

Publications

(A) Paper published / accepted for publication in peer reviewed / SCI Journals

- (65) “*Nano Gold Coated Hierarchically Porous Zinc Titanium Oxide Sol-Gel Based Thin Film: Fabrication and Photoelectrochemical Activity*”, Hasmat Khan, Malobi Seth, Srikrishna Samanta and **Sunirmal Jana*** (Accepted for publication in *Journal of Sol-Gel Science and Technology*). DOI: 10.1007/s10971-019-05108-x (*Author for correspondence)
- (64) “*Facile fabrication of fluorine-free superhydrophobic and superoleophilic coating on cotton fabric with superior antibacterial property*”, Malobi Seth, Hasmat Khan, Rudranil Bhowmik, Sanmoy Karmakar and **Sunirmal Jana***, *Journal of Sol-Gel Science and Technology* (Published online). DOI: 10.1007/s10971-019-05079-z (*Author for correspondence)
- (63) “*Nanoheterostructures of ZnO Nano Rods Decorated with ZnFe₂O₄ Nanoparticles by a Simple Solution Process*”, Atanu Naskar, Hasmat Khan and **Sunirmal Jana***, *Current Nanomaterials*, Volume 4, No. 1, Year 2019, PP 1-5. DOI: [10.2174/2405461504666190408150834](https://doi.org/10.2174/2405461504666190408150834) (*Author for correspondence)
- (62) “*Fabrication and Photoelectrochemical Activity of Nano Gold Coated 1D/2D Mesoscale Surface Patterned Titanium Tin Oxide Thin Film*”, Hasmat Khan, Madhurima Boral, Malobi Seth, Atanu Naskar and **Sunirmal Jana***, *Journal of Sol-Gel Science and Technology*, Vol 88, Year 2018, pp 359-370. DOI: 10.1007/s10971-018-4818-4 (*Author for correspondence)
- (61) “*Cr doped ZnO-graphene nanocomposite: One pot room temperature synthesis, characterization and antibacterial activity on mesophilic bacterial cells*”, Atanu Naskar, Hasmat Khan and **Sunirmal Jana***, *Biointerface Research in Applied Chemistry*, Volume 8, Issue 6, 2018, 3764 - 3769 (*Author for correspondence)
- (60) “*Solution based PEG and PVP capped maghemite-reduced graphene oxide nanocomposites: cell viability study*”, Atanu Naskar, Susanta Bera, Rahul Bhattacharya, Sib Sankar Roy and **Sunirmal Jana***, *Biointerface Research in Applied Chemistry*, Volume 8, Issue 6, 2018, 3751 - 3757. (*Author for correspondence)
- (59) “*Synthesis and characterization of low temperature solution based polyethylene glycol coupled ZnFe₂O₄-reduced graphene oxide nanocomposite*”, Atanu Naskar, Malobi Seth, Hasmat Khan and **Sunirmal Jana***, *SciFed Nanotech Research Letters*, Volume 2, Issue 1, Year 2018, Pages 1000014 (1-6). (*Author for correspondence)
- (58) “*Anti-biofilm activity and food packaging application of room temperature solution process based polyethylene glycol capped Ag-ZnO-graphene nanocomposite*”, Atanu Naskar, Hasmat Khan, Ratul Sarkar, Santosh Kumar, Dipankar Halder and **Sunirmal Jana***, *Materials Science and Engineering C* 91 (2018) 743-753. <https://doi.org/10.1016/j.msec.2018.06.009> (*Author for correspondence)

- (57) **“One pot low temperature synthesis of graphene coupled Gd doped ZnFe₂O₄ nanocomposite for effective removal of antibiotic levofloxacin drug”**, Atanu Naskar, Hasmat Khan and **Sunirmal Jana***, *Journal of Sol-Gel Science and Technology*, 2018, Vol. 86, Pages 599–609, DOI: 10.1007/s10971-018-4668-0. (*Author for correspondence)
- (56) **“Polyaniline Coated Graphene Hybridized SnO₂ Nanocomposite: Low Temperature Solution Synthesis, Structural Property and Room Temperature Ammonia Gas Sensing”**, Susanta Bera, Susmita Kundu, Hasmat Khan and **Sunirmal Jana***, *Journal of Alloys and Compounds* 744 (2018) 260-270 (Published online 5 Feb, 2018), DOI: 10.1016/j.jallcom.2018.02.034. (*Author for correspondence)
- (55) **“Cobalt doped ZnO–graphene nanocomposite: synthesis, characterization and antibacterial activity on water borne bacteria”**, Atanu Naskar, Hasmat Khan and **Sunirmal Jana***, *Advanced Nano-Bio-Materials and Devices- AdvNanoBioM&D* 1[3](2017) 182-190. (*Author for correspondence)
- (54) **“Effect of bovine serum albumin immobilized Au-ZnO-graphene nanocomposite on human ovarian cancer cell”**, *Journal of Alloys and Compounds*, Atanu Naskar, Susanta Bera, Rahul Bhattacharya, Sib Sankar Roy and **Sunirmal Jana***, *J. Alloys Compounds*. 734 (2018) 66-74. Available online 4 November 2017. DOI: 10.1016/j.jallcom.2017.11.029 (*Author for correspondence).
- (53) **“Fabrication, Structural Evaluation, Optical and Photoelectrochemical Properties of Soft Lithography Based 1D/2D Surface Patterned Indium Titanium Oxide Sol-Gel Thin Film”**, Hasmat Khan, Susanta Bera, Saswati Sarkar and **Sunirmal Jana***, *Surface and Coatings Technology*, Volume 328, 15 November 2017, Pages 410-419. <https://doi.org/10.1016/j.surfcoat.2017.09.007> (published online on 5th September, 2017). (*Author for correspondence)
- (52) **“Protein adsorption capability of low temperature solution based zinc ferrite nanoparticles”**, Atanu Naskar, Hasmat Khan and **Sunirmal Jana***, *Research in Chemical Intermediates* 2017, 43, 7041–7053 (*Author for correspondence). DOI: 10.1007/s11164-017-3057-6.
- (51) **“Design, Fabrication and Characterisation of Over-Coupled Long Period Fibre Grating Coated with Sol-Gel based Silica-Titania Thin Film as High Refractive Index Overlay Coating Towards Bio-Sensing Application”**, Palas Biswas, Francesco Chiavaioli, **Sunirmal Jana**, Nandini Basumallick, Cosimo Trono, Ambra Giannetti, Sara Tombelli, Aparajita Mallick, Francesco Baldini, and Somnath Bandyopadhyay, *Sensor & Actuator B: Chemical*, Vol. 253, Year 2017, Pages 418-427. DOI: 10.1016/j.snb.2017.06.139.
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- (48) “*Hierarchically-structured macro with nested mesoporous zinc indium oxide conducting film*” Susanta Bera, Moumita Pal, Saswati Sarkar and **Sunirmal Jana***, *ACS Applied Materials & Interfaces*, 2017, 9 (5), pp 4420–4424. DOI: 10.1021/acsami.6b13143 Publication Date (Web): January 23, 2017, (*Author for correspondence).
- (47) “*Structural and light coupling characteristics of patterned silica-titania sol-gel thin films with/without nano gold coating*”, Saswati Sarkar, Rik Chattopadhyay and **Sunirmal Jana***, *RSC Advances*, 6, 2016, 109218-109233. DOI: 10.1039/C6RA20411B (*Author for correspondence).
- (46) “*Ag incorporated ZnO–graphene nanocomposite: one pot low temperature solution synthesis, characterization and antibacterial activity*”, Atanu Naskar, Susanta Bera, Rahul Bhattacharya, Pritam Saha, Sib Sankar Roy, Tuhinadri Sen, and **Sunirmal Jana***, *RSC Advances*, 2016, 6, 88751-88761, DOI: 10.1039/C6RA14808E (*Author for correspondence).
- (45) “*Effect of tin content in precursor sols on surface and optical properties of tin incorporated titanium oxide amorphous thin films on glass*”, Hasmat Khan, Susanta Bera, Saswati Sarkar and **Sunirmal Jana***, *Journal of Multidisciplinary Engineering Science and Technology (JMEST)*, Vol 3, No. 6, Year 2016, Pages 5100-5106. (*Author for correspondence).
- (44) “*Hierarchical nanostructured materials*”, Susanta Bera and **Sunirmal Jana***, *Kenkyu Journal of Nanotechnology & Nanoscience*, Vol. 2, Year 2016, Pages 12-15 (*Author for correspondence).
- (43) “*Polyaniline hybridized surface defective ZnO nanorods with long-term stable photoelectrochemical activity*”, Susanta Bera, Hasmat Khan, Indranil Biswas and **Sunirmal Jana***, *Applied Surface Science*, Vol 383, Year 2016, Pages 165–176. doi:10.1016/j.apsusc.2016.05.009. (*Author for correspondence).
- (42) “*Fabrication, characterization and water wetting behavior of mesoscale 1D/2D periodic structured silica-zirconia sol-gel thin films*”, Saswati Sarkar, Shymal Kumar Bhadra and **Sunirmal Jana*** *RSC Advances*, Volume 6, Year 2016, Pages 46048-46059. DOI: 10.1039/C6RA00380J. (*Author for correspondence).
- (41) “*ZnO-graphene-polyaniline nanoflowers: solution synthesis, formation mechanism and electrochemical activity*”, Susanta Bera, Atanu Naskar, Moumita Pal and **Sunirmal Jana***, *RSC Advances* 2016, 6, 40854-40857. DOI: 10.1039/C6RA05698A. (*Author for correspondence).

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- (36) “*Sol-gel-based titania-silica thin film overlay for long period fiber grating-based biosensors*” Francesco Chiavaioli, Palas Biswas, Cosimo Trono, **Sunirmal Jana**, Somnath Bandyopadhyay, Nandini Basumallick, Ambra Giannetti, Sara Tombelli, Susanta Bera, Aparajita Mallick and Francesco Baldini, *Analytical Chemistry*, **87** (2015) 12024–12031. DOI: 10.1021/acs.analchem.5b01841.
- (35) “*Synthesis, Characterization and Cytotoxicity of Polyethylene Glycol Coupled Zinc Oxide-Chemically Converted Graphene Nanocomposite on Human OAW42 Ovarian Cancer Cells*”, Atanu Naskar, Susanta Bera, Rahul Bhattacharya, Sib Sankar Roy and Sunirmal Jana*, *Polymers for Advanced Technologies Volume 27, Issue 4, April 2016, Pages 436–443.* (First published: 28 September 2015). (*Author for correspondence).
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- (32) “*Zinc-Indium-Oxide Sol-Gel Thin Film: Surface Patterning, Morphology and Photocatalytic Activity*”, Susanta Bera, Arpita Haldar, Moumita Pal, Saswati Sarkar, Rajib Chakraborty, **Sunirmal Jana***, *Surface Engineering*, Volume **31**, Issue **7** (July 2015), pp. 492-501, DOI: 10.1179/1743294414Y.0000000414. (*Author for correspondence)

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- (26) “*Influence of Al doping on Microstructural, Optical and Photocatalytic Properties of Sol-Gel Based Nanostructured Zinc Oxide Films on Glass*”, Moumita Pal, Susanta Bera, Saswati Sarkar and Sunirmal Jana*, *RSC Adv.* **4** (2014) 11552-11563. DOI: 10.1039/c3ra44612c. (*Author for correspondence)
- (25) “*Sponge-like tin doped indium oxide (ITO) from organic-inorganic composite novel precursor foam*”, Nilanjana Das, Sunirmal Jana and Prasanta Kumar Biswas, *Sci. Adv. Mater.* **6** (2014) 1-11, Doi: 10.1166/sam.2014.1709.
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(B) Book Chapters

- (5) Chiavaioli F, Trono C, Giannetti A, Tombelli S, Biswas P, Bandyopadhyay S, **Jana S**, Bera S, Mallick A, and F. Baldini (2015). “*Label-free IgG/anti-IgG biosensing based on long period fiber gratings: a comprehensive feasibility study*” In: Proceedings of SPIE Photonics West 2015, Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XIII, vol. 9313, p. 93130R.
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- (3) **“CSIR-CGCRI: Current Nano Activities in the Area of Glass and Ceramic Materials”**
Goutam De, Indranil Manna, Someswar Datta, Debtosh Kundu, Basudeb Karmakar, Mukul Chandra Paul, **Sunirmal Jana** and Biswanath Kundu, *in* Nanodigest (CSIR Special: Indian Nano: Knowledge Creation and Innovation in Nanotechnology) Vol 4, Issue 4, September 2012, Chief Editor: K. Jayadev published by CSIR, India.
- (2) **“Efficient sol-gel processed planar optical waveguides with embossed gratings”**, R. Deb Roy, S. Sarkar, **S. Jana**, P. K. Biswas and S. K. Bhadra*, Xth International Conference on Fibre Optics and Photonics (Photonics 2011), 12-15 December 2010, Indian Institute of Technology Guwahati, India, Page No. 490, published by VIVA Books.
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- (7) I. M. Nascimento, C. Gouveia, **S. Jana**, S. Bera, J. M. Baptista, P. Moreira, P. Biwas, S. Bandyopadhyay and P. A. S. Jorge, **“High refractive index and temperature sensitivity LPGs for high temperature operation,”** 8th Iberoam. Opt. Meet. 11th Lat. Am. Meet. Opt. Lasers, Appl. 1–5 (2013).
- (6) **“Soft chemical processing of nanostructured semiconductors and their characterizations”**, **Sunirmal Jana**, Invited talk, Asia-Pacific Workshop on Materials Characterization, organized by Crystal Growth Centre, Anna University, Chennai, September 22-24, 2011, Published in Book of Abstract, Pages 67-72.
- (5) **“Synthesis and Characterization of Sol-Gel Based Nanostructured Cr(III) Doped ITO Films on Glass”** Prasanta Kumar Biswas, Susmita Kundu, **Sunirmal Jana**, and Dipten Bhattacharya, 2009, accepted for presentation at OSA, USA.
- (4) **Characterization of sol-gel derived Sn-Sb oxide film materials”**, **Sunirmal Jana**, L. K. Dua and Prasanta K. Biswas, *in* Proc. Int. Conf. on Advanced Materials and Composites (ICAMC-2007, NIIST, CSIR, Trivandrum, 2007) pp. 723-728.
- (3) **“Quantum confinement effect of in-situ generated Cu₂O in nanostructured zirconia matrix”** – Susmita Kundu, **Sunirmal Jana** and Prasanta Kumar Biswas, *in* Proc. Int. Conf. Sol-Gel Materials – Research, Technology, Applications (Wroclaw University of Technology, Wroclaw, 2004) 44.

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(D) Papers presented/contributed in National/International Conferences / Symposia / Seminars

- (65) “*Influence of periodic surface structure on optical and photoelectrochemical properties of sol-gel based indium titanium oxide thin film*” by Hasmat Khan, Malobi Seth and **Sunirmal Jana***, 82nd Annual Session, Indian Ceramic Society (ICRJ 2019), organized by Indian Ceramic Society, Jamshedpur Chapter, held during 9-11 January, 2019 at The Wave International, Jamshedpur, India. The abstract of the paper published (Page 26) in the Book of Abstract brought out in the occasion.
- (64) “*Superhydrophobic and superoleophilic coating with superior antibacterial property*” by Malobi Seth, Hasmat Khan and **Sunirmal Jana***, 82nd Annual Session, Indian Ceramic Society (ICRJ 2019), organized by Indian Ceramic Society, Jamshedpur Chapter, held during 9-11 January, 2019 at The Wave International, Jamshedpur, India. The abstract of the paper published (Page 25) in the Book of Abstract brought out in the occasion.
- (63) “*Zinc stearate based superhydrophobic and superoleophilic coating by solution technique*” by Malobi Seth, Hasmat Khan and **Sunirmal Jana***, Poster paper (No. 29), Sixth International Conference on Natural Polymers, Bio-Polymers, Bio-Materials, their Composites, Blends, IPNs, and Gels: Macro to Nano Scales (ICNP–2018) held at Kottayam, Kerala, India during 7-9 December, 2018. **The paper won the third prize.**
- (62) “*ZnO–graphene-Ag nanocomposite: solution synthesis, characterization and antibacterial activity*” Atanu Naskar, Susanta Bera and **Sunirmal Jana*** (Ref. No. 05NMNC), *Second International Conference on Material Science (ICMS2017)* organized by Department of Physics, Tripura University (A Central University), Suryamaninagar-799022, Tripura, India during 16-18 February, 2017. The abstract published in the Abstract Volume (Page No. 42) of the Conference.
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- (56) *“Nano metal coated mesoscale silica/silica-titania 1D/2D-patterned sol-gel thin films on glass capillary force lithography”* (poster paper) authored by Saswati Sarkar and **Sunirmal Jana***, 26th AGB of Materials Research Society of India (MRSI) on *Theme Symposium, Materials for Inclusive Development*, organised by Department of Physics, University of Rajasthan, Jaipur, India during 9-11 February, 2015. The abstract of the paper published in the Abstract & Souvenir Book of the *Theme Symposium* (Page No. 85).
- (55) *“Sol-gel based vacuum annealed coupled semiconductor oxide ZnO/SnO₂: Microstructural, optical and photocatalytic properties”*, Moumita Pal, Susanta Bera and **Sunirmal Jana***, **International Conference on Functional Materials during** February 5-7, 2014 held at Materials Science Centre, IIT Kharagpur, WB, India. The abstract of the paper published in the proceeding of the Conference (P-MMO-17) (Page No. 301).
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- (53) *“Sol-gel based nanostructured Al-doped zinc oxide films on glass: Doping effect on microstructural, optical and photocatalytic properties”*, Moumita Pal, Susanta Bera, Saswati Sarkar and **Sunirmal Jana***, IURMS-ICA 2013 held at IISC, Bangalore during 16-20 December, 2013. The abstract of the paper published in the Book of Abstract published in the Conference.

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- (50) *“Effect of Sol/Solution Composition on Microstructure and Optical Properties of ZnO-ZrO₂ Thin Films on Glass”* by Susanta Bera, Moumita Pal and **Sunirmal Jana***, accepted for ORAL presentation at 21st International Symposium on Processing and Fabrication of Advanced Materials (PFAM-21)” to be held at IIT Guwahati, Assam, India during December 10-13, 2012.
- (49) *“Sol-Gel Based ZnO-SnO₂ Thin Films: Tailoring Properties by Varying Precursor Sol pH”*, Moumita Pal, Susanta Bera and **Sunirmal Jana***, accepted for ORAL presentation at 21st International Symposium on Processing and Fabrication of Advanced Materials (PFAM-21)” to be held at IIT Guwahati, Assam, India during December 10-13, 2012.
- (48) *“Design, Preparation and Characterization of Nanostructured Materials by Wet Chemical Method”* (Invited talk) Sunirmal Jana, Abstract published in **National Seminar on Crystal Growth** (NSCG-XVI), Department of Physics, Aditanar College of Arts and Science, Tiruchendur, Tamil Nadu during 19-21, January, 2012.
- (47) *“Sol-gel based low -ε indium tin oxide (ITO) coating on glass”* Priyanka Ghosh, Debabrata Moitra, Aparajita Mallick, Aniruddha Panda, **Sunirmal Jana** and Prasanta Kumar Biswas* presented as poster at India-Australia International Workshop on Nanotechnology in Materials and Energy Application organised by Jadavpur University (School of Materials Science and Technology, Faculty of Science), University of New South Wales (School of Materials Science and Technology, Faculty of Engineering) in association with Indian Institute of Ceramics, Jadavpur, Kolkata, India during 29-31 December, 2011.
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Auditorium, Jadavpur University, Kolkata-700032 during 8-9 July, 2011, presented as poster paper. (*Author for correspondence).

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- (42) “*Multilayer sol-gel ITO coatings on glass with antireflection property*”, N. Das, B. Koley, A. Panda, A. Mallick, S. S. Ghosh, **S. Jana**, P. K Biswas, International Conference on Recent Trends in Materials Science and Technology, ICMST – 2010, IIST Campus, ATF Area, VSSC, near Veli Lake, Thiruvananthapuram, No. 9.52 – 9.55, Organized by Indian Institute of Space Science and Technology (IIST) and Materials Research Society of India (MRSI), Thiruvananthapuram Chapter.
- (41) “*Patterning of nano silver coated silica thin film by soft lithographic technique*”, **S. Jana***, S. Sarkar and P. K. Biswas, International Conference on Fundamental and Applications and Nanoscience and Technology (ICFANT 2010), ICFANT 2010, 9-11 December, 2010, Jadavpur University, Kolkata, Paper No. O-35, Page No. 113, Jadavpur University, Kolkata-700032, India (*Author for correspondence).
- (40) “*Synthesis and Optical Properties of Luminescence Active Nano Materials*”, delivered by **Sunirmal Jana as invited speaker** at **International Conference on Advancement of Nanoscience and Technology (ICOANN – 2010)** organized by Department of Nanoscience and Nanotechnology, Alagappa University, Karaikudi 630 003, India during 1-3 March, 2010.
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- (38) “*Preparation and Photoluminescence study of Rhodamine 6G Dye Impregnated Silica Gel PMMA Composite*” authored by Nilanjana Das, **Sunirmal Jana**, K. Annapurna, Alok K Ray and Prasanta K Biswas, presented in the International Conference on Sol-Gel Processes for Advanced Ceramics (SGPAC-2009) held during 11-14 October, 2009 at Convention Centre, Anupuram (Kalpakkam), Tamil Nadu, India.
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