

JOURNAL REFEREE

ACS Nano, 2D materials	Applied Physics Letters	Rev. of Scientific Instruments
Journal of Applied Physics	Chemical Communication	J. Physical Chemistry C
Crystal Growth & Design	Biosensor and Bioelectronics	Science of Advanced Materials
J. Material Chemistry C	J. Material Chemistry B	Analyst
CryEngComm	Applied Physics A	Analytical Methods
Physical Chemistry Chemical Physics		Int. J. Energy Research
J. Raman Spectroscopy	Talanta	RSC Advance
J. Nanoparticle Research	Int. J. Electronics & Comm.	IEEE Sensors
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy		

IV. Selected Journal Publications

Preprints

1. **Prasana K. Sahoo**, S. Memaran, F. A. Nugera, Y. Xin, T. D. Márquez, Z. Lu, W. Zheng, N. D. Zhigadlo, D. Smirnov, L. Balicas, H. R. Gutiérrez; *Bilayer Lateral Heterostructures of Transition Metal Dichalcogenides and their optoelectronic response*. **ACS Nano (Revised) e-print: arXiv:1904.00311**

Published

1. **Prasana K. Sahoo**,* S. Memaran, Yan Xin, Luis Balicas, H. R. Gutiérrez, *One-pot growth of two-dimensional lateral heterostructures via sequential edge-epitaxy*; **Nature 553 (2018) 63–67**. [<http://rdcu.be/DZYE>]

News Highlights

- **Nature News & Views**, 3 Jan 2018, V 553, 32-34; Nanoscale interfaces made easily.
 - **Nature Japan and Phy.Org**: Creating 2-D dichalcogenide structures using chemical vapor deposition, Jan 4, 2018.
 - **News Highlights; National High Magnetic Field Laboratory, FL, USA**: A unique way to bond together single-layer semiconductors opens a door to new nanotechnologies.
2. C. E. Stevens, J. Paul, T. Cox, **Prasana K. Sahoo**, H. R. Gutierrez, V. Turkowski, D. Semenov, S. McGill, M. Kapetanakis, I. Perakis, D. Hilton, D. Karaiskaj, *Biexcitons in monolayer transition metal dichalcogenides tuned by magnetic fields: toward a pure biexciton liquid*; **Nature Communication 9 (2018) 3720**.
 3. T. Afanesh, **Prasana K. Sahoo**, I. A. P. Nobrega, Y. Xin, H. R. Gutierrez, Laser-induced chemical modification of monolayer Transition Metal Dichalcogenides; **Advanced Functional Materials, 28 (2018) 1802949**.
 4. **Prasana K. Sahoo**, H. Zong, J. Liu, W. Xue, X. Lai, H. R. Gutiérrez, D. V. Voronine, Probing nano-heterogeneity and aging effects in lateral 2D heterostructures using tip-enhanced photoluminescence, **Optical Materials Express, 9 (2019) 1620-1631**.
 5. R. Janissen[#], **Prasana K. Sahoo**,[#] C. A. Santos, A. M. da Silva, A. A. G. Zuben, A. D. T. Costa, P. Celedon, N. I. T. Zanchin, D. B. Almeida, D. S. Oliveira, C. L. Cesar, A. P. de Souza, M. A. Cotta, *InP Nanowire FET Biosensor with tailored Biofunctionalization: Ultrasensitive and Highly Selective Disease Biomarker Detection*; **Nano Letters 17 (2017) 5938–5949**. ^{#Equal Contribution}
 6. **Prasana K. Sahoo**, R. Janissen, M. P. Monteiro, A. Cavalli, D. M. Murillo, M. V. Merfa, C. L. Cesar, H. F. Carvalho, A. A. de Souza, E. P. A. M. Bakkers, M. A. Cotta; *Nanowire Arrays as Cell Force Sensors to Investigate Adhesin-Enhanced Holdfast of Single Cell Bacteria and Biofilm Stability*; **Nano Letters 16 (2016) 4656-4664**.

7. A. M. da Silva, **Prasana K. Sahoo**, A. Cavalli, A. A. de Souza, E. P.A.M. Bakkers, C. L. Cesar, R. Janissen, M. A. Cotta, Nanowire Arrays as Force Sensors with Super-Resolved Localization Position Detection: Application to Optical Measurement of Bacterial Adhesion Forces; **Small Methods** **2** (2018) 1700411.
8. A. K. Prasad, **Prasana K. Sahoo**, S. Dhara, S. Dash, A. K. Tyagi, Differences in hydrogen absorption over Pd and Pt functionalized CVD-grown GaN nanowires; **Materials Chemistry and Physics** **211** (2018) 355e360.
9. M. Moeller, D. S. Oliveira, **Prasana K. Sahoo**, M. A. Cotta, F. Iikawa, P. Motisuke, A. M. Sanchez, M. M. de Lima Jr., A. G. Cristobal, A. Cantarero; *Fermi Energy Dependence of the Optical Emission in core/shell InAs Nanowire Homostructures*; **Nanotechnology** **28** (2017) 295702.
10. J. Pan, **Prasana K. Sahoo**, A. Dalzini, Z. Hayati, C. M. Aryal, P. Teng, J. Cai, H. R. Gutierrez, L. Song; Membrane Disruption Mechanism of a Prion Peptide (106-126) Investigated by Atomic Force Microscopy, Raman and Electron Paramagnetic Resonance Spectroscopy; **J. Physical Chemistry B** **121** (2017) 5058.
11. M. P. Monteiroa, J. H. Clericia, **Prasana K. Sahoo**, C. L. Cesar, A. A. de Souza, M. A. Cotta, *Stiffness signatures along early stages of Xylella fastidiosa biofilm formation*; **Colloids & Surfaces B: Biointerfaces** **159** (2017) 174.
12. R. Janissen, D. M. Murillo, B. Niza, **Prasana K. Sahoo**, M.M. Nobrega, C.L.Cesar, M. L. A. Temperini, H. F. Carvalho, A.A. de Souza, M.A. Cotta; *Spatiotemporal distribution of exopolysaccharides and phenotypic changes mediate Xylella fastidiosa adhesion and biofilm formation*; **Scientific Reports** **5** (2015) 9856.
13. A. Patsha, **Prasana Sahoo**, S. Amirthapandian, A. K. Prasad, A. Das, A. K. Tyagi, M. A. Cotta, S. Dhara, *Localized Charge Transfer Process & Surface Band-Bending in methane sensing by GaN Nanowires*; **J. Physical Chemistry C** **119** (2015) 21251.
14. **Prasana Sahoo**,* S. Dhara, S. Amirthapandian, M. Kamruddin, *Evolution of GaN Nanowire morphology during Catalyst-Induced growth Process*; **J. Material Chemistry C** **1** (2013) 7237.
15. **Prasana Sahoo**,* S. Sumathi, S. Dhara, G. Saini, S. Rangarajan, S. Dash, A.K. Tyagi, *Direct label Free Ultrasensitive Impedimetric DNA Biosensor using Dendrimer Functionalized GaN Nanowires*; **Biosensor & Bioelectronics** **44** (2013) 164.
16. **Prasana Sahoo**,* P. S. Murthy, S. Dhara, V. P. Venugopala, A. Das, A. K. Tyagi, *Probing the Cellular Damage in Bacteria Induced by GaN Nanoparticles using Confocal Laser Raman spectroscopy*; **J. Nanoparticle Research** **15** (2013) 1841.
17. **Prasana Sahoo**, S. Dhara, S. Dash, S. Amirthapandian, A. K. Prasad, A. K. Tyagi, *Room temperature H₂ sensing using Pt- functionalized GaN nanotubes*; **Int. Journal of Hydrogen Energy** **38** (2013) 3513.
18. **Prasana Sahoo**,* S. Dhara, S. Amirthapandian, M. Kamruddin, S. Dash, A. K. Tyagi, *Role of surface polarity in self-catalyzed nucleation and evolution of GaN nanostructures*; **Crystal Growth & Design** **12** (2012) 2375.
19. **Prasana Sahoo**,* S. Dhara, S. Dash, A. K. Tyagi, *Photo-assisted local oxidation, and fragmentation by ultra-small Pt nanoclusters functionalized single GaN Nanotubes*; **J. Nanoparticle Research** **14** (2012) 1103.

20. **Prasana Sahoo**, J. Basu, S. Dhara, H. C. Fang, C. P. Lu, T. R. Ravindran, S. Dash and A. K. Tyagi, *Single step growth dynamics and multi-functional properties of core-shell GaN on Ga₂O₃ freestanding microbelts*; **J. Material Science** **47** (2012) 3447.
21. A. Patsha, **Prasana Sahoo**, S. Dhara, S. Amrithapandian, A. K. Tyagi, *Probing Crystallographic Orientation of a single GaN nanotube using polarized Raman imaging*; **J. Raman Spectroscopy** **44** (2012) 651.
22. **Prasana Sahoo**, D. Oliveira, M. A. Cotta, S. Dhara, S. Dash, A. Tyagi, B. Raj, *Enhanced surface potential variation on nanoprotusions of GaN microbelt as a probe for humidity sensing*; **J. Physical Chemistry C** **115** (2011) 5863.
23. **Prasana Sahoo**,* S. Dhara, S. Dash, I. Manna, B. Raj, A. K. Tyagi, *Air trapped nano-cavity induced superhydrophobicity on GaN microbelt*; **Applied Physics Letter** **98** (2011) 043103.
[Featured Article in **Nature India**; *Water Repelling Surface Sensor*, **2011**, doi:10.1038/nindia.2011.31. & **Virtual J. of Nanoscale Science & Technology**, **23** (5) 2011]
24. **Prasana Sahoo**,* S. Dhara, S. Dash, A. K. Tyagi, *One Dimensional GaN Nanostructures: Growth Kinetics and Applications*; **Nanoscience & Nanotechnology-ASIA** **1** (2011) 140-170. (Invited Review)
25. **Prasana Sahoo**, S. Dhara, C. R. Das, S. Dash, A. K. Tyagi, B. Raj, P. Chandramohan, M. P. Srinivasan, *Surface optical modes in GaN nanowires*; **Int. J. Nanotechnology** **7** (2010) 823.

VII. BOOK CHAPTER

1. S. Dhara, **Prasana Sahoo**, A. K. Tyagi, B. Raj, *Surface Optical Modes in Semiconductor Nanowires; Nanowires-Implementations and Applications*, **2011**, *In tech- Open Access Book*, ISBN 978-953-307-318-7.
2. **Prasana Sahoo**, R. Janissen, A. Das, D. Inbakandan, P. S. Murthy; *Nanoparticulates and Nanocomposites as Antibiofilm Agents: Evolving Perspectives*, **2018**, *Biofilm Control: Biomedical & Industrial Environments*. ISBN 978-81-8487-623-9 (In Press).

IX. TALK/SEMINAR PRESENTATION (Invited)

1. *Emerging van der Waals heterostructures for Optoelectronics*, **Dec 1-2, 2018**, **National Workshop on Advanced Materials & Applications**, Siksha 'O' Anusandhan University, Bhubaneswar, India.
2. *Nanoscale imaging of Bio and Nano- Interfaces*. **July 23-29, 2017**, **Texas A&M-Princeton-Baylor Summer Symposium on Quantum Science and Engineering**, Casper College, Wyoming, USA.
3. *Real time tracking of cellular forces using InP nanowire arrays*, **Jan- 2016**, **Emerging Trends in Advanced Functional Materials**, Institute of Physics, Bhubaneswar, India.
4. *Controlling the Evolution of Group III-V based Quasi one-dimensional Nanostructures; and applications*, **28-April-2014**; **Department of Physics, University of Louisville**, Louisville, Kentucky, USA.
5. *Controlling the Growth of Group III-V Nanowire during VLS Process and Application to Nanosensor*, **26-29 Nov-2013**; **Indo-Brazil-South Africa (IBSA) workshop on Nanotechnology**, Curitiba, Brazil.

X. Conference Presentations (* Contributory Presentation)

1. Two dimensional lateral heterostructures and superlattices: controlled growth and nano-optical imaging, **Prasana Sahoo* et al. 2018**, **Gordon Research Conference, Two Dimensional Electronics Beyond Graphene**, MA, USA.
2. Transport properties of mono and bi-layered lateral heterostructures of transition metal dichalcogenides, **Prasana Sahoo et al 2018**, **Gordon Research Conference, Two Dimensional Electronics Beyond Graphene**, MA, USA.

3. *Multi-junction lateral 2D heterostructures of transition metal dichalcogenides via sequential edge epitaxy*, Prasana Sahoo *et al.*, **2018, APS March Meeting, Los Angeles, California, USA.**
4. *One-pot growth of 2D lateral superlattices via vapor phase modulation*, Prasana Sahoo *et al.* **2018, APS March Meeting, Los Angeles, CA, USA.**
5. *Tunable band gap coupling in 2D heterostructures based on ternary alloys of transition metal dichalcogenides*, F. Nugera, Prasana Sahoo *et al.*, **2018, APS March Meeting, Los Angeles, CA, USA.**
6. *Multi-Junction Lateral 2D Heterostructures of Transition Metal Dichalcogenides*, Prasana K. Sahoo* *et al.*, **2017, AVS 64th International Symposium and Exhibition, Tampa, FL, USA.**
7. *In situ laser induced chemical modification of ultrathin MoSe₂*, Prasana Sahoo* *et al.*, **2017, 2nd International Symposium on Science and Technology of 2D materials, Orlando, FL, USA.**
8. *Synthesis and Characterization of 2-D Materials*, S. Pazos, Prasana Sahoo *et al.*, **2017, APS March Meeting, New Orleans, USA.**
9. *Site Selective Photo-Conversion of Ultrathin WSe₂ to WS₂*, Prasana Sahoo* *et al.*, **2016, MRS Fall Meeting & Exhibit, Boston, USA.**
10. *Probing the cellular force components during ex-vivo bacterial growth on InP Nanowire Arrays*; Prasana Sahoo *et al.*, **2015, MRS Fall Meeting & Exhibit, Boston, USA. (Nominated for Best MRS Poster Award)**
11. *Synergistic effect of nanotopography and surface chemistry on bacterial growth utilizing InP nanowire arrays*, Prasana Sahoo *et al.*, **2015, 10th EBSA European Biophysics Congress, Dresden, Germany.**
12. *Direct Label-free Ultrasensitive Nanowire Based Biosensor for Early Phytopathogen Diagnosis*, Prasana Sahoo* *et al.*, **2014, MRS Fall Meeting & Exhibit, Boston, USA.**
13. *Surface Functionalization of PDMS microdevices for in-situ cell adhesion studies*, Prasana Sahoo* *et al.*, **2014, MRS Spring Meeting & Exhibit, San Francisco, USA.**
14. *Selective surface functionalization of micro-fabricated landscapes for in-situ biophysical studies*, Prasana Sahoo* *et al.*, **2014, XXXVII Encontro Nacional de Fisica da Materia Condensada, Bahia, Brazil.**
15. *Chemically anchored micro-fabricated landscapes for single-cell based biophysical studies*, Prasana Sahoo *et al.*, **2013, MRS Fall Meeting & Exhibit, Boston, USA.**
16. *Probing the Dynamics of Cellular Damage in Bacterial Cells Induced by GaN Nanoparticles using Confocal Laser Raman spectroscopy*, Prasana Sahoo *et al.*, **2012, International Conference on Nanoscience & Technology (ICONSAT), Hyderabad, India. Awards: First in best paper presentation**