

LIST OF PUBLICATIONS, PATENTS AND PRESENTATIONS

(Dr. Swastik Mondal, CSIR-CGCRI)

Publications in refereed (SCI) journals: published/accepted 56, under review 1

Popular journal articles: 1, Book chapters: 1

Patents (filed/granted): 1

Presentations at conferences: 40

Refereed journals (SCI):

- 1) "Effect of dopant oxidation states on enhanced low ppm CO sensing by copper doped zinc oxide."
Pratyasha Rudra, Nirman Chakraborty, Velaga Srihari, Ajay K Mishra, Sagnik Das, Debdulal Saha and **Swastik Mondal***
Materials Chemistry and Physics, (2023), Volume: **295**, page: 127047 (IF: 4.778).
- 2) "Zn₃Sb₄O₆F₆ and KI-Doped Zn₃Sb₄O₆F₆: A Metal Oxyfluoride System for Photocatalytic Activity, Knoevenagel Condensation, and Bacterial Disinfection."
Sayantani Paul, Bibaswan Sen, Nilendu Basak, Nirman Chakraborty, Kiron Bhakat, Sangita Das, Ekramul Islam, **Swastik Mondal**, Sk Jahir Abbas and Sk Imran Ali.
Inorganic Chemistry, (2023), Volume: **62**, page: 1032-1046 (IF: 5.436).
- 3) "Band gap engineered Sn-doped bismuth ferrite nanoparticles for visible light induced ultrafast methyl blue degradation."
Sonam Chakraborty, Nirman Chakraborty, **Swastik Mondal** and Mrinal Pal
Ceramics International, (2023), Volume: **48**(24), page: 37253-37263 (IF: 5.532).
- 4) "Ferromagnetic Ni_{1-x}V_xO_{1-y} Nano-Clusters for NO Detection at Room Temperature: A Case of Magnetic Field-Induced Chemiresistive Sensing."
Nirman Chakraborty, Surya Narayan Panda, Ajay K Mishra, Anjan Barman and **Swastik Mondal***
ACS Applied Materials & Interfaces, (2022), Volume: **14**(46), page: 52301-52315 (IF: 10.383).
- 5) "Surface-analyte interaction as a function of Topological Polar Surface Area of Analytes in metal (Cd, Al, Ti, Sn) sulphide, nitride and oxide based chemiresistive materials."
Nirman Chakraborty, Sagnik Das, Debdulal Saha and **Swastik Mondal***
Sensors and Actuators A: Physical, (2022), Volume: **341**, page: 113610 (IF: 4.291).
- 6) "Chemiresistive NH₃ detection at sub-zero temperatures by polypyrrole loaded Sn_{1-x}Sb_xO₂ nanocubes."
Nirman Chakraborty and **Swastik Mondal***
Materials Horizons, (2022), Volume: 9 (6), Page: 1750-1762 (IF: 15.717).
- 7) "pH-regulated hydrothermal synthesis, characterization of Sb₄O₅X₂ (X=Br/Cl) and its use for the dye degradation of methyl orange both with and without light illumination."

Sayantani Paul, Bibaswan Sen, Nirman Chakraborty, Sangita Das, **Swastik Mondal**, Asoke Prasun Chattopadhyay, Sk Imran Ali.

RSC Advances, 2022, Volume: **12**, page: 8374-8384 (IF: 4.036).

- 8) "Dopant Mediated Surface Charge Imbalance in Enhancing Performance of Metal Oxide Chemiresistive Gas Sensors."

Nirman Chakraborty and **Swastik Mondal***

J. Mater. Chem. C, 2022, Volume: **10**, page: 1968-1976 (Selected as HOT Article), (IF: 8.067).

- 9) "Dopant Induced Cationic Bivalency in Hierarchical Antimony Doped Tin Oxide Nanoparticles for Room Temperature SO₂ Sensing."

Nirman Chakraborty, Pradeepta Kumar Ghose, Pratyasha Rudra, Sagnik Das, Debdulal Saha, Ajay K. Mishra, Ambarish Sanyal and **Swastik Mondal***

J. Mater. Chem. A, (2021), Volume: **9**, page: 21824-21834, (IF: 14.511).

- 10) "Poly Aniline (PANI) Loaded Hierarchical Ti_{1-x}Sb_xO₂ Rutile Phase Nanocubes for Selective Room Temperature Detection of Benzene Vapor."

Nirman Chakraborty, Sagnik Das, Akbar Hossain Debdulal Saha and **Swastik Mondal***

Sensors and Actuators B: Chemical, (2021), Volume: **347**, page: 130622, (IF: 9.221).

- 11) "Roles of structure and electron mobilization in enhanced ethanol sensing by Al doped SnO₂ nanoparticles."

Nirman Chakraborty, Sagnik Das, Velaga Srihari, Dibya Jyoti Mondal, Debdulal Saha, Sanjit Konar, Ajay K. Mishra and **Swastik Mondal***

Mater. Adv., (2021), Volume: **2**, page: 3760-3769, (IF: not yet received).

- 12) "Ammonia Sensing by Sn_{1-x}V_xO₂ Mesoporous Nanoparticles."

Nirman Chakraborty, Ambarish Sanyal, Sagnik Das, Debdulal Saha, Samar Kumar Medda, and **Swastik Mondal***

ACS Applied Nano Materials, (2020), Volume: **3**(8), page: 7572-7579, (IF: 6.14).

- 13) "Boranes: The Boron Subhydride B_{104.67}H₃ with a Distorted β-Boron Crystal Structure."

Claudio Eisele, Christian B. Hübschle, **Swastik Mondal**, Somnath Dey, Sander van Smaalen, and Carsten Paulmann

Inorg. Chem., (2020), Volume: **59**(18), page: 13295-13300, (IF: 5.436).

- 14) "Influence of pressure on the transport, magnetic, and structural properties of superconducting Cr_{0.0009}NbSe₂ single crystal."

K. Manikandan, Rukshana Pervin, C. Saravanan, M. Sathiskumar, Nirman Chakraborty, Parasharam M. Shirage, **Swastik Mondal**, Velaga Srihari, Himanshu Kumar Poswal and S. Arumugam

RSC Advances, (2020), Volume: **10**, page: 13112-13125, (IF: 4.036).

- 15) "Role of Steric Hindrance in the Crystal Packing of Z' = 4 Superstructure of Trimethyltin Hydroxide."

Somnath Dey, Andreas Schonleber, **Swastik Mondal**, Sk Imran Ali, Sander Van Smaalen

Crystal Growth & Design, (2018), Volume: **18**(3), page: 1394-1400, (IF: 4.01).

- 16) “2, 2'-Bis (methylene) biphenylidene-bridged bis (3-indenyl) dichloride complexes of Ti, Zr and Hf as catalyst precursors for ethylene polymerization.”
Mohamed EM Abdelbagi, **Swastik Mondal**, Sander van Smaalen, Helmut G Alt
Polyhedron, (2018), Volume: **144**, page: 176-186, (IF: 2.975).
- 17) “A Terminally Capped Synthetic, Acyclic Tripeptide Forms Dimer in the Solid, Liquid and Gaseous States.”
Satyabrata Samui, Arpita Chakraborty, Soumi Biswas, Gajendra Singh, **Swastik Mondal**, Semanti Ghosh, Angshuman Bagchi, Ravi S Ampapathi, Jishu Naskar
Chemistry Select, (2018), Volume: **3**(9), page: 2523-2527, (IF: 2.307).
- 18) “1, 2-Bis (dimethylsilyl) phenylidene bridged zirconocene and hafnocene dichloride complexes as precatalysts for ethylene polymerization.”
M. E. M. Abdelbagi, W. Milius, **Swastik Mondal**, S. van Smaalen, HG Alt
Journal of Organometallic Chemistry, (2018), Volume: **854**, page: 76-86, (IF: 2.345).
- 19) “Charge Transfer and Fractional Bonds in Stoichiometric Boron Carbide.”
Swastik Mondal*
Chemistry of Materials, (2017), Volume: **29**(15), page: 6191-6194, (IF: 10.508).
- 20) “Hierarchical $Ti_{1-x}Zr_xO_{2-y}$ nanocrystals with exposed high energy facets showing co-catalyst free solar light driven water splitting and improved light to energy conversion efficiency.”
Shreyasi Chattopadhyay, **Swastik Mondal**, Goutam De
J. Mater. Chem. A, (2017), Volume: **5**, page: 17341-17351, (IF: 14.511).
- 21) “Disorder and defects are not intrinsic to boron carbide.”
Swastik Mondal*, Elena Bykova, Somnath Dey, Sk Imran Ali, Natalia Dubrovinskaia, Leonid Dubrovinsky, Gleb Parakhonskiy and Sander van Smaalen
Scientific Reports, Nature Publishing Group, (2016), Volume: **6**, page: 19330, (IF: 4.996).
- 22) “Superspace description of trimethyltin hydroxide at T=100 K.”
Somnath Dey, Andreas Schoenleber, **Swastik Mondal**, and Sander van Smaalen
Zeitschrift Für Kristallographie, (2016), Volume: **231**, page: 427-434, (IF: 1.383).
- 23) “The $Z' = 12$ superstructure of A-cobalt(III) sepulchratetrinitrate governed by C-H...O hydrogen bonds.”
Somnath Dey, Andreas Schoenleber, **Swastik Mondal**, Andreas Schoenleber, S. J. Prathapa, Sander van Smaalen and F. K. Larsen
Acta Crystallographica Section B, (2016), Volume: **72**, page: 372-380, (IF: 1.986).
- 24) “Resonance-stabilized partial proton transfer in hydrogen bonds of incommensurate Phenazine–chloranilic acid.”
Leila Noohinejad, **Swastik Mondal**, Sk Imran Ali, Somnath Dey, Sander van Smaalen and Andreas Schoenleber
Acta Crystallogr. Sect. B, (2015), Volume: **71**, Page 228-234, (IF: 1.986).
- 25) “Synthesis, Superstructure and Vacancy-Ordering in $2H-Cu_xTa_{1+y}Se_2$ ($x, y = 0.52, 0$ and $0.16, 0.08$).”
Sk Imran Ali, **Swastik Mondal** and Sander van Smaalen
Zeitschrift fuer Anorg. Allg. Chem. (2015), Volume: 641, 464-469, (IF: 1.413).
- 26) “Ferroelectricity of phenazine–chloranilic acid at T = 100 K.”

- Leila Noohinejad, **Swastik Mondal**, Alexander Wölfel, Sk Imran Ali, Andreas Schoenleber and Sander van Smaalen
J. Chem. Crystallogr. (2014), Volume: 44, page: 387-393, (IF: 0.582).
- 27) “Charge density distribution of 3-(1-amino-ethylidene)-2-methoxy-2-oxo-2,3-dihydro-2λ⁵benzo[e][1,2]oxaphosphinin-4-one.”
Magdalena Małecka, **Swastik Mondal**, Sander van Smaalen, Carsten Paulmann
Acta Crystallogr. Sect. B, (2013), volume: 69, page: 621-628, (IF: 1.986).
- 28) “Experimental evidence of orbital order in α-B₁₂ and γ-B₂₈ polymorphs of elemental boron.”
Swastik Mondal, Sander van Smaalen, Gleb Parakhonskiy, Siriyara Jagannatha Prathapa, Leila Noohinejad, Elena Bykova, and Natalia Dubrovinskaia, Dmitry Chernyshov, Leonid Dubrovinsky
Phys. Rev. B, (2013), volume: 88, page: 024118, (IF: 3.908).
- 29) “Electron densities by the maximum entropy method for various types of prior densities: a case study on three amino acids and a tripeptide.”
Siriyara Jagannatha Prathapa, **Swastik Mondal**, Sander van Smaalen
Acta Crystallogr. Sect. B, (2013), volume: 69, page: 203-213, (IF: 1.986).
- 30) “Investigation of phases in Al₂₃Co₁₅Cr₂₃Cu₈Fe₁₅Ni₁₆ and Al₈Co₁₇Cr₁₇Cu₈Fe₁₇Ni₃₃ high entropy alloys and comparison with equilibrium phases predicted by Thermo-Calc.”
A. Manzonía, H. Daoud, **Swastik Mondal**, S. van Smaalen, R. Voelkl, U. Glatzel, N. Wanderka
Journal of Alloys and Compounds, (2013), volume: 552, page: 430-436, (IF: 6.371).
- 31) “Self-intercalation and vacancy ordering in 6R-Cu_xTa_{1+y}S₂ (x ≈ 0.23, y = 0, 0.06).”
Sk Imran Ali, **Swastik Mondal**, Siriyara Jagannatha Prathapa, Sander van Smaalen, Steffen Zoerb, Bernd Harbrecht
Zeitschrift fuer Anorg. Allg. Chem. (ZAAC), (2012), Volume 638, Page 2625-2631, (IF: 1.413).
- 32) “Experimental dynamic electron densities of multipole models at different temperatures.”
Swastik Mondal, Siriyara Jagannatha Prathapa and Sander van Smaalen
Acta Crystallogr. Sect. A, (2012), Volume: 68, Page: 568-581, (IF: 2.331).
- 33) “Structural study of three o-hydroxyacetophenone derivatives using X-ray powder diffraction: interplay of weak intermolecular interactions.”
B. Chattopadhyay, S. Ghosh, **Swastik Mondal**, M. Mukherjee and A. K. Mukherjee
CrystEngComm, (2012), Volume 14, page 837-846, (IF: 3.756).
- 34) “A New Half-Condensed Schiff Base Compound: Highly Selective and Sensitive pH-Responsive Fluorescent Sensor.”
U. C. Saha, K. Dhara, B. Chattopadhyay, S. K. Mandal, **Swastik Mondal**, S. Sen, M. Mukherjee, S. van Smaalen, and P. Chattopadhyay
Organic Letters, (2011), Volume 13(17), page 4510-4513, (IF: 6.072).
- 35) “Electron Deficient and Polycenter Bonds in the High-Pressure γ-B₂₈ Phase of Boron.”
Swastik Mondal, S. van Smaalen, A. Schoenleber, Y. Filinchuk, D. Chernyshov, S. I. Simak, A. S. Mikhaylushkin, I. A. Abrikosov, E. Zarechnaya, L. Dubrovinsky and N. Dubrovinskaia
Physical Review Letters, (2011), Volume 106(21), page 215502, (IF: 9.185).

[Reported in "Spotlight on Science" (ESRF Newsletter, 20/06/2011), "blick in die forschung" (University of Bayreuth Newsletter 2011 – Nr. 15, 09/06/2011) and "idw news" (InformationsdienstWissenschaft, 10/06/2011)]

- 36) "Modulated anharmonic ADPs are intrinsic to aperiodic crystals: a case study on incommensurate Rb_2ZnCl_4 ."
Liang Li, Alexander Woelfel, Andreas Schoenleber, **Swastik Mondal**, Antoine M. M. Schreurs, Loes M. J. Kroon-Batenburg and Sander van Smaalen
Acta Crystallographica Section B (2011), Volume 67, page 205-217, (IF: 1.986).
- 37) "High Pressure Synthesis of Single Crystals of α -Boron"
G. Parakhonskiy, N. Dubrovinskaia, L. Dubrovinsky, **Swastik Mondal** and S. van Smaalen
Journal of Crystal Growth (2011), Volume 321(1), page 162-166, (IF: 1.83).
- 38) "Polymeric Colorants: Statistical Copolymers of Indigo Building Blocks with Defined Structures."
G. Voss, M. Drechsler, S. Eller, M. Gradzielski, D. Gunzelmann, **Swastik Mondal**, S. van Smaalen and C. S. Voertler
Helvetica Chimica Acta (2009), Volume 92(12), Page 2675-2697, (IF: 2.201).
- 39) "Two highly unsymmetrical tetradentate (N_3O) Schiff base copper(II) complexes: template synthesis, structural characterization, magnetic and computational studies"
A. Ray, D. Maity, A. Pramanik, K. K. Das, M. Nandi, A. Bhaumik, M. Nethaji, **Swastik Mondal**, M. Mukherjee, Md. Ali
Polyhedron (2009), Volume 28, Page 3659-3666, (IF: 2.975).
- 40) "Microstructural characterization of interpenetrating light weight metal matrix composites"
F. Scherm, R. Voelkl, S. van Smaalen, **Swastik Mondal**, P. Plamondon, G. L'Esperance, F. Bechmann, U. Glatzel
Material Science and Engineering A (2009), Volume 518, Page 118-123, (IF: 5.234).
- 41) "Hydrothermal synthesis and structural characterization of novel α -Keggin unit-supported Cu(II)- and Mn(II)-bipyridine complexes from a *tri*-lacunary precursor"
R. Chatterjee, Md. Ali, M. G. B. Drew, M. Nethaji, **Swastik Mondal** and M. Mukherjee
Transition Metal Chemistry (2009), Volume 34(1), Page 1-5, (IF: 2.266).
- 42) "Cyanometallate incorporated supramolecular networks based on a nitroalkyl-substituted $\text{Cu}^{\text{II}}\text{N}_4$ precursor: Synthesis, crystal structure, thermal and electrochemical studies"
A. Ray, P. C. Mandal, A. D. Jana, W. S. Sheldrick, **Swastik Mondal**, M. Mukherjee and Md. Ali
Polyhedron (2008), Volume 27(14), Page 3112-3122, (IF: 2.975).
- 43) "A novel cation induced polymeric chain in $\text{Na}_8[\{\text{Cu}(\text{gly})_2\}_2\{\text{H}_2(\text{H}_2\text{W}_{12}\text{O}_{42})\}] \cdot 24\text{H}_2\text{O}$: hydrothermal synthesis, spectroscopic characterization and X-ray structure analysis"
D. Dutta, D. Maity, Md. Ali, M. G. B. Drew, **Swastik Mondal** and M. Mukherjee
Transition Metal Chemistry (2008), Volume 33(3), Page 347-351, (IF: 2.266).
- 44) "Supramolecular architecture in an oxovanadium(V)-schiff base complex: Synthesis, Ab initio structure determination from X-ray powder diffraction, DNA binding and cleavage activity"
Swastik Mondal, M. Mukherjee, K. Dhara, S. Ghosh, J. Ratha and A. K. Mukherjee
Crystal Growth & Design (2007), Volume 7(9), Page 1716 – 1721, (IF: 4.01).

- 45) "Reversible water inclusion in a porous magnetic material synthesized from copper(II) incorporated metal-organic framework showing alternate ferro- and antiferromagnetic interactions"
Ambarish Ray, Chang Seop Hong, **Swastik Mondal**, Monika Mukherjee and Md. Ali
Inorganic Chemistry Communications (2007), Volume 10(5), Page: 527 – 530, (IF: 3.428).
- 46) "Synthesis, characterization and X-ray structure of copper(II) and nickel(II) complexes of N,N,N',N'-tetrakis(2-benzimidazolylmethyl)-1,2-ethanediamine"
Md. Mijanuddin, S. Gangopadhyay, W. S. Sheldrick, H. Mayer-Figge, **Swastik Mondal** and Md. Ali
Journal of Indian Chemical Society (2006), Volume 83(6), Page: 568-573, (IF: 0.243).
- 47) "Synthesis, spectroscopic and crystallographic studies on two copper(II) benzimidazole complexes: Supramolecular frameworks built from N-H...O, N-H...Cl and O-H...Cl hydrogen bonds"
Md. Mijanuddin, S. Gangopadhyay, **Swastik Mondal**, Monika Mukherjee and Md. Ali
Indian Journal of Chemistry Section A (2006), Volume 45(4), Page: 858-863, (IF: 0.491).
- 48) "A Novel Three-Dimensional Network Containing Pr(III) Ions And Tartrate: Synthesis, Spectroscopic, Thermal, Ab Initio X-Ray Powder Structure Analyses, And Photoluminescence Properties"
Swastik Mondal, Monika Mukherjee, Santu Chakraborty and Alok K. Mukherjee
Crystal Growth & Design (2006), Volume 6(4), Page 940-945, (IF: 4.01).
- 49) "Synthesis, crystal structure and helical ladder-like assembly of a novel terephthalato-bridged binuclear Cu(II) complex: First report on terephthalate bridging under tetraaza macrocyclic environment"
Ambarish Ray, Md. Mijanuddin, Rajarshi Chatterjee, Jaromír Marek, **Swastik Mondal** and Mahammad Ali
Inorganic Chemistry Communications (2006), Volume 9, Page: 167-170, (IF: 3.428).
- 50) "Synthesis and characterization of two novel isostructural polymeric 1D mono-halo-bridged octahedral copper (II) chains with a diaza-diamine ligand"
Ambarish Ray, Dipankar Maiti, William S. Sheldrick, Heike Mayer-Figge, **Swastik Mondal**, Monika Mukherjee, Song Gao and Mahammad Ali
Inorganica Chimica Acta (2005), Volume: 358, Issue 12, Page: 3471-3477, (IF: 3.118).
- 51) "Synthesis, crystal structure and molecular conformation of (\pm)-1-oxoferruginol and (\pm)-shonanol"
Swastik Mondal, Monika Mukherjee, Arnab Roy and Debabrata Mukherjee
Zeitschrift fuer Kristallographie (2004), volume: 219, page: 659-663, (IF: 1.383).
- 52) "Unusual formation of β -carboline dimers under Bischler–Napieralski reaction conditions: an old reaction with a new direction"
Bikash Pal, Parasuraman Jaisankar, Venkatachalam Seshagiri, **Swastik Mondal** and Monika Mukherjee
Tetrahedron Letters (2004), volume: 45, page: 6489-6492, (IF: 2.032).
- 53) "Synthesis, X-ray structure and magnetic properties of the azido adducts of quadridentate Schiff base manganese (III) complexes"

Sandip Saha, Dasarath Mal, Subratanath Koner, Ashis Bhattacharjee, Philipp Guetlich, **Swastik Mondal**, Monika Mukherjee and Ken-Ichi Okamoto
Polyhedron (2004), volume: 23, page: 1811-1817, (IF: 2.975).

- 54) “Synthesis, spectroscopic and crystallographic studies of (1RS,2SR)-1-(2-carboxy-4-methyl-5-methoxyphenyl)-1,2-dimethyl-cyclopentane-2-carboxylic acid: supra-molecular framework built from O–H...O and C–H...O hydrogen bonds”
Swastik Mondal, Monika Mukherjee, Tapas Paul and Debabrata Mukherjee
Zeitschrift fuer Kristallographie (2004), volume: 219, page: 456-460, (IF: 1.383).
- 55) “Dimethyl 6-methoxy-4a β -methyl-9-oxo-1,2,3,4,4a,9,10,10a β -octa-hydro-phenanthrene-1,1-dicarboxylate”
Swastik Mondal, Monika Mukherjee, Arnab Roy and Debabrata Mukherjee
Acta Crystallographica Section C (2003), volume: 59, page: o132-o134, (IF: 1.172).
- 56) “(1SR,2RS,5RS,6SR,8RS)-7,7-Dimethyltricyclo[6.2.1.0^{1,6}]undecane-2,5,6-triol:a supramolecular framework built from O–H...O hydrogen bonds”
Swastik Mondal, M. Mukherjee, A. Roy, D. Mukherjee and M. Helliwell
Acta Crystallographica Section C (2002), volume: 58, page: o474-o476, (IF: 1.172).

Publications under review:

- 57) “High-resolution surface structure determination from bulk X-ray diffraction data.”
Nirman Chakraborty and **Swastik Mondal***
(2022), <https://arxiv.org/abs/2205.13239> .

Popular journal articles:

- 58) “Roentgenkristallographie: Chemische Bindungen in elementarem Bor γ -B.”
Swastik Mondal, Sander van Smaalen, Natalia Dubrovinskaia, Leonid Dubrovinsky
GIT Labor-Fachzeitschrift (2011), 55(10), 700-703. Language: German

Book chapters:

- 59) “Experimental Electron Density Studies of Inorganic Solids.”
Swastik Mondal in the book *Understanding Intermolecular Interactions in the Solid State: Approaches and Techniques*(Monographs in Supramolecular Chemistry No. 26), Editor: Deepak Chopra, Royal Society of Chemistry (UK), (2018), page: 130 - 158.

Patents (filed/granted):

- 1) “A Novel Metal Oxide-Polymer Nano Composite for Ammonia Sensing at Temperatures below ambient including Sub-Zero Temperatures” **Swastik Mondal** and Nirman Chakraborty, Indian Patent Application No.: 202111015506 (Date of filing: 31.03.2021). A PCT (Patent Cooperation Treaty) application (Application No.: PCT/IN2022/050309) has been filed (date of filing: 26.03.2022) for multiple countries.

Presentations at Conferences:

- 1) “Surface engineered Polyaniline (PANI) loaded $Ti_{1-x}Sb_xO_2$ nanocubes for efficient room temperature detection of benzene vapor”
Nirman Chakraborty and **Swastik Mondal**
Analytical Research Forum, 13-14th June, 2022, organized by Royal Society of Chemistry, UK.
- 2) “Material surface - analyte interactions with similar energy rates vary as quadratic function of topological polar surface area of analytes”
Nirman Chakraborty and **Swastik Mondal**
Reserach Scholars’ Day, 9th June 2022, organized by CSIR-CGCRI, Kolkata.
- 3) “Material surface – analyte interactions with similar energy rates vary as quadratic function of Topological Polar Surface Area of Analytes”
Nirman Chakraborty and **Swastik Mondal**
Surface Science Young Investigator Symposium in ACS Spring 2022 Meet, San Diego, California on 20th march 2022.
- 4) “Dopant induced cationic bivalency in antimony doped tin oxide nanosystems for excellent room temperature detection of SO_2 gas”
Nirman Chakraborty, Pradeepta Kumar Ghosh, Pratyasha Rudra, Sagnik Das, Debdulal Saha, Ajay K. Mishra, Ambarish Sanyal and **Swastik Mondal**
3rd National Conference on Frontiers in Modern Physics, 26-27 November, 2021 organized by Adamas University, Kolkata.
- 5) “Role of Structure and Electron Mobilization in Enhanced Ethanol Sensing by Paramagnetic Aluminium doped Tin Oxide Nanoparticles”
Nirman Chakraborty, Sagnik Das, Velaga Srihari, Dibya Jyoti Mondal, Debdulal Saha, Sanjit Konar, Ajay K. Mishra and **Swastik Mondal**
27th CRSI National Symposium in Chemistry, 26-29th September, 2021 organised by CRSI and IISER Kolkata.
- 6) “Effects of Cu doping on CO sensing properties of $Zn_{1-x}Cu_xO$ ”
Pratyasha Rudra, Nirman Chakraborty and **Swastik Mondal**
International Conference on Condensed Matter & Device Physics (ICCMDP-2021), Gandhinagar, Online) Sep 9-11, 2021.
- 7) “Understanding the gas sensing mechanism in vanadium doped tin oxides using X-ray diffraction and X-ray photoelectron spectroscopy”
Nirman Chakraborty, Ambarish Sanyal, Sagnik Das, Debdulal Saha, Samar Kumar Medda and **Swastik Mondal**
25th Congress of IUCR (International Union of Crystallography) during 14-22nd August, 2021.
- 8) “Antimony doped tin oxide nano-systems for excellent room temperature detection of SO_2 gas”
Nirman Chakraborty, Pradeepta Kumar Ghosh, Pratyasha Rudra, Sagnik Das, Debdulal Saha, Ajay K. Mishra, Ambarish Sanyal and **Swastik Mondal**
FIMTA 2021 organized by CSIR-IMMT, Bhubaneswar during 4-6th August, 2021

- 9) "Material surface – analyte interactions with similar energy rates vary as univariate quadratic function of Topological Polar Surface Area of Analytes"
Nirman Chakraborty, Sagnik Das, Debdulal Saha and **Swastik Mondal**
Young Physicists' Meet 2021 organized by Adamas University, Kolkata during 30-31st July, 2021.
- 10) "Simultaneous Application of Structure and Electron Mobilization in Enhanced Ethanol Sensing by Paramagnetic Al Doped SnO₂ Nanoparticles"
Nirman Chakraborty, Sagnik Das, Velaga Srihari, Dibya Jyoti Mondal, Debdulal Saha, Sanjit Konar, Ajay K. Mishra and **Swastik Mondal**
15th International conference on materials chemistry (MC15) by Royal Society of Chemistry during 12-15th July, 2021.
- 11) "Structure-Ammonia Sensing Property Correlation in Sn_{1-x}V_xO₂ Mesoporous Nanoparticles"
Nirman Chakraborty, Ambarish Sanyal, Sagnik Das, Debdulal Saha, Samar Kumar Medda and **Swastik Mondal**
29th Annual Meeting of the German Crystallographic Society (DGK) on 17th March, 2021
- 12) "Improved NO₂ sensing by antimony doped tin oxide nanoparticles: An interplay of Crystal structure and surface electronic structures"
Nirman Chakraborty, Ambarish Sanyal, Ajay K. Mishra, Velaga Srihari, Sagnik Das, Debdulal Saha and **Swastik Mondal**
Online International Conference on "Advanced Materials" at P. C. Jabin Science College, Hubballi, Karnataka on 20th July, 2020.
- 13) "Effects of Cu doping on structure and gas sensing properties of wurtzite ZnO"
Pratyasha Rudra, Nirman Chakraborty, Sagnik Das, Debdulal Saha and **Swastik Mondal**
International Conference on Nano-Science And Technology, Mar 5-7, 2020, Kolkata
- 14) "Effects of temperature on structure-property relationships in Cu doped ZnO"
Pratyasha Rudra, Nirman Chakraborty, Ajay Kumar Mishra, Velaga Srihari and **Swastik Mondal**
2nd Materials Conclave and 21st AGM of MRSI in February, 2020, at CSIR CGCRI, Kolkata
- 15) "Investigations into the Role of Crystal and Electronic Structures in Ammonia Sensing Properties of Vanadium doped Tin (IV) Oxides"
Nirman Chakraborty, Ambarish Sanyal, Sagnik Das, Debdulal Saha, Samar Kumar Medda and **Swastik Mondal**
2nd Materials Conclave and 21st AGM of MRSI in February, 2020, at CSIR CGCRI, Kolkata.
- 16) "Quantitative phase analysis using Powder X-ray diffraction" (invited talk)
Swastik Mondal
National Workshop on Advanced Analytical Techniques in Materials Science (WAATMS 2020), January 20-23, 2017, Department of Nanoscience and Technology, University of Calicut, India.
- 17) "Effects of Structural Changes on Gas Sensing Properties of Antimony Doped Oxides of Tin"
Nirman Chakraborty, Ambarish Sanyal, Ajay K. Mishra, Velaga Srihari, Sagnik Das, Debdulal Saha and **Swastik Mondal**

International Workshop on Physics of Semiconductor Devices, IWPSD, 2019 organised jointly by IIT Kharagpur and SNBNCBS at Novotel, Kolkata in December, 2019.

- 18) “Investigations on the role of crystal structure in Ethanol sensing properties Of Vanadium doped Oxides of Tin (IV)”
Nirman Chakraborty, Ambarish Sanyal, Ajay K. Mishra, Velaga Srihari, Sagnik Das, Debdulal Saha and **Swastik Mondal**
MRSI (Materials Research Society of India), *Young Scientists’ Colloquium* at SINP, Kolkata, in September, 2019.
- 19) “Quantitative Analysis of Rutile and Orthorhombic Phases in Vanadium Doped Oxides of Tin”
Nirman Chakraborty, Ambarish Sanyal, Ajay K. Mishra, Velaga Srihari, Sagnik Das, Debdulal Saha and **Swastik Mondal**
47th National Seminar on Crystallography, at BARC, Mumbai in June, 2019.
- 20) “Comprehending chemical bonding in icosahedral boron-rich solids through experimental charge density studies” (poster)
Swastik Mondal
47th National Seminar on Crystallography (NSC), June19-22, 2019, DAE convention centre BARC, Mumbai, India.
- 21) “Chemical bonding in icosahedral boron-rich solids” (invited talk)
Swastik Mondal
Structural Aspects in Studying Chemistry of Materials (SASChem-2017), August 29-30, 2017, IISER-Kolkata, India.
- 22) “New insights into the bonding mechanism of boron carbide” (talk)
Swastik Mondal
XXIV Congress of the International Union of Crystallography, August 21-28, 2017, Hyderabad International Convention Centre, Hyderabad, India.
- 23) “A new bonding model for boron carbide” (talk)
Swastik Mondal
2nd International Conference on Alumina and Other Functional Ceramics (AOFC-2017), February 15-17, 2017, CSIR-CGCRI, Kolkata, India.
- 24) “Unravelling the mysteries of boron carbide” (talk)
Swastik Mondal
13th Conference of Asian Crystallographic Association (AsCA-2015), December 5-8, 2015, Science City, Kolkata, India.
- 25) “Electron-density study of boron-carbide at 100 K” (talk)
Swastik Mondal, Elena Bykova, Somnath Dey, Sk Imran Ali, Natalia Dubrovinskaia, Leonid Dubrovinsky, Gleb Parakhonskiy, Sander van Smaalen
23rd Annual Meeting of the German Crystallographic Society (DGK2015), March 16-19, 2015, Georg-August-University, Göttingen, Germany.
- 26) “Experimental evidence of orbital order for icosahedral B₁₂ cluster in boron-rich solids” (talk)
Swastik Mondal, Sander van Smaalen, Natalia Dubrovinskaia, Leonid Dubrovinsky
21st Annual Meeting of the German Crystallographic Society (DGK2013), March 19-22, 2013, Neue Mensa, Agricolastraße 10a, 09599 Freiberg, Germany.

- 27) “Experimental Charge Density Studies of Boron” (talk)
Swastik Mondal, Sander van Smaalen, Gleb Parakhonskiy, Elena Bykova, Natalia Dubrovinskaia, Dmitry Chernyshov, Leonid Dubrovinsky
Sixth European Charge Density Meeting (ECDM-6), September 15-20, 2012; Hotel Patria, Strbskepleso, Slovakia.
- 28) “Charge Density Study of alpha-Boron at 100 K” (talk)
Swastik Mondal, S. van Smaalen, N. Dubrovinskaia, G. Parakhonskiy, L. Dubrovinsky
Laue Day and 20th Annual Meeting of the German Crystallographic Society (DGK2012), March 12-15, 2012, Ludwig-Maximilians University, Geschwister-Scholl-Platz 1, 80539 Munich, Germany.
- 29) “Charge Density Study of γ -B₂₈” (poster)
Swastik Mondal, S. van Smaalen, A. Schoenleber, Y. Filinchuk, D. Chernyshov, S. I. Simak, A. S. Mikhaylushkin, I. A. Abrikosov, E. Yu. Zarechnaya, L. Dubrovinsky, N. Dubrovinskaia
GDCh-wissenschaftsforumChemie 2011, September 04-07, 2011. Messe Bremen, Congress Centrum Bremen (CCB), 28215 Bremen, Germany.
- 30) “Electron Deficient and Polycenter Bonds in γ -B₂₈” (talk)
Swastik Mondal, S. van Smaalen, A. Schoenleber, Y. Filinchuk, D. Chernyshov, S. I. Simak, A. S. Mikhaylushkin, I. A. Abrikosov, E. Yu. Zarechnaya, L. Dubrovinsky, N. Dubrovinskaia
XXII Congress of the International Union of Crystallography, August 22-30, 2011. Palacio Municipal de Congreso de Madrid, 28042 Madrid, Spain.
- 31) “A qualitative and quantitative analysis of dynamic charge densities” (poster)
Prathapa, S. J., **Swastik Mondal**, Sander van Smaalen
XXII Congress of the International Union of Crystallography, August 22-30, 2011. Palacio Municipal de Congreso de Madrid, 28042 Madrid, Spain.
- 32) “Experimental Charge Density Study of γ -B₂₈” (poster)
Swastik Mondal, S. van Smaalen, A. Schoenleber, Y. Filinchuk, D. Chernyshov, E. Yu. Zarechnaya, L. Dubrovinsky, N. Dubrovinskaia
26th European Crystallographic Meeting, August 29 - September 2, 2010. Darmstadtium Conference Center, Schlossgraben 1, 64283 Darmstadt, Germany.
- 33) “Accurate Charge Density Study of Diphenylphosphinic Acid [Ph₂P(O)OH] at 100 K”(talk)
Swastik Mondal, J. Netzel, S. van Smaalen, H. Ott, G. Schwab, J. Henn, D. Stalke
17th Annual meeting of German Crystallographic Association, March 9-12, 2009. Welfenschloss Hannover, Hannover, Germany.
- 34) “Charge Density Study of Diphenylphosphinic Acid [Ph₂P(O)OH] at 100 K” (poster)
Swastik Mondal, J. Netzel, S. van Smaalen, H. Ott, G. Schwab, J. Henn, D. Stalke
5th European Charge Density Meeting, June 6-11, 2008. Gravedona, Como, Italy.
- 35) “Electron Density Study of Diphenylphosphinic Acid [Ph₂POOH] at 100 K” (poster)
Swastik Mondal, J. Netzel, S. van Smaalen, H. Ott, G. Schwab, J. Henn, D. Stalke
16th Annual meeting of German Crystallographic Association, March 3-6, 2008. University of Erlangen, Erlangen, Germany.

- 36) “*Ab-initio* structure determination of two o-hydroxy-acetophenone derivatives from laboratory powder-diffraction data” (poster)
Swastik Mondal, Monika Mukherjee
36th National Seminar on Crystallography, January 22–24, 2007. Department of Crystallography and Biophysics, University of Madras, Guindy Campus, Chennai 600025, India
- 37) “*Ab-initio* structure determination of an organic compound from PXRD data”(poster)
Swastik Mondal, Monika Mukherjee
Recent Trends in Magnetism and Condensed Matter Physics(RTMCP-2005), 23rd December 2005. IACS, Jadavpur, Kolkata, India.
- 38) “*Ab-initio* structure determination of a metal complex from laboratory X-ray powder data” (poster)
Swastik Mondal, Monika Mukherjee
XX Congress of the International Union of Crystallography, August 23-31, 2005 Florence, Italy.
- 39) “Disorder and hydrogen bonding pattern in (1RS,2SR)-1-(2-carboxy-4-methyl-5-methoxyphenyl)-1,2-dimethylcyclopentane-2-carboxylic acid” (poster)
Swastik Mondal, Monika Mukherjee *33rd National Seminar on Crystallography*, January 8-10, 2004. National Chemical Laboratory, Pune, India.
- 40) “Crystal and molecular structure of a biologically active compound: 1-Oxoferruginol”(poster)
Swastik Mondal, Monika Mukherjee
Condensed matter days 03, August 27-29, 2003. Jadavpur University, Kolkata, India.