



**Dr. SUNIPA ROY**

*Former: (CSIR Senior Research Fellow – Direct)*

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**Vidwan ID: 186242**

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Present residence: 73 & 74, Dum Dum Park, Flat 4, Kolkata – 700055

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Department: Associate Professor, Electronics & Communication Engineering, Guru Nanak Institute of Technology

#### **PROFFESIONAL SUMMARY:**

A result oriented faculty in Electronics and Communication Engineering driven to create teaching strategies that fully engage students in the learning process to get molded as life-long scholars and talented professionals. Willing to be involved in a tenure through teaching and administrative services to accomplish an environment of academic success and overall growth for students.

#### **SKILL HIGHLIGHTS:**

- Lectures
- Student mentoring
- Conference participation
- Curriculum development
- Research
- Learning Strategies
- Audits
- Hosting of Conferences (IEEE level)
- Technical exhibitions
- Formulating accreditations
- Authoring and editing books
- Review of articles

#### **Highest Qualification:**

- **PhD (Engineering):** Electronics and Telecommunication Engineering **2014**  
Jadavpur University, Kolkata

#### **EXPERIENCE:**

##### **Employment tell-tale:**

<b>Employer's Name &amp; Address</b>	<b>Designation</b>	<b>Period</b>
CSIR (Direct), Govt. of India; Camp: Jadavpur University, Kolkata	Senior Research Fellow	04.04.12 to 24.01.14
IC Design & Fabrication Centre, ETCE dept., Jadavpur University, India	Senior Research Fellow	01.11.10 to 03.04.12
DST, Govt. of India; Campus: Jadavpur University	Junior Research Fellow	08.06.09 to 31.10.10

- **PROFESSIONAL EXPERIENCE:**

1. Presently working as 'Associate Professor and Head of the Department' in the Department of Electronics and Communication Engineering at Guru Nanak Institute of Technology (JIS Group), Sodepur, Kolkata – 114 since 2014.
2. Also attached with IC Design and Fabrication Centre, Jadavpur University, India for Post Doctoral Research work and as an empanelled PhD supervisor.

- **RESEARCH EXPERIENCE:**

**Area of research:** MEMS based Micro Device Fabrication, Nano-thin Film based Chemical Sensor.

**Ph.D dissertation:** Study of Nanostructure Semiconducting Oxide based Gas Sensors on Micro machined Silicon Platform.

- **AUCTORIAL EXPERIENCE:**

**Books Published:**

1. "MEMS & Nanotechnology for Gas Sensor", Authored by Sunipa Roy and Chandan Kumar Sarkar, published by **CRC Press**, Taylor & Francis Group, LLC, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, Florida 33487, U.S.A. ISBN-13:978-1498700122
2. "Nanotechnology: Synthesis to Application", Edited by Sunipa Roy, Chandan Kumar Ghosh and Chandan Kumar Sarkar, by **CRC Press**, Taylor & Francis Group, LLC, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, Florida 33487, U.S.A.,

**Book Chapters Authored:**

1. Solar Photovoltaic: From Materials to System, S Das, **S Roy**, "Nanotechnology: Synthesis to Application" – From CRC Press, USA, Taylor & Francis Group, 219-240
2. Nanogenerator: A Self-Powered Nanodevice, A Banerjee, **S Roy**, "Nanotechnology: Synthesis to Application" – From CRC Press, USA, Taylor & Francis Group, 193-218
3. VOC detection with different nanostructure, S Das, **S Roy**, "Nanotechnology: Synthesis to Application" – From CRC Press, USA, Taylor & Francis Group, 219-240.
4. Sensing using Memristive approach, governing physics and material science aspect, by A. Pal and **S.Roy** in the Book "Cutting age research on low dimensional on low dimensional Nanoelectronic devices: Physics and material science aspect" – From Apple Academic Press, Taylor & Francis Group, Article in Press.
5. Technological Development of Graphene and Graphene Nanocomposite Based Supercapacitor Electrode, by A. Pal and S.Roy in the Book "Cutting age research on low dimensional on low dimensional Nanoelectronic devices: Physics and material science aspect" – From Apple Academic Press, Taylor & Francis Group, Article in Press.

- **PROJECT SANCTIONED:**

- 1 Received DST-NIMAT grant for Entrepreneurship Awareness Camp from EDII, Govt of India in 2018, 0.2 Lacs

**Role: PI**

- 2 Received DST-FIST grant from DST, Govt of India in 2018-19, **60 Lacs**  
**Role: PI**
- 3 Received AICTE MODROB from AICTE, Govt of India in 2018-19, **18.65 Lacs**  
**Role: PI**
- 4 **Received AICTE GOC**, Govt of India in 2020-21, **12 Lacs**

#### **DOCTORAL & OTHER STUDENTS UNDER GUIDANCE:**

1. Development of MEMS based Integrated Sensor Microsystem for detecting toxic gases in industrial application. Registered at Jadavpur University, India, 2016.
2. Modeling, Simulation and Characterization of Nano-scale MOS Memory. Registered at MAKAUT, India, 2021.
3. Metal Oxide based Gas Detection Using Machine Learning Techniques, Registered at Kalyani University, India, 2021.
4. Assisted 10 M.Tech theses at IC Centre, ETCE Dept, Jadavpur University from 2009-2014.

#### **PEER REVIEWED ARCHIVAL JOURNALS :**

##### **2010**

[1] S.Roy, H.Saha, C. K. Sarkar, "High sensitivity methane sensor by chemically deposited nanocrystalline ZnO thin film", International journal on smart sensing and intelligent systems, Vol. 3, No. 4, December 2010. pp.605-620.

##### **2011**

[2] S.Roy, T. Majhi, A. Kundu, C. K. Sarkar, H. Saha, "Design, fabrication and simulation of coplanar microheater using nickel alloy for low temperature gas sensor application", **Sensor Letters (ASP)**, 9 (2011)1382–1389 (Impact factor: 1.587).

##### **2012**

[3] S.Roy, C.K. Sarkar, P. Bhattacharyya, "A highly sensitive methane sensor with nickel alloy microheater on micromachined Si substrate", **Solid-State Electronics (Elsevier)**, 76 (2012) 84–90 (Impact factor: 1.482).

[4] S.Roy, C.K. Sarkar, P. Bhattacharyya, "Ultrasensitive Pd–Ag/ZnO/Nickel Alloy-Based Metal–Insulator–Metal Methane Sensor on Micromachined Silicon Substrate", **IEEE Sensors Journal (IEEE)**, 12 (2012) 2526-2527. (Impact factor: 1.475).

[5] S. Roy, C. K. Sarkar, P. Bhattacharyya. "Low Temperature Fabrication of a Highly Sensitive Methane Sensor with Embedded Co-Planar Nickel Alloy Microheater on MEMS Platform", **Sensor Letters (ASP)**, 10 (2012) 760-769. (Impact factor: 1.587).

##### **2013**

[6] N. Banerjee, S. Roy, C.K. Sarkar, P. Bhattacharyya, "High Dynamic Range Methanol Sensor based on Aligned ZnO Nanorods", **IEEE Sensors Journal (IEEE)**, 13 (2013)1669-1676. (Impact factor: 1.475).

[7] S. Roy, N. Banerjee, C.K. Sarkar, P. Bhattacharyya "Development of Ethanol Sensor based on CBD grown ZnO nanorods", **Solid-State Electronics (Elsevier)** **87 (2013) 43-50**. (Impact factor: 1.482).

[8] N. Banerjee, B. Bhowmik, S. Roy, C. K. Sarkar, P. Bhattacharyya, "Anomalous Recovery Characteristics of Pd Modified ZnO Nanorod Based Acetone Sensor", **Journal of Nanoscience & Nanotechnology (ASP)**, 13 (2013) 6826-683. (Impact factor: 1.56).

##### **2014**

[9] N. Banerjee, S. Roy, C.K. Sarkar and P. Bhattacharyya, "Effect of Humidity on Ethanol Sensing Performance of Aligned ZnONanorod based Resistive", **International Journal of surface science and materials(ASP)**, (2014), Accepted, Article in Press. (Impact factor: 0.509).

[10] N. Banerjee, S. Roy, C.K. Sarkar and P. Bhattacharyya, 'Butanone Sensing Characteristics, Mechanism and Equivalent Circuit Model of Pd Decorated ZnONanorod based Resistive Sensors' **Sensor Letters (ASP)**, 12 (2014) 89-96. (Impact factor: 1.587).

#### **2016**

[11] S. Das, C.K. Sarkar, S. Roy," Investigation of Nanostructured Pd-Ag/n-ZnO Thin Film based Schottky Junction for Methane Sensing" - **International Nano Letters (Springer). Vol. 6, No. 3 (2016), 199-210.**

[12] Swapan Das, Sunipa Roy, C. K. Sarkar, An Auto Calibrated Digital Interfacing Circuit Design to Monitor the Effect of Ambient Temperature Variation for Gas Sensor Applications, **Advances in Industrial Engineering and Management (ASP)**, Vol. 5, No. 1 (2016), 46-50.

[13] Kakali Das, Sunipa Roy, Simulation and Parametrical Analysis of Highly Sensitive MEMS Based Piezoresistive Pressure Sensor, **Advances in Industrial Engineering and Management (ASP)**, Vol. 5, No. 1 (2016), 18-23.

[14] Silpi Sarkar, AritraDasgupta, Sunipa Roy, An Intelligent Neural Network Based Gas Detection System using Metal Oxide Gas Sensor - **Advances in Industrial Engineering and Management (ASP)**, Vol.5, No. 1 (2016), 24-27.

#### **2017**

[15] S. Das, C.K. Sarkar, S. Roy, "Development of microcontroller based integrated gas sensor system for detecting combustible gases", **IET Circuit Device and Systems (IET)**. Volume 12, Issue 4, 453-459, 2018 (Impact factor: 1.216).

#### **2018**

[16] S. Das, C.K. Sarkar, S. Roy, "Facile synthesis of multi-layer graphene by electrochemical exfoliation using organic solvent", **Nanotechnology Reviews (DE GRUYTER)** Volume 7, 6 Issues, pp. 497-508, 2018. (Impact factor: 1.945).

#### **2020**

[17] P. Chowdhury, S.Roy et.al., "Facile Synthesis of ZnONanofoam on ZnO Nanowire for Hydrogen Gas Detection", **Nanoscience and Nanotechnology Asia (Bentham Science)**, , IF 0.78, Volume 10, 1 Issues, 2020.

[18] S. Bhattacharjee, S. Roy, " ANALYSIS OF THERMAL NOISE WITH DEVICE SCALING FOR INASXSB1-X UTB MOSFETS IN SUB 100 NM REGIME", **Journal of critical reviews** , vol 7, Issue 19, 2020.

[19] A. Banerjee, S.Roy," An Analytical study of the current- voltage (I-V) characteristics and transconductance of a Gold nanoparticle (nc-Au) embedded Floating gate MOS memory", **Solid State Technology (SCOPUS)**, Volume: 63 Issue: 5 , 2020.

[20] Nabaneeta Banerjee, Paromita Chowdhury, Sunipa Roy, Swapan Das, and Utpal Biswas," Highly Sensitive Formaldehyde Based on Hierarchical ZnO Nanostructure to Defeat Sick Building Syndrome." **Sensor Lett.** 18, 587–593 (2020).

#### **2021**

- [20] N. Banerjee, P.Chowdhury, S.Roy, S. Das, U.Biswas ,”Hierarchical ZnO Nanostructure based Highly Sensitive Formaldehyde Sensor to Defeat Sick Building Syndrome: **Sensor and Transducer Journal (SCOPUS)** , Vol 250, Issue 3, March 2021,pp. 18-25.
- [21] S.Das, S.Roy, T. Bhattacharya. C.K. Sarkar ,”Efficient Room Temperature Hydrogen Gas Sensor Using ZnO Nanoparticles-Reduced Graphene Oxide Nanohybrid”, **IEEE Sensor Journal, (IF 3.7)** Volume: 21, Issue 2, 2021.
- [22] S.Das, S.Roy, T. Bhattacharya. C.K. Sarkar ,” Performance Improvement of n-ZnO/p-rGO Heterojunction Based Room Temperature Hydrogen Gas Sensor”, **IEEE Sensors Letters, (IF 3.7)** April, 2021 [10.1109/LSENS.2021.3072424](https://doi.org/10.1109/LSENS.2021.3072424).

#### CONFERENCE PROCEEDINGS :

- [1] Sunipa Roy, Tanusree Majhi, B.Mondal, P. Bhattacharyya, C.K.Sarkar and H.Saha,” Electrothermal design of a MEMS based microheater for gas sensor using dilver P1”, Proceedings of the 3rd National ISSS (Institute of Smart Structures and Systems) Conference, 14th October - 01st October 2009, CGCRI, Kolkata.
- [2] Sunipa Roy, TanusreeMajhi, Susmita Sinha, C. K. Sarkar and H.Saha,” Design, simulation and fabrication of microheater using a nickel alloy for low temperature MEMS based gas sensor application”, Proceedings of the 4th National ISSS (Institute of Smart Structures and Systems) Conference, 29th September - 01st October 2010, VNIT, Nagpur.
- [3] SunipaRoy, TanusreeMajhi, Susmita Sinha, C. K. Sarkar and H.Saha,” Electrothermal analysis and fabrication of low cost microheater using a nickel alloy for low temperature MEMS based gas sensor application”, Proceedings of the International Conference on. Emerging Trends in ... Electronics, Control & Robotics” (IECR 2010), 27-29th December ‘2010, NIT-ROURKELA. Published in IEEE Xplore.
- [4] Sunipa Roy, SasankaMajhi, Tapu Mistry, C. K. Sarkar, H. Saha,” High sensitivity Methane Sensor by Chemical Deposition of NanocrystallineZnO thin film”, Proceedings of the International Conference on fundamental & applications of nano science & technology(ICFANT) 09-11th December ‘2010, J.U.-Mat.Sc. Deptt.Kolkata.
- [5] Sunipa Roy, TanusreeMajhi, C. K. Sarkar and H.Saha,” Design, fabrication and electrothermal analysis of a Microheater using a nickel alloy for gas sensor applications “,International Conference on Computer, Communication and Devices (ICCCD), at Indian Institute of Technology(ICCCD), Kharagpur, 10-12th December ‘2010.
- [6] Susmita Sinha, Sunipa Roy, C. K. Sarkar,” Design& Electro-Thermal Analysis of Microheater for Low Temperature MEMS based Gas Sensor”, Proceedings of the International Conference on Devices MEMS Intelligent Systems and Communication SMU Sikkim, 12-14th April,2011. Published by Internatinal Journal of Computer Application.
- [7] Sunipa Roy, Susmita Sinha, C. K. Sarkar,” Thermoelectromechanical Analysis and Fabrication of a Microheater using a Novel Nickel Alloy for Low Temperature MEMS based Gas Sensor Platform”, Proceedings of the International Conference on Devices MEMS Intelligent Systems and Communication, SMU Sikkim, 12-14th April,2011.
- [8] Sunipa Roy, Tapu Mistry, C. K. Sarkar,” Effect of catalytic contact on methane sensitivity using chemically deposited Zinc Oxide thin film”, Proceedings of the International Conference on Devices MEMS Intelligent Systems and Communication SMU Sikkim, 12-14th April,2011. Published by Internatinal Journal of Computer Application.

- [9] Sunipa Roy, P.Bhattacharyya, C. K. Sarkar, "ZnO nanoflake based Metal Insulator-Metal Methane Sensor for underground Coalmine Application" Proc. International Conference on Communications, Devices and Intelligent Systems (IEEE) (CODIS 2012), 28th - 29th December 2012, Jadavpur University, Kolkata. Published in IEEE Xplore.
- [10] S.S.Mondal, Sunipa Roy, C. K. Sarkar, "Design and Electrothermal analysis of MEMS based Microheater Array for Gas Sensor using INVAR alloy" Proc. International Conference on Communications, Devices and Intelligent Systems (IEEE) (CODIS 2012), 28th - 29th December 2012, Jadavpur University, Kolkata. Published in IEEE Xplore.
- [11] Avisekh Ghosh, Sunipa Roy, C. K. Sarkar, "Design and Simulation of Piezoresistive pressure sensor with enhanced sensitivity", Proc. International Conference on Energy efficient Technologies for Sustainability (ICEETS13), St.Xavier's Catholic College of Engineering, Nagercoil, Tamil Nadu. Published in IEEE Xplore.
- [12] N. Banerjee, S. Roy, C. K. Sarkar, P.Bhattacharyya, "Pd Modified ZnO Nanorod based High Dynamic Range Hydrogen Sensor", Proc. IEEE International Conference on Nanotechnology, 20-22th August '2013 China.
- [13] S. Roy, C. K. Sarkar P.Bhattacharyya, "Hydrogen Sensing Performance of ZnO Nanoflakes Deposited on MEMS Platform" Proc. 7th International Conference on Sensing Technology, 3-5th December '2013 NZ.
- [14] S. Roy, N. Banerjee, P.Bhattacharyya, C. K. Sarkar "Pd Modified ZnO Nanorod based High Dynamic Range Hydrogen Sensor", Proc. National Conference on Nanotechnology, 14th January '2014 China.
- [15] S. Roy, S.Karmakar, C. K. Sarkar "Development of Microheater Array for sensor application", Proc. National Seminar on thin film and MEMS, Instrumentation Science department, Jadavpur University, 27-28 March 2014,
- [16] S. Roy, S.Karmakar, C. K. Sarkar "A Low Temperature model for Convex Corner Compensation structure", Proc. National Seminar on thin film and MEMS, Instrumentation Science department, Jadavpur University, 27-28 March 2014.
- [17] S. Roy, N. Banerjee, C. K. Sarkar, Effect of Relative Humidity on Pd Modified ZnO Nanorod based Methanol Sensor, Proc. of International conference (ICAMET) 2014, December 17-19, 2014, IEST Shibpur.
- [18] S. Roy, S.Karmakar, C. K. Sarkar, "Anchoring of Pd Nanoparticle on ZnO Thin Film with Optical and Structural Characteristic study", Proc. of International conference (ICAMET) 2014, December 17-19, 2014, IEST Shibpur.
- [19] S. Karmakar, S. Das, C.K. Sarkar, S. Roy, "Development of MEMS based Microheater Array for Multi-Gas Sensor", Proc. of International conference (ICAMET) 2014, December 17-19, 2014, IEST Shibpur.
- [20] K. Das, S.Roy, Simulation and Analytical Study of MEMS based Piezoresistive Pressure Sensor, Proc. of International conference MicroCom 2016. NIT Durgapur, India.
- [21] S. Sarkar, A Das Gupta, S. Roy, "Quantitative Evaluation of Combustible Gases with Probabilistic Neural Network using Metal Oxide Gas Sensors" Proc. of International Conference Device 2016, 29-30 March '2016, KGEC, India.
- [22] S. Das, S. Roy, C. K. Sarkar "Designing of an auto-calibrated interfacing circuit for low temperature gas sensing applications" Proc. of International Conference Device 2016, 29-30 March '2016, KGEC, India.

- [23]K. Das, S.Roy, "Performance Study of Highly Sensitive MEMS based Piezoresistive Pressure Sensor" Proc. of International Conference Device 2016, 29-30 March '2016, KGEC, India.
- [24]S. Roy, S. Das, C. K. Sarkar " Hydrogen sensing performance of ZnO-Si heterojunction with catalytic metal contact", IEEE Sponsored inter. Conf. Micro 2016, July 9-10, 2016.
- [25]S. Roy et.al., "Non conventional energy sources using piezoelectric crystal for wearable electronics" Proc. of IEEE Sponsored International conference IEMENTECH, 28-29 April, Science City, Kolkata.
- [26]S. Roy et.al. "TEM analysis of microheater using SiO<sub>2</sub>/Si<sub>3</sub>N<sub>4</sub> composite membrane for long term gas sensor applications. Proc. of IEEE Sponsored International conference IEMENTECH, 28-29 April, Science City, Kolkata. Published in IEEE *XPlore Digital Library*.
- [27]S. Roy et.al. "Facile Synthesis of Graphene Nanosheet for Gas Sensor Application, Fourth International Conference on Polymer Processing and Characterisation (ICPPC 2016, 9-11 December, 2016, Kottayam , Kerala.
- [28]S. Roy et.al. **Non-conventional energy sources using piezoelectric crystal for wearable electronics**, Proc. of IEEE Sponsored International conference IEMENTECH, 28-29 April, Science City, Kolkata. Published in IEEE *XPlore Digital Library*.
- [29]S. Roy et.al. Advanced Prototyping of Electro-Medical Syndrome using DAQ (Pg 1-4). Proc. of IEEE Sponsored International Conference on Emerging trends on Electronic Devices and Computational Techniques', (EDCT 2018), 8-9<sup>th</sup> March '2018, Guru Nanak Institute of Technology, Kolkata. **ISBN No: 978-1-5386-6**. Published in IEEE *XPlore Digital Library*.
- [30]S. Roy et.al. **A new Gated-Ground-Sleep Architecture for Ultra Low Leakage of SRAM Cell (Pg. 16)** Proc. of IEEE Sponsored International Conference on Emerging trends on Electronic Devices and Computational Techniques', (EDCT 2018), 8-9<sup>th</sup> March '2018, Guru Nanak Institute of Technology, Kolkata. **ISBN No: 978-1-5386-6**. Published in IEEE *XPlore Digital Library*.
- [31]S. Roy et.al. **Alcohol sensing performance of ZnO nanoflower based Resistive Sensor**, Proc. of IEEE Sponsored International Conference on Emerging trends on Electronic Devices and Computational Techniques', (EDCT 2018), 8-9<sup>th</sup> March '2018, Guru Nanak Institute of Technology, Kolkata. **ISBN No: 978-1-5386-6**. Published in IEEE *XPlore Digital Library*.
- [32] S. Roy et.al. **Green Power Generation for Rural Development**, Proc. of FOSET 2019 Conference, 31<sup>st</sup> March 2019.
- [33]S. Roy et.al., Study of Graphene Field Effect Transistor (GFET) for Chemical Sensing Application. Proc. of IOCER 2020 Conference, 8-9<sup>th</sup> October 2020, JISCE Kalyani.
- [34] Sunipa Roy, Hrithika Saha , Optimization of low frequency noise for dielectric modulated TFET for bio sensing applications. Proc. of IOCER 2020 Conference, 8-9<sup>th</sup> October 2020, JISCE Kalyani.
- [35] Sunipa Roy, "Development of Highly Sensitive Room Temperature Gas Sensor using rGO-ZnO Nanohybrid" Nano Virtual 2020" London, United Kingdom, November 25- 26, 2020.
- [36] Sunipa Roy, Hrithika Saha "Performance analysis of heterogeneous dielectric TFET" ICANSASA 2020, December, JISCE Kalyani.
- [37]S. Roy, S. Das, C. K. Sarkar,, " Development of Highly Sensitive Room Temperature Gas Sensor using rGO-ZnO Nanohybrid, United research forum, UK, 25-27<sup>th</sup> November 2020.

- [38] S. Roy, S. Das, C. K. Sarkar, "Fabrication and Characterization of Nanoporous Reduced Graphene Oxide Membrane for Gas Separation", ICMMA, MGU, Kottayam, Kerala. 11-14 February 2021
- [39] S. Roy, S. Das, C. K. Sarkar, "Fabrication and Characterization of Graphene ZnO Nanohybrid Sensor", ICN 2021, MGU, Kottayam, Kerala. 11-14 February 2021
- [40] P. Chowdhury, S. Roy, "Development of SRAM Cell by Domino logic", FEMAS 2021, GNIT, Kolkata, 23-24 December 2021.
- [41] S. Bhattacharjee, G. Mukhopadhyaya, S. Bhattacharya, S. Roy, PERFORMANCE ANALYSIS OF HETEROGENEOUS DIELECTRIC MODULATED TFETS FOR BIO SENSING APPLICATIONS, FEMAS 2021, GNIT, Kolkata, 23-24 December 2021.
- [42] P. Banerjee, S. Roy, QUARTZ CRYSTAL MICROBALANCE SENSORS IN VARIOUS ENGINEERING FIELDS: A REVIEW, FEMAS 2021, GNIT, Kolkata, 23-24 December 2021.
- [43][43] Ayon Maji, Atanu kumar Bagh Ankan Das, Anurima Majumdar, Antara Ghosal, Palasri Dhar, Sunipa Roy, PADMINI- An intelligent women safety device, International research journal of science engineering and technology, October 2020.
- [44] Hridika Saha, Palasri Dhar, Antara Ghosal, Anurima Majumdar, Sunipa Roy, Ballistic and Scattering limited mobility at GaN quantum well, International Journal of Creative research thoughts, October 2020.

#### **AFFILIATIONS:**

- Senior Member, IEEE, USA.
- Member, The Institution of Engineers (India).
- Member, IEEE Green Community, USA
- Member, IEEE Entrepreneurship programme, USA
- Special Member, I2OR, India

#### **PROFESSIONAL ENDEAVOURS:**

##### **Convening Operations:**

- Organized IEEE sponsored 1<sup>st</sup> International Conference Emerging Trends in Electronic Devices and Computational Techniques (EDCT 2018) at Guru Nanak Institute of Technology in March 2018. (Role: Convener).
- Organized International conference FEMAS 1.0 and 2.0 in the year 2019 and 2021 at GNIT.

##### **Reviewing Functions:**

- **Reviewer, IEEE Transaction on Nanotechnology.**
- Reviewer, NanoExpress, Springer.
- Reviewer, IEEE sponsored International conference on Microelectronics and Communication, organized by NIT, Durgapur.
- Reviewer, IEEE sponsored International conference IEMENTECH 2017, 18, 19, 20 and 2021, organized by IEM Kolkata.

##### **Invited session accolades:**



- Invited talk on One week workshop on 'DSP and VLSI Design' (11-15<sup>th</sup> Jan' 2016) organized by Dept. of Electronics and Tele Communication Engg, GNIT, Sodepur, Kolkata.
- Invited talk on "One week workshop on 'Embedded system Design' (24-28<sup>th</sup> June' 2015) organized by Dept. of Computer Science Engg, GNIT, Sodepur, Kolkata.
- Invited lecture on "Facile Synthesis of Graphene Nanosheet for Gas Sensor Application", Fourth International Conference on Polymer Processing and Characterisation (ICPPC 2016), Mahatma Gandhi University, P.D Hills P.O, Kottayam, Kerala, India - Delivered by Sunipa Roy.
- Chaired session 'Robotics and AI', IEEE sponsored International Conference 'IEMENTECH 2018' held at IEM, Kolkata on 05.05.2018.
- Chaired session, IEEE sponsored International Conference 'Device 2016' held at KGEC, Kalyani on 07.06.2016.
- Invited talk on "International Conference ICMMAP, MGU, Kottayam, Kerala.11-14 February 2021
- Invited talk on "International Conference ICN 2021, MGU, Kottayam, Kerala.9-11 April 2021
- Invited talk on "International Conference organized by United research forum: London, UK. 25-27th November 2020.
- Keynote speaker at AICTE sponsored STTP program, Sri Manakula Vinayagar Engineering College (SMVEC), Puducherry- 605107, 2021.

**PATENTS FILED:**

1. **ITILE OF THE INVENTION:** Process for the Synthesis of Graphene  
Patent application filed on 17/11/2016  
Patent application number: 201631039295  
Present status: Published/ Applied for examination
2. **TITLE OF THE INVENTION:** Lateral Microheater having low cost metal alloy for Gas Sensor Application  
Patent application filed on 05/06/2017  
Patent application number: 201731021388  
Present status: Published

All the data are true in my knowledge and belief.

Truly Yours,  
Sunipa Roy