, "*Fluorescence properties of Eu<sup>3+</sup> ions in K<sub>2</sub>O-Nb<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub> nano glass-ceramics*", presented in the "International Conference on Transport & Optical Properties of Nanomaterials (ICTOPON-2009)" held at University of Allahabad, Allahabad during January 5-8, 2009. **(Poster Presentation)**

## 2010

- 8) **A. Tarafder**, K. Annapurna, R. S. Chaliha and B. Karmakar, "*Isothermal crystallization of nano LiTaO<sub>3</sub> in Nd<sup>3+</sup>-doped Li<sub>2</sub>O-Ta<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> glass and their properties*", Presented in the "International Workshop and Symposium on the Synthesis and Characterization of Glass/Glass-Ceramics (IWSSCGGC-2010)" held at C-MET, Pune during July 7-10, 2010. **(Oral Presentation)**
- 9) **A. Tarafder**, "*Synthesis of transparent Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> (YAG) nano glass-ceramics by a novel low cost technique for solid-state laser application*", Presented in the "Young Scientist's Colloquium (YSC-2010)" held at Bengal Engineering and Science University, Shibpur, Kolkata during October 29, 2010. **(Oral Presentation)**
- 10) A. R. Molla, **A. Tarafder** and B. Karmakar, "*Processing and properties of bismuth titanate (Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>) glasses and glass-ceramic nano composites*" Presented in the "International Workshop and Symposium on the Synthesis and Characterization of Glass/Glass-Ceramics (IWSSCGGC-2010)" held at C-MET, Pune during July 7-10, 2010. **(Poster Presentation)**

## 2011

- 11) **A. Tarafder** and B. Karmakar, "*Transparent  $\text{Eu}^{3+}:\text{Y}_3\text{Al}_5\text{O}_{12}$  (YAG) glass-ceramic nanocomposites: synthesis and photonic application*" Presented in the "74<sup>th</sup> Annual Session of The Indian Ceramic Society" held at Hotel Taj Bengal, Kolkata during January 11-13, 2011. **(Poster Presentation)**
- 12) **A. Tarafder**, A. R. Molla and B. Karmakar, "*Transparent  $\text{Eu}^{3+}:\text{SrBi}_2\text{Ta}_2\text{O}_9$  glass-ceramic nanocomposites: a novel nonlinear photonic material*" Presented in the "The International Conference on Specialty Glass & Optical Fiber: Materials, Technology & Devices (ICGF-2011)" held at CSIR-Central Glass and Ceramic Research Institute, Kolkata during August 04-06, 2011. **(Poster Presentation)**
- 13) A. R. Molla, **A. Tarafder** and B. Karmakar, "*Transparent  $\text{Eu}^{3+}$ -doped bismuth titanate glass-ceramic nanocomposites: fabrication and properties*" Presented in the "The International Conference on Specialty Glass & Optical Fiber: Materials, Technology & Devices (ICGF-2011)" held at CSIR-Central Glass and Ceramic Research Institute, Kolkata during August 04-06, 2011. **(Poster Presentation)**
- 14) A. Sarkar, **A. Tarafder** and B. Karmakar, "*Glass formation and properties of high-expansion low-phonon antimony oxide glasses in the  $\text{MO}-\text{B}_2\text{O}_3-\text{Sb}_2\text{O}_3$  ( $M=\text{Pb}$  and  $\text{Ba}$ ) systems*" Presented in the "The International Conference on Specialty Glass & Optical Fiber: Materials, Technology & Devices (ICGF-2011)" held at CSIR-Central Glass and Ceramic Research Institute, Kolkata during August 04-06, 2011. **(Poster Presentation)**
- 15) S. P. Singh, **A. Tarafder** and B. Karmakar, "*Preparation and properties of novel environmentally friendly lead (Pb)-free glass microcomposites for barrier rib and white back dielectrics of plasma TV*" Presented in the "The International Conference on Specialty Glass & Optical Fiber: Materials, Technology & Devices (ICGF-2011)" held at CSIR-Central Glass and Ceramic Research Institute, Kolkata during August 04-06, 2011. **(Poster Presentation)**

## 2012

- 16) A. R. Molla, **A. Tarafder** and B. Karmakar, "*Transparent  $\text{Eu}^{3+}$ -doped ferroelectric barium bismuth titanate glass-ceramic nanocomposites: fabrication and properties*" Presented in the "International Conference of Young Researchers on Advanced Materials (ICYRAM-2012)" held at Singapore during July 01-06, 2012. **(Oral Presentation)**
- 17) M. Garai, N. Sasmal, **A. Tarafder** and B. Karmakar, "*Fluorophlogopite mica-containing glass-ceramic as SOFC sealant: Nucleating agent controlled microstructural evolution*" Presented in the "National Symposium on Materials and Processing-2012 (MAP-2012)" held at BARC, Mumbai during October 10-12, 2012. **(Poster Presentation)**
- 18) N. Sasmal, M. Garai, **A. Tarafder** and B. Karmakar, "*Processing and properties of barium-free glass sealant for solid oxide fuel cells*" Presented in the "National Symposium on Materials and Processing-2012 (MAP-2012)" held at BARC, Mumbai during October 10-12, 2012. **(Poster Presentation)**

- 19) A. R. Molla, **A. Tarafder**, U. Gangadharini, S. Mukherjee and B. Karmakar, "Crystallization enhanced photoluminescence in  $\text{Eu}^{3+}$ -doped barium bismuth titanate ( $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$ ) glass-ceramic nanocomposites" Presented in the "1<sup>st</sup> International Workshop on Nanomaterials (IWoN): Engineering Photon and Photon Transport" held at Jadavpur University, Kolkata during December 14-15, 2012. **(Poster Presentation)**
- 20) C. Dey, A. R. Molla, **A. Tarafder**, M. Goswami, G. P. Kothiyal and B. Karmakar, "Controlled creation of CdSe nanomaterials in borosilicate glass matrix for photonic application" Presented in the "1<sup>st</sup> International Workshop on Nanomaterials (IWoN): Engineering Photon and Photon Transport" held at Jadavpur University, Kolkata during December 14-15, 2012. **(Poster Presentation)**
- 21) U. Gangadharini, A. R. Molla, **A. Tarafder** and B. Karmakar, "Synthesis and characterization of  $\text{Eu}^{3+}$ -doped glass-ceramics containing nanocrystalline  $\text{Sr}^{\text{II}}\text{Nb}^{\text{IV}}\text{O}_3$ " Presented in the "1<sup>st</sup> International Workshop on Nanomaterials (IWoN): Engineering Photon and Photon Transport" held at Jadavpur University, Kolkata during December 14-15, 2012. **(Poster Presentation)**

### 2013

- 22) **A. Tarafder**, A. R. Molla, U. Gangadharini and B. Karmakar, "Fabrication and properties of  $\text{Eu}_2\text{O}_3$  doped transparent willemite ( $\text{Zn}_2\text{SiO}_4$ ) glass-ceramic nanocomposites" Presented in the "International Union of Materials Research Societies-International Conference in Asia-2013 (IUMRS-ICA-2013)" held at Indian Institute of Science in Bangalore during December 16-20, 2013. **(Poster Presentation)**
- 23) A. R. Molla, **A. Tarafder**, U. Gangadharini, M. Goswami, G. P. Kothiyal and B. Karmakar, " $\text{Zn}^{\text{II}}\text{Te}^{\text{VI}}$  semiconductor and  $\text{Eu}^{+3}$ -ion co-doped glass nanocomposites: Processing and characterization" Presented in the "International Union of Materials Research Societies-International Conference in Asia-2013 (IUMRS-ICA-2013)" held at Indian Institute of Science in Bangalore during December 16-20, 2013. **(Oral Presentation)**
- 24) N. Sasmal, M. Garai, A. R. Molla, **A. Tarafder** and B. Karmakar, "Influence of lanthanum oxide on the properties of alkaline-earth borosilicate glass based solid oxide fuel cell sealant" Presented in the "International Union of Materials Research Societies-International Conference in Asia-2013 (IUMRS-ICA-2013)" held at Indian Institute of Science in Bangalore during December 16-20, 2013. **(Poster Presentation)**

### 2014

- 25) A. R. Molla, **A. Tarafder** and B. Karmakar, "Functional nano glass-ceramics: synthesis, properties and applications", presented in the "International Seminar on Glasses and other Functional Materials (ISGFM-2015)", held at Acharya Nagarjuna University, Guntur, A. P. during 11-13 December, 2014. **(Poster Presentation)**
- 26) N. Shasmal, **A. Tarafder**, A. R. Molla and B. Karmakar, "Synthesis and photoluminescence of nano silver in chloroborosilicate glass and glass-ceramics",



presented in the "International Seminar on Glasses and other Functional Materials (ISGFM-2015)", held at AcharyaNagarjuna University in Guntur, A. P. during 11-13 December, 2014. **(Poster Presentation)**

## 2015

- 27) **A. Tarafder**, A. R. Molla and B. Karmakar, "*Photoluminescence of Ag<sup>0</sup> and Ag<sup>0</sup>-Er<sup>3+</sup>containing plasmonic glass nanocomposites*", presented in the "3<sup>rd</sup> International Conference on Nanoscience and Nanotechnology (ICONN-2015)", held at Department of Physics and Nanotechnology, SRM University in Chennai during 4-6 February, 2015. **(Oral Presentation)**

## 2017

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- 33) S. Khan, K. Biswas, **A. Tarafder**, Akila Prabudessai and K. Annapurna, "Alternate mineral sources for commercial soda lime silicate glass: Effective glass melting and processing" presented in the "National Conference on 'Innovation and Technologies for Ceramics' 83<sup>rd</sup> Annual Session of InCerS" held at CSIR-NIIST, Thiruvananthapuram during 11-12 December 2019. **(Poster Presentation)**

## 2022

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- 41) S. Chatterjee, S. Kaity, **A. Tarafder** and Atiar Rahaman Molla, "Crystallization kinetic studies and properties of Lithium Alumino Silicate (LAS) Glass-ceramics for Display Application" presented in the "International Conference on Exploring the

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- 45) S. Chatterjee, S. Kaity, K. Biswas, A. Tarafder and A. R. Molla, "Invisible Powerhouses: Ultra High-Strength Transparent Glass-ceramics for Cutting-Edge Displays and Armor" presented in the "National Conference on Ceramics for Frontier Sectors: Emerging Advances and Prospects (CerAP2024)"held at IIT, Roorkee during 11-12March 2024.**(Oral Presentation)**

## Publication in Book

- (i) **A. Tarafder** and B. Karmakar, "Nanostructured LiTaO<sub>3</sub> and KNbO<sub>3</sub> Ferroelectric Transparent Glass-Ceramics for Applications in Optoelectronics", in **Ferroelectrics - Material Aspects** (ISBN 978-953-307-332-3) edited by Mickaël Lallart, InTech Open Access Publisher, Vienna, Croatia, Chapter 19, pp. 389-412, 2011.
- (ii) **A. Tarafder**, A. R. Molla and B. Karmakar, "Advanced Glass-Ceramic Nanocomposites for Structural, Photonic, and Optoelectronic Applications", in **Glass Nanocomposites: Synthesis, Properties and Applications** (ISBN 978-0-323-39309-6) edited by Basudeb Karmakar, Klaus Rademann and Andrey L. Stepanov, Elsevier, Vienna, USA, Chapter 13, pp. 299-338, 2016.
- (iii) S. Shasmal, **A. Tarafder** and B. Karmakar, "Silver Glass Nanocomposites: Preparation, Properties, and Applications", in **Glass Nanocomposites: Synthesis, Properties and Applications** (ISBN 978-0-323-39309-6) edited by Basudeb Karmakar, Klaus Rademann and Andrey L. Stepanov, Elsevier, Vienna, USA, Chapter 10, pp. 239-264, 2016.

- (iv) A. Chakrabarti, S. Menon, **A. Tarafder** and A. R. Molla, "Glass-ceramics: A Potential Material for Energy Storage and Photonic Applications", in **Glasses and Glass-ceramics : Advanced Processing and Applications** (ISBN 978-981-19-5820-5) edited by Dr. K. Annapurna and Dr. Atiar R. Molla, Springer Nature, Singapore, Chapter 10, pp. 265-304, 2022.
- (v) A. Das, H. S. Maharana, S. Das, K. Annapurna and **A. Tarafder**, "Phosphor-in-glass (PiG) composites for thermally stable W-LEDs: Fabrication and Properties", in **Advances in Glass and Glass-ceramics** (978-981-97-2968-5) edited by Dr. Atiar R. Molla, Dr. K. Annapurna and J. M. Parker, Springer Nature, Singapore, Chapter 15, pp. 209-222, 2024.
- (vi) P. Patra, A. Prabhudessai, A. Acharaya, R. Dasgupta, P. Sarkar, **A. Tarafder**, K. Biswas, and K. Annapurna, "Fabrication of High Purity S/Se Based Chalcogenide Bulk Glasses for Mid-Infrared Photonics Applications", in **Advances in Glass and Glass-ceramics** (978-981-97-2968-5) edited by Dr. Atiar R. Molla, Dr. K. Annapurna and J. M. Parker, Springer Nature, Singapore, Chapter 14, pp. 197-208, 2024.

### ***Patent filed and granted***

Sl No.	Title	Country	Filed on (Date)	Granted on (Date)	Names of other inventors
1.	Low softening point lead-free transparent dielectric phosphate glass composition for plasma display panel and a process thereof ( <b>Patent: 297733</b> )	Indian	17-01-2011	18-06-2018	B. Karmakar, <b>A. Tarafder</b> and S. P. Singh
2.	Energy efficient soda lime silicate glass compositions using borax pentahydrate ( <b>Patent No.:MY-189206-A</b> )	Malaysia	15-01-2014	31-01-2022	B. Karmakar, A. R. Molla, <b>A. Tarafder</b> and R. Sen
3.	Energy efficient soda lime silicate glass compositions using borax pentahydrate ( <b>Patent No.:2958866</b> )	Germany	14-08-2015	10-03-2021	B. Karmakar, A. R. Molla, <b>A. Tarafder</b> and R. Sen
4.	Energy efficient soda lime silicate glass compositions using borax pentahydrate ( <b>Patent No.:2958866</b> )	Turkey	14-08-2015	10-03-2021	B. Karmakar, A. R. Molla, <b>A. Tarafder</b> and R. Sen
5.	Energy efficient soda lime silicate glass compositions using borax pentahydrate ( <b>Patent No.:2958866</b> )	European Patent	15-01-2014	10-03-2021	B. Karmakar, A. R. Molla, <b>A. Tarafder</b> and R. Sen

6.	Thermally cyclable glass sealant composition for intermediate temperature solid oxide fuel cell and a process thereof <b>(Patent No.:354624)</b>	India	13-07-2015	29-12-2020	B. Karmakar, R. N. Basu, <b>A. Tarafder</b> , N. Sasmal and M. Garai
7.	Energy efficient soda lime silicate glass compositions using borax pentahydrate <b>(Patent No.:105050972)</b>	China	17-09-2015	19-02-2019	B. Karmakar, A. R. Molla, <b>A. Tarafder</b> and R. Sen

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1.	R. Sen, K. Biswas, A. Mandal, A. R. Molla, <b>A. Tarafder</b> , K. Annapurna and S. Mandal	A glassy journey towards excellence	2023	' <b>A Tryst with Materials</b> ' published by CSIR-CGCRI, Kolkata	India	pp. 105-123	