

Dr. Samar Kumar Medda

LIST OF PUBLICATIONS:

1. "Inorganic-organic hybrid coatings on polycarbonate. Spectroscopic studies on the simultaneous polymerization of methacrylate and silica networks"
S. K. Medda, D. Kundu and G. De, *J. Non Cryst. solids* 2003, 318,149-156. IF: **1.766**
2. "Metal nanoparticle doped coloured films on glass and polycarbonate substrates"
S. K. Medda, M. Mitra, S. De, S. Pal and G. De, '*Pramana*, **2005**, 65, 931-936. IF: **0.649**
3. "Synthesis of Au-nanoparticle doped SiO₂-TiO₂ films: tuning of Au-surface plasmon band position through controlling the refractive index"
S. K. Medda, S. De and G. De, *J. Mater. Chem.* **2005**, 15, 3278-3284. IF: **6.626**
4. "Nonlinear optical absorption and switching properties of gold nanoparticle doped SiO₂-TiO₂ sol-gel films"
N. Venkatram, R. Sai Santosh Kumar, D. Narayana Rao, **S. K. Medda**, S. De and G. De, *J. Nanosci. Nanotech.*, **2006**, 6, 1990-1994. IF: **1.556**
5. "Refractive index controlled plasmon tuning of Au nanometals in SiO₂-ZrO₂ film matrices"
S. De, **S. K. Medda**, and G. De, *J. Nanosci. Nanotech.* **2008**, 8, 3868-3876. IF: **1.556**
6. "Metal nanoparticle doped coloured coatings on glasses and plastics through tuning of surface plasmon band position"
G. De, S. De, **S. K. Medda** and S. Pal *Bull. Mater Sci.*, **2008**, 31, 479-485. IF: **1.01**
7. "Tuning of Ag-SPR band position in refractive index controlled inorganic-organic hybrid SiO₂-PEO-TiO₂ films"
S. K. Medda, M. Mitra and G. De, *J. Chem. Sci.(Spl. issue)* **2008**, 120, 565-572. IF: **1.191**
8. "Inorganic-organic nanocomposite based hard-coatings on plastics using *in-situ* generated nano SiO₂ bonded with ≡Si-O-Si-PEO hybrid network"
S. K. Medda and G. De, *Ind. & Eng. Chem. Res.* **2009**, 48, 4326-4333. (IF **2.587**)

9. "Inorganic–Organic Nanocomposite Based Hard Coatings on Plastics Using In Situ Generated Nano-SiO₂ Bonded with ≡Si-O-Si–PEO Hybrid Network", Samar Kumar Medda and Goutam De*, *Ind. & Eng. Chem. Res.* **2009**, *48*, 6906 (*additions & corrections*). IF: **2.587**
10. "Ag-TiO₂ Nanoparticle Codoped SiO₂ Films on ZrO₂ Barrier-Coated Glass Substrates with Antibacterial Activity in Ambient Condition" A. Mukhopadhyay, S. Basak, J. K. Das, S. K. Medda, K. Chattopadhyay and G. De, *ACS Appl. Mater. Interface* **2010**, *2*, 2540-2546. IF: **6.723**
11. "Au@MO₂ (M= Ti, Zr, Si) Films on Glass by Ex Situ Incorporation Approach" Arun R Chandran, S. Pal, S. K. Medda and G. De, *Sci. Adv. Mater.* **2012**, *4*, 663-668. IF: **3.308**
12. "Superhydrophobic Films on Glass Surface Derived from Trimethylsilylated Silica Gel Nanoparticles" D. Goswami, S. K. Medda, and G. De, *ACS Appl. Mater. Interface* **2011**, *3*, 3440-3447. IF: **6.723**
13. "Covalently functionalized reduced graphene oxide by organically modified silica: a facile synthesis of electrically conducting black coatings on glass"
K. Bhowmik, S. Pramanik, S. K. Medda and G. De*, *J. Mater. Chem.* **2012**, *22*, 24690-24697. IF: **6.626**.
14. "Wavelength Selective Antireflective Coatings on Plastics with Hydrophobic Surfaces"
S. De; D. Jana; **S. K. Medda** and G. De, *Ind. & Eng. Chem. Res.* **2013**, *52*, 7737-7745. (IF **2.587**)
15. **Featured Article:**
"Wavelength Selective Antireflective Coatings on Plastics with Hydrophobic Surfaces"
S. De; D. Jana; **S. K. Medda and G. De in Advances in Engineering**
16. "Durable superhydrophobic ZnO—SiO₂ films: A new approach to enhance the abrasion resistant property of trimethylsilyl functionalized SiO₂ nanoparticles on glass"
I. Das, M. K. Mishra, S. K. Medda and G. De*
RSC Adv., 2014, *4* (98), 54989 – 54997. (IF: **3.84**); (DOI: 10.1039/C4RA10171E).
17. "Hierarchically Designed Bioactive Glassy Nanocoatings for Faster and Uniformly Dense Apatite Growth"

I. Das, S. K. Medda and G. De* S. Fagerlund, L. Hupa, M. A. Puska and P. K. Vallittu
J. Am. Ceram. Soc., **2015**, 98 [8] 2428–2437 (2015) (DOI: 10.1111/jace.13626)
IF: **2.61**

(b) PUBLICATION IN CONFERENCE PROCEEDINGS:

“Gold nanoparticle doped SiO₂-TiO₂ coatings on ordinary glass; generation of different colour by changing matrix refractive index” S K. Medda, S. De and G. De, *Proc. Int. Conf. on Nano-materials: Synthesis, Characterisation and Application*, 2004, Kolkata, Eds. S.Bandyopadhyay et al., (Tata McGraw Hill, New Delhi) **2005**, pp. 485-489.

• Poster preparation/presentation in the conference:

- (xii) “ZrO₂ incorporated TiO₂ based transparent hard reflective coatings on glass useful as a building component” presented by Srikrishna Manna, Suparana Bhattacharyya and Samar Kumar Medda* in the “*International Conference on Complex and Functional Materials (ICCFM 2018)*” organized by S. N. Bose National Centre for Basic Sciences held during 13–16 December, 2018 at Viswa Bangla Convention Centre, Kolkata in celebration of 125th birth anniversary of S. N. Bose.
- (xi) “ZrO₂ and TiO₂-ZrO₂ based reflective coatings on glass substrates useful as building component” presented by Samar Kumar Medda, Srikrishna Manna, Suparna Bhattacharyya and Goutam De in the National Seminar on “.Innovative Process Technology for Sustainable Development (IPTSD-2018)” Jointly organized by Indian Institute of Chemical Engineers, Calcutta Regional Centre, JU Campus, Kolkata and CSIR-Central Glass and Ceramic Research Institute held during 23–24 February, 2018. **Received 2nd best poster award.**
- (x) “Trimethylsilyl functionalized durable superhydrophobic ZnO–SiO₂ films on glass” by Indranee Das, Manish Kr Mishra, Samar K Medda and Goutam De* in ‘Workshop on Indian Innovations in Materials Research: New Materials and Processes’ held at CSIR-CGCRI, Kolkata, India during June 25-27, 2015 (**Received 3rd best oral presentation award**).

- (ix) *“Bioactive glass-nanosphere/nanofibre based composite coatings useful as excellent scaffolds for the growth of apatite and cells”* by Indraneel Das¹, Samar K. Medda¹, Goutam De^{1*}, Susanne Fagerlund², Leena Hupa², Mervi A. Puska³ and Pekka K. Vallittu³ in an international conference (International Union of Materials Research Society – International Conference in Asia – 2013) organized by Indian Institute of Science Bangalore during Dec 16-20, **2013**.
- (viii) “Electrically conducting reduced graphene oxide bonded with organically modified SiO₂ composite black coating on glass” by K. Bhowmik, S. Pramanik, **S. K. Medda** and G. De at one day research Scholar’s day held on July 18, **2012** in CSIR-CGCRI, Kolkata.
- (vii) “Silica nanoparticles based superhydrophobic films with antireflection property on glass surface” by D. Goswami, **S. K. Medda** and G. De at International Symposium on Advances in Nanomaterials held during December 6-7, **2010** in CSIR-CGCRI, Kolkata.
- (vi) “ Ag-TiO₂ nanoparticle Co-doped SiO₂ films on ZrO₂ barrier-coated glass substrates with antibacterial activity in ambient condition” by A. Mukhopadhyay, S. Basak, J. K. Das, **S. K. Medda**, K. Chattopadhyay and G. De at International Symposium on Advances in Nanomaterials held during December 6-7, **2010** in CSIR-CGCRI, Kolkata.
- (v) “Coloured hard-coatings on polycarbonate substrates using plasmon tuning of embedded Ag nanoparticles” by S. K. Medda, M. Mitra and G. De in the 20th Annual General Meeting, Materials Research Society of India (MRSI), held at Kolkata during February 8-10, **2009**.
- (iv) “Antireflective (AR) coatings on plastic lenses and sheets using inorganic-organic hybrid nanocomposite sols” by S. De, S. K. Medda and G. De in the international conference on ‘Nanoscience and Technology’ (ICONSAT-2008) held at Chennai, Tamil Nadu, India, during February 27-29, **2008**.
- (iii) “Development of a technology ‘Anti-scratch coatings on plastic ophthalmic lenses and sheets’ using inorganic-organic hybrid nanocomposites and its commercialization” by S. K. Medda and G. De in the international conference on ‘Nanoscience and Technology’ (ICONSAT-2008) held at Chennai, Tamil Nadu, India, during February 27-29, **2008**.
- (ii) “Inorganic-organic hybrid nanocomposite coatings for technological applications” by Goutam. De, S. K. Medda, S. De and S. Pal in the international conference on

'Leveraging Innovations & Inventions' held during October 15-16, **2007**, New Delhi.

- (i) "Au-nanoparticle incorporated SiO₂-ZrO₂ films: tuning of Au-plasmon absorption position" by S. De, G. De, and **S. K. Medda** (poster presented by Sucheta De) in the 17th Annual General Meeting, Theme Symposium: Bio, Biomedical & Natural Materials, held on February 13-15, **2006** organized by MRSI-Lucknow Chapter & University of Lucknow.

• **Invited talk /oral presentation:**

- (i) "Inorganic-organic nanocomposite based hard-coatings on plastics" in WEAR 2010 (National seminar on "Wear resistant surface and materials for industrial applications") held during August 7-8, 2010, Shibpur, Howrah.
- (ii) "Trimethylsilanized silica gel nanoparticles derived superhydrophobic films on glass surface" in MTIC-XIV (Symposium on "Modern Trends in Inorganic Chemistry", organised by School of Chemistry, University of Hyderabad during December 10-13, 2011).
- (iii) "Functional nanocomposite coatings: preparation, characterization and applications". (Ceramic nanocomposite coatings) in "One week Short Term Training Programme (STTP) on Analysis of Composite Materials" organized by Department of Chemical Engineering & Technology, BIT "Mesra during January 19-23, 2015.
- (iv) "Photocatalytic activity of TiO₂ coatings on ceramic tiles by Raman spectroscopy" in 'Workshop on Indian Innovations in Materials Research: New Materials and Processes' held at CSIR-CGCRI, Kolkata, India during June 25-27, 2015.
- (v) "Nanocomposite coatings usable for energy saving" in National Conference on Recent Developments in Nanoscience & Nanotechnology (NCRDNN 2019) held in Dr. Triguna Sen auditorium and TEQIP building, Jadavpur University during 29th - 31st January 2019.