Curriculum Vitae

Dr. Prasanta Kumar Guha, Member IEEE
Total Citation – 2703, h index- 29, i10 index- 51 (Google Scholar up to 23.03.2023)

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Employment:

2022 December- Present	**Professor**, IIT Kharagpur
2017 May- 2022 December	Associate Professor, IIT Kharagpur
2010 Sep – 2017 May	Assistant Professor, IIT Kharagpur
2008 - 2010	Research Fellow, University of Warwick
2007 - 2008	Graduate Design Engineer, Imagination Technologies, UK

Academic Qualifications:

2004 - 2008 ***PhD*. - University of Cambridge**
2002 – 2003 ***MPhil*. "Microelectronics Engineering & Semiconductor Physics" University of Cambridge**

Areas of Interests:

Gas/ Chemical Sensors, Energy Devices, Nano-material synthesis, sensor interface electronics, Machine Learning, MEMS, CMOS-MEMS-Sensor integration

Academic Achievements:

2021 **ASSOCIATE EDITOR – IEEE SENSORS JOURNAL**
2020 Guided INAE Best Thesis Award
2019 Top Cited Author Award (2016-2018) from IOP publishing for our paper "Liquid exfoliated pristine WS_2 nanosheets for ultrasensitive and highly stable chemiresistive humidity sensors"
2019 Our paper titled "*2-Propanol detection with NiO decorated SnO_2 microspheres for indoor air quality monitoring applications*" was received Best Poster Award in IWPSD, 2019, Kolkata, India
2012 Our paper titled "*CMOS Interfacing for Integrated Gas sensors: A review*" was one of the Top 25 Downloaded Papers for 6 months in IEEE Sensors Journal
2011 Our paper titled "*Post-CMOS wafer level growth of carbon nanotubes for low cost microsensors-a proof of concept*" has received media coverage in Nanotechweb.org, http://nanotechweb.org/cws/article/lab/44786
2008 Best Poster Award, Cambridge CNT Symposium
2004 Scholarship from Cambridge Commonwealth Trust for pursuing PhD in University of Cambridge
2002 Awarded DFID (*Department of International Development*) Scholarship by The Cambridge Commonwealth Trust for pursuing MPhil in University of Cambridge

Projects:

Several projects as PI and Co-PI (over 15 Crore INR)

PhD guidance: 8 students (completed), 7 students (on going)

Invited Talk:

1) Invited Talk: Contemporary Issues of Nanoscience and Nanotechnology, *UGC-HRDC, Jadavpur University*, 2023
2) Invited Talk: Nanosensing for Healthcare, *Tata Consultancy Services*, 2021
3) Plenary Talk: Selective Chemo-resistive Sensor for toxic gas/VOC detection, Conference: New Era Sensing Technologies: Healthcare, Environmental and Rural applications, *IIT Dharwad*, 2021
4) CMOS MEMS Nano-material Integration for Gas Sensor Application, *NIT Jamshedpur*, 2019
5) Micro-resistive gas sensor & its CMOS integration, *NIT Silchar*, 2018

Other information:

1) Podcast was recorded by TCS on the use of metal oxide-based chemiresistive gas sensors to screen diabetes.
2) Invited as Session chair in IWPSD 2019 Conference, Kolkata
3) Invited as Session co-chair in IEEE Sensors 2018 Conference, Delhi
4) Invited as Session co-chair in IEEE Sensors 2017 Conference, Glasgow

Publications: (Patent – 6, Book Chapter 5, Journal Publications – 63)

Patent:

- P. K. Guha, R. Mukherjee, P. Mandal, 'An advanced thermal accelerometer', 350726, (applied 20/03/2015), (certificate issued 03/11/2020)
- R. Mukherjee, P. K. Guha, P. Mandal, 'Thermal accelerometer with active temperature sensor', 201631001531, (applied 15/01/2016).
- R. Mukherjee, P. K. Guha, P. Mandal, 'Thermal accelerometer with improved sensitivity', 201631009720, (applied 21/03/2016).
- P. K. Guha, R. Jha, D. Burman, R. Ghosh, S. Santra, 'Humidity sensor based on nano-composite sensing layers and method of fabrication thereof', 404523, (applied 27/03/2017), (certificate issued 25/08/2022)
- P. K. Guha, S. Dey, S. Santra, S. K. Ray, 'Doped transition metal oxide resistive sensor device for toluene detection', 201831046998, (applied 12/12/2018)
- Nikita Dey, Himadri Raha, Prasanta Kumar Guha, Samit Kumar Ray, 'Transition metal chalcogenide-based cathode material for batteries and supercapacitors', 202231074017, (applied 21/12/2022)

Book Chapters:

- **Advanced Nanomaterials for Inexpensive Gas Microsensors: Synthesis, Integration and Applications** - Julian W Gardner and Prasanta Kumar Guha (Elsevier – 2019 *Chapter* 7 (CMOS-based resistive and FET devices for smart gas sensors) *Print ISBN: 978-0-12-814827-3*)
- **Semiconductor gas sensors (Second Edition)**– P K Guha, S Santra and J W Gardner (Woodhead Publishing Limited, UK, 2019– Chapter 14 (Integrated CMOS based sensors for gas and odour detection) - Print ISBN: 978-0081025598)
- **Measurement, Instrumentation, and Sensors Handbook, Second Edition: Spatial, Mechanical, Thermal, and Radiation Measurement**– P K Guha, S Santra and J W Gardner (CRC Press –2014 *Chapter* 9 (ÇMOS integrated gas sensors) - *Print ISBN: 978-1-4398-4888-3*)
- **Semiconductor gas sensors**– P K Guha, S Santra and J W Gardner (Woodhead Publishing Limited, UK, 2013– *Chapter* 15 (Integrated CMOS based sensors for gas and odour detection) - *Print ISBN: 978-0-85709-236-6*)
- **Vistas in Nanofabrication**– S Santra, P K Guha and F Udrea (Pan Stanford publication, Singapore, 2012 – *Chapter* 10 (Nanomaterial integration on CMOS platform, page 193-206), *Print ISBN: 978-981-4364-56-0*)

Journals:

1) Ultrahigh Coulombic Efficiency in Alkali Metal Incorporated Biomass Derived Carbon Electrode, Himadri Raha, Debabrata Pradhan and Prasanta Kumar Guha*, ***Journal of Electroanalytical Chemistry*** vol 931 (2023) 117193
2) Ultra-selective tin oxide-based chemiresistive gas sensor employing signal transform and machine learning techniques, Snehanjan Acharyya, Sudip Nag and Prasanta Kumar Guha*, ***Analytica Chimica Acta*** vol 1217 (2022) 339996
3) Structurally modified V2O5 based extrinsic pseudocapacitor, Himadri Raha, Debabrata Pradhan and Prasanta Kumar Guha*, ***IOP Nanotechnology*** vol 33 (25) (2022) 255402
4) Adsorption-Mediated n-Type ZnO Surface Reconstruction for Optically Enhanced Volatile Organic Compound Sensing, Swati Nag, Sayan Dey, Debmallya Das and Prasanta Kumar Guha, ***ACS Appl. Electron. Mater.*** vol 4 (8) (2022) 3825–3833
5) Nanoinspired Biocompatible Chemosensors: Progress toward Efficient Prognosis of Arsenic Poisoning, Sayan Dey, Preetam Guha Ray, Trina Roy, Sumita Santra, Santanu Dhara, Samit Kr Ray and Prasanta Kumar Guha, ***ACS Appl. Bio Mater.*** 2022, vol 5 (8) (2022) 3850–3858
6) Selective discrimination of VOCs applying gas sensing kinetic analysis over a metal oxide-based chemiresistive gas Sensor, S Acharyya, S Nag, S Kimbahune, A Ghose, A Pal and P K Guha*, ***ACS Sensors*** vol 6 (6) (2021) 2218-2224
7) Substitutional doping of MoS2 for superior gas sensing applications: A proof of concept, Debasree Burman, Himadri Raha, Bibhas Manna, Panchanan Pramanik and Prasanta Kumar Guha*, ***ACS Sensors*** vol 6 (9) (2021) 3398–3408

8) Temporal dynamics of photonic stop-band in volatile solvent infiltrated opals, Bhargavi Veeraghattam, Prasanta Kumar Guha and B.N. Shivakiran Bhaktha, ***Optical Materials*** vol 117 (2021) 111146
9) First principles study of noble metal (single atom and cluster) decorated reduced graphene oxide for efficient formaldehyde adsorption, B Manna, I Chakrabarti and P K Guha*, ***IEEE Sensors Journal*** vol 21 (3) (2021) 2544-2551
10) RGO/Ni_2O_3 heterojunction based re-usable, flexible device for Cr(VI) ion detection in water, Anurag Kar, Sayan Dey, Debasree Burman, Sumita Santra and Prasanta Kumar Guha*, ***IEEE Transaction Electron Devices*** vol 68 (2) (2021) 780-785
11) Selective detection of VOCs with WO_3 nanoplates based single chemiresistive sensor device using machine learning algorithms, Snehanjan Acharyya, Sudip Nag and Prasanta Kumar Guha*, ***IEEE Sensors Journal*** vol 21(5) (2020) 5771 - 5778
12) Graphene Oxide Wrapped hollow SnO_2 sphere for room temperature Formaldehyde Sensing: An Insight through Computational Analysis & Experimental Study, Bibhas Manna, Snehanjan Acharyya, Indrajit Chakraborty and Prasanta Kumar Guha*, ***IEEE Transaction Electron Devices*** vol 67 (9) (2020) 3767-3774
13) Synthesis of CuO Nanoflowers and their application towards inflammable gas sensing, Sharmi Ganguly*, Ravindra Jha, Prasanta K Guha and Chacko Jacob, ***Journal of Electronic Materials*** vol 49 (2020) 5070-5076
14) Single resistive sensor for selective detection of multiple VOCs employing SnO_2 hollowspheres and machine learning algorithm: A proof of concept, Snehanjan Acharyya, Biswabandhu Jana, Sudip Nag, Goutam Saha and Prasanta Kumar Guha*, ***Sensors and Actuators B: Chemical*** vol 321 (2020) 128484
15) Voltage controlled NiO/ZnO p-n heterojunction diode: A new approach towards selective VOC sensing, Sayan Dey, Swati Nag, Sumita Santra, Samit K Ray and Prasanta K Guha, ***Microsystems & Nanoengineering*** vol 6 (2020)
16) $Fe_xNi_{(1-x)}O$/NiO heterojunction based selective VOC sensor device by using temperature tunability, Sayan Dey, Sumita Santra, Samit Kumar Ray and Prasanta Kumar Guha*, ***IEEE Sensors Journal*** vol 20 (14) (2020) 7503-7508
17) Quantum capacitance tuned flexible supercapacitor by UV-Ozone treated defect engineered RGO forest, H Raha, B Manna, D Pradhan and P K Guha*, ***IOP Nanotechnology*** vol 30 (43) (2019) 435404(11p)
18) Air Pollution Monitoring Using Near Room Temperature Resistive Gas Sensors: A Review, R Ghosh, J W Gardner and P K Guha*, ***IEEE Transaction Electron Devices*** vol 66 (8) (2019) 3254-3264
19) Liquid exfoliated NiO nanosheets for trace level detection of acetone vapours, S Dey, S Santra, P K Guha and S K Ray, ***IEEE Transaction Electron Devices*** vol 66 (8) (2019) 3568-3572
20) ZnO/γ-Fe_2O_3 heterostructure towards high performance Acetone sensing, Avik Sett, Sayan Dey, Prasanta Kumar Guha and Tarun Kanti Bhattacharyya, ***IEEE Sensors Journal*** vol 19 (19) (2019) 8576-8582
21) ZnO/MoS_2 based enhanced humidity sensor prototype with Android App interface for mobile platform, D Burman, D S Choudhary and P K Guha*, ***IEEE Sensors Journal*** vol 19 (11) (2019) 3993-3999
22) Platinum Nanoparticles Decorated Graphene Oxide Based Resistive Device for Enhanced Formaldehyde Sensing: First-Principle Study and its Experimental Correlation, B Manna, I Chakravarty and P K Guha*, ***IEEE Transactions on Electron Devices*** vol 66 (4) (2019) 1942-1949
23) Enhanced Gas Sensing Properties of Liquid-Processed Semiconducting Tungsten Chalcogenide (WXi, X= O and S) based Hybrid Nanomaterials, R K Jha, M Wan, C Jacob and P K Guha*, ***IEEE Sensors Journal*** 18 (9) (2018) 3494 - 3501
24) Flexible Large MoS2 Film based ammonia sensor, D Burman, A Sharma and P K Guha*, ***IEEE Sensors Letters*** vol 2 (2) (2018) 1-4
25) Selective Reduction of Oxygen Functional Groups to Improve the Response Characteristics of Graphene Oxide Based Formaldehyde Sensor Device: A First Principle Study, B Manna, H Raha, I Chakravarty and P K Guha*, ***IEEE Transactions on Electron Devices*** vol 65 (11) (2018) 5045-5052
26) Coral like $Cu_xNi_{(1-x)}O$ based resistive sensor for humidity and VOC detection, S Dey, S Santra, SK Ray and PK Guha*, ***IEEE Sensors Journal*** vol 18 (15) (2018) 6078-6084
27) Humidity sensing properties of co-exfoliated heterogeneous WS_2/WSe_2 nanohybrids, R Jha and P K Guha*, ***IEEE Transactions on Nanotechnology*** vol 17 (3) (2018) 582-589
28) Pt decorated MoS_2 nanoflakes for ultrasensitive resistive humidity sensor, D Burman, S Santra, P Pramanik and P K Guha*, ***IOP Nanotechnology*** vol 29 (11) (2018) 115504
29) Near Room Temperature Sensing of Nitric Oxide Using SnO_2/Ni-decorated Natural Cellulosic Graphene Nanohybrid Film, S Gupta Chatterjee, S Dey, D Samanta, S Santra, S Chatterjee, P K Guha and A K Chakraborty, ***Journal of Materials Science: Materials in Electronics*** vol 29 (23) (2018) 20162–20171
30) Photon assisted ultra-selective formaldehyde sensing by defect induced NiO based resistive sensor, S Dey, S Santra, S Sen, D Burman, S Ray and P K Guha*, ***IEEE Sensors Journal*** vol 18 (14) (2018) 5656-5661
31) Ammonia vapour sensing properties of in situ polymerized conducting PANI-nanofiber/WS_2 nanosheet composites, R K Jha, M Wan, C Jacob and P K Guha, ***New Journal of Chemistry*** vol 42 (1) (2018) 735-745
32) Role of vacancy sites and UV-ozone treatment on few Layered MoS_2 Nanoflakes for Toxic Gas Detection, D Burman, R Ghosh, S Santra, S K Ray and P K Guha*, ***IOP Nanotechnology*** vol 28 (43) (2017) 435502

33) A Review of Micromachined Thermal Accelerometers, R Mukherjee, J Basu, P Mandal and P K Guha, ***Journal of Micromechanics and Microengineering*** vol 27 (12) (2017) 123002
34) WS_2/GO Nanohybrids for Enhanced Relative Humidity Sensing at Room Temperature, RK Jha, D Burman, S Santra and P K Guha*, ***IEEE Sensors Journal*** 17 (22) (2017) 7340 - 7347
35) An effective liquid-phase exfoliation approach to fabricate tungsten disulfide into ultrathin two-dimensional semiconducting nanosheets, R Jha and P K Guha*, ***Journal of Materials Science*** vol 52 (12) (2017) 7256-7268
36) Sensitivity improvement of a dual axis thermal accelerometer with modified cavity structure, R Mukherjee, P Mandal and P K Guha, ***Microsystem Technologies*** vol 23 (12) (2017) 5357–5363
37) Synthesis of CuxNi(1−x)O coral-like nanostructures and their application in the design of a reusable toxic heavy metal ion sensor based on an adsorption-mediated electrochemical technique, S Dey, S Santra, A Midya, P K Guha and S K Ray, ***Environmental Science: Nano*** vol 4 (2017) 191-202
38) Liquid exfoliated pristine WS2 nanosheets-for ultrasensitive and highly stable chemiresistive humidity sensors, R Jha and P K Guha*, ***IOP Nanotechnology*** vol 27 (47) (2016) 475503
39) Mn and As doping of β-$FeSi_2$ via a chemical method, S Sen, P K Guha, P Banerji and P Pramanik, ***RSC Advances*** vol 6 (72) (2016) 68238-68246
40) Green synthesis route for WS_2 nanosheets using water intercalation, R Jha, S Santra and PK Guha*, ***Materials Research Express*** vol 3 (9) (2016) 095014
41) Enhanced proton conductivity of graphene oxide/ nafion composite material in humidity sensing application, S Ghosh, R. Ghosh, P K Guha and T K Bhattacharyya, ***IEEE Transactions on Nanotechnology*** vol 15 (5) (2016) 782 - 790
42) Reduced graphene oxide based piezoelectric nanogenerator with water excitation, R Ghosh, M Pusty and P K Guha*, ***IEEE Transactions on Nanotechnology*** vol 15 (2) (2016) 268 - 273
43) Reduced graphene oxide–rose bengal hybrid film for improved ammonia detection with low humidity interference at room temperature, R Ghosh, A Midya, S Santra, S K Ray and P K Guha, ***Materials Research Express*** 3 (2) (2016) 025101
44) Highly proton conducting MoS_2/graphene oxide nano-composite based chemoresistive humidity sensor, D Burman, R Ghosh, S Santra and P K Guha*, ***RSC Advances*** 6 (2016) 57424-57433
45) Mask-less deposition of Au–SnO_2 nanocomposites on CMOS MEMS platform for ethanol detection, S Santra, A K Sinha, A De Luca, S Z Ali, F Udrea, P K Guha, S K Ray and J W Gardner, ***Nanotechnology*** vol 27 (12) (2016) 125502
46) Temperature-modulated graphene oxide resistive humidity sensor for indoor air quality monitoring, A De Luca, S Santra, R Ghosh, S Z Ali, J W Gardner, P K Guha and F Udrea, ***Nanoscale*** 8 (2016) 4565-4572
47) Humidity sensor based on high proton conductivity of graphene oxide, S Ghosh, R. Ghosh, P K Guha* and T K Bhattacharyya, ***IEEE Transactions on Nanotechnology*** vol 14 (5) (2015) 931-937
48) Sensitivity improvement using optimized heater design for dual axis thermal accelerometers, R Mukherjee, P K Guha and P Mandal, ***Microsystem Technologies*** vol 22 (2015) 2475-2485
49) Synthesis and characterization of β-phase iron silicide nano-particles by chemical reduction, S Sen, N Gogurla, P Banerji, P K Guha and P Pramanik, ***Materials Science and Engineering: B*** 200 (2015) 28-39
50) CMOS integration of inkjet-printed graphene for humidity sensing, S Santra, G Hu, RCT Howe, A De Luca, S Z Ali, F Udrea, J W Gardner, S K Ray, P K Guha and T Hasan, ***Scientific Reports*** 5 (17374) (2015) 1-12
51) Pt-functionalized reduced graphene oxide for excellent hydrogen sensing at room temperature, R Ghosh, S Santra, S K Ray and P K Guha*, ***Applied Physics Letters*** vol 107, (2015) 153102
52) Hierarchical nanostructured WO_3–SnO_2 for selective sensing of volatile organic compounds, A K Nayak, R Ghosh, S Santra, P K Guha and D Pradhan, ***Nanoscale*** 7 (2015) 12460-12473
53) Enhanced ammonia sensing at room temperature with reduced graphene oxide/tin oxide hybrid film, R Ghosh, A K Nayak, S Santra, D Pradhan and P K Guha*, ***RSC Advances*** 5 (2015) 50165-50173
54) Dip pen nanolithography-deposited zinc oxide nanorods on a CMOS MEMS platform for ethanol sensing, S Santra, A De Luca, S Bhaumik, Z Ali, F Udrea, J W Gardner, S K Ray and P K Guha, ***RSC Advances*** 5 (2015) 47609-47616
55) Highly sensitive large area multi-layered graphene based flexible ammonia sensor, R Ghosh, A Singh, S Santra, S K Ray, A Chandra and P K Guha*, ***Sensors and Actuators B*** vol 205 (2014) 67-73
56) Chemically reduced graphene oxide for ammonia detection at room temperature, R Ghosh, A Midya, S Santra, S K Ray and P K Guha*, ***ACS Appl. Mater. Interfaces*** vol 5 (15) (2013) 7599–7603
57) Post-CMOS wafer level growth of carbon nanotubes for low cost microsensors-a proof of concept, S Santra, S Z Ali, P K Guha, G Zhong, J Robertson, J A Covington, W I Milne, J W Gardner and F Udrea, ***Nanotechnology*** vol 21 no 48 (2010) 7
58) CMOS Interfacing for Integrated Gas sensors: A review, J W Gardner, P K Guha, F Udrea and J A Covington, ***IEEE Sensors Journal*** vol 10 no12 (2010) 1833-1848
59) Silicon on insulator diode temperature sensor- a detailed analysis for high temperature operation, S Santra, P K Guha, S Z Ali, I Haneef and F Udrea, ***IEEE Sensors Journal*** vol 10 (2010) 997 - 1003
60) ZnO nanowires grown on SOI CMOS substrate for ethanol sensing, S Santra, P K Guha, S Z Ali, P. Hiralal, H E Unalan, J A Covington, G A J Amaratunga, W I Milne, J W Gardner and F Udrea, ***Sensors and Actuators B*** vol 146 (2010) 559 – 565

61) SOI CMOS-based smart gas sensor system for ubiquitous sensor networks, S Maeng, P K Guha, F Udrea, S Z Ali, S Santra, J Gardner, J Park, S H Kim, S E Moon, K H Park, J D Kim, Y Choi and W I Milne, ***ETRI journal*** vol 30 no 4 (2008) 516-525
62) Growth of Carbon nanotubes on fully processed SOI CMOS Substrates, Md S Haque, S Z Ali, P K Guha, J Park, S Maeng, K B K Teo, F Udrea and W I Milne, ***Journal of Nanoscience and Nanotechnology*** vol 8 (2008)1-6
63) Novel design and characterisation of SOI CMOS micro-hotplate for high temperature gas sensors, P K Guha*, S Z Ali, CCC Lee, F Udrea, W I Milne, T Iwaki, J A Covington and J W Gardner, ***Sensors and Actuators B*** vol 127 (2007) 260-266

Conference Proceedings/ Abstracts:

64) Discrimination of VOCs along with concentration change detection applying a combination of DWT and Machine Learning tools, S Acharyya, Sudip Nag and Prasanta Kumar Guha, (*IEEE Sensors Conference, 2021, Sydney, Australia*)
65) 2-Propanol detection with NiO decorated SnO_2 microspheres for indoor air quality monitoring applications, Snehanjan Acharyya, Sayan Dey, Sudip Nag and Prasanta Kumar Guha (*IWPSD, 2019, Kolkata, India*)
66) WO_3 nanoplates based chemiresistive sensor device for selective detection of 2-Propanol, S Acharyya, B Manna, Sudip Nag and Prasanta Kumar Guha, (*IEEE Sensors Conference, 2019, Montreal, QC, Canada*)
67) Exploring formaldehyde sensing capability of noble metal decorated reduced graphene oxide through first principle approach, B Manna, S Acharyya, Indrajit Chakrabarti and Prasanta Kumar Guha, (*IEEE Sensors Conference, 2019, Montreal, QC, Canada*)
68) Temperature Tunable Selectivity of NiO/$Fe_xNi_{(1-x)}O$ Heterojunction Device Based VOC Sensor, S Dey, S Santra, S K Ray, P K Guha, (*IEEE SENSORS, 2018, New Delhi India*)
69) ZnO Cladded MnO_2 Based Resistive Sensor Device for Formaldehyde Sensing, S Acharyya, S Dey, S Nag and P K Guha, (*IEEE Sensors Conference, 2018, New Delhi India*)
70) Chemically synthesized $Cu_xNi_{(1-x)}O$ hierarchical nanostructures as room temperature humidity sensors, S Dey, S Santra, S K Ray, P K Guha, (*EMRS Spring Meeting, 2017 Strasbourg, France*)
71) RGO/Ni_2O_3 composites as a multifunctional material for efficient water quality monitoring, A Kar, S Dey, S Santra, S K. Ray, P K Guha, (*EMRS Spring Meeting, 2017 Strasbourg, France*)
72) Integration of Au-SnO_2 Nanocomposites with Power Efficient MEMS Substrate for Acetone Sensing S Santra, A. De Luca, P K Guha, F Udrea, S K Ray, J W Gardner, (*IEEE Sensors Conference, 2017 Glasgow*)
73) Photon assisted ultra-selective Formaldehyde sensing by defect induced NiO nanostructured sensing layer, S Dey, S Santra, S Sen, D Burman, S K Ray, P K Guha, (*IEEE Sensors Conference, 2017 Glasgow*)
74) MoS_2 based resistive humidity sensor, D Burman, R Ghosh, S Santra, S K Ray and P K Guha, (*ICMAT2015 & IUMRS-ICA2015*, *Singapore*)
75) Ambient temperature carbon nanotube ammonia sensor on CMOS platform, S. Santra, A K Sinha, S K Ray, S Z Ali, F Udrea, J W Gardner and P K Guha, (Procedia Engineering *Eurosensors XXVIII, Italy* 87, (2014) 224-227)
76) Synthesis of graphene/metal-incorporated graphene from natural cellulosic materials, S. Gupta Chatterjee, V. Sharma, S. Chatterjee, P. K. Guha and A. K. Ray, (*ISRS, IIT Madras, India* 2014)
77) Chemical synthesis of β -$FeSi_2$ microparticles for solar cell application, S. Sen, P. Pramanik, P. K. Guha and P. Banerji (*International Union of Materials Research Society, ICA 2013*)
78) Humidity sensing by chemically reduced graphene oxide, R Ghosh, A Midya, S Santra, S K Ray and P K Guha (*IWPSD 2013, India*)
79) SOI CMOS Integrated Zinc Oxide Nanowire for Toluene Detection, S Santra, P K Guha, S K Ray, F Udrea and J W Gardner, (*INEC 2013, Singapore*)
80) Carbon Nanotube Integration on a fully processed CMOS MEMS wafers and their NO_2 response, S Santra, P K Guha, S K Ray, S Z Ali, F Udrea, J W Gardner, (*Nano 2012, Greece*).
81) Zinc oxide nanowire based hydrogen sensor on SOI CMOS platform, P K Guha, S Santra, J A Covington, F Udrea, J W Gardner, *Procedia Engineering EurosensorsXXV, Greece* Vol 25, (2011) 1473–1476
82) Mixed signal temperature control circuit for on-chip CMOS gas sensor, V Garofalo, P K Guha, S Z Ali, S Santra, M F Chowdhury, E Napoli, F Udrea, *IEEE Proceedings of CAS Conference, Romania* (2009) 495-498
83) Nanotubes and nanorods on CMOS substrates for gas sensing **(invited paper)**, F Udrea, S Santra, P K Guha, S Z Ali, J A Covington, W I Milne, J W Gardner, S Maeng, *AIP Proceedings of ISOEN Conference (*2009) 19-26 (ISSN: 0094-243X)
84) Nanowire hydrogen gas sensor employing CMOS micro-hotplate, S Z Ali, S Santra, P K Guha, I Haneef, V Garofalo, C Schwandt, J A Covington, R V Kumar, J W Gardner, W I Milne, F Udrea, *Proceedings of IEEE Sensors, New Zealand* 2009
85) Integration of vertically aligned Single-Walled Carbon Nanotube onto SOI CMOS chips at room temperature, S Santra, G Zhong, S Z Ali, P K Guha, J Robertson, J W Gardner, W I Milne, F Udrea, *Diamond Athens 2009*
86) SOI CMOS platform for gas sensing applications **(invited paper)**, W I Milne, S Santra, F Udrea, S Z Ali, P K Guha, S M C Viera, S L Maeng, J W Gardner, *ULSIC and TFT, China* 2009

87) CMOS alcohol sensor employing ZnO nanowire sensing films, S Santra, S Z Ali, P K Guha, P. Hiralal, H. E. Unalan, S. H. Dalal, J A Covington, J W Gardner, W I Milne, F Udrea, *AIP Proceedings of ISOEN Conference (*2009) 119-122 (ISSN: 0094-243X)
88) SOI diode temperature sensor operated at ultra-high temperature – a critical analysis, S Santra, P K Guha, S Z Ali, I Haneef, F Udrea and J W Gardner; *Proceeding of IEEE Sensor Conference* (2008)39-40
89) SOI MEMS wall shear stress sensors with CMOS electronics, I Haneef, P K Guha, S Z Ali, J D Coull, F Udrea, H P Hodson, *Proceedings of Eurosensors Conference* XXII (2008)169-173
90) Carbon nanotube gas sensor integrated on CMOS substrate (**Best poster award**), S Santra, S Z Ali, P K Guha, F Udrea, J W Gardner, W I Milne, *Cambridge CNT symposium* 2008
91) SOI MEMS anemometer with CMOS electronics, I Haneef, P K Guha, S Z Ali, J D Coull, F Udrea, H P Hodson, *International Gas turbine Instrumentation Conference*, Spain 2008
92) Ultra-high temperature (>300ºC) suspended thermodiode in SOI CMOS Technology, F Udrea, S Santra, P K Guha, S Z Ali, I Haneef, *Proceedings of International Workshop on Thermal Investigation of ICs and Systems, Italy* (2008) 195-199
93) Silicon diode temperature sensor beyond 300ºC, S Santra, P K Guha, S Z Ali, I Haneef, F Udrea, *IEEE Proceedings of CAS Conference, Romania* (2007) 415-418
94) Three technologies for a smart miniaturized gas-sensor: SOI CMOS, micromachining and CNTs- challenges and performance, F Udrea, S Maeng, J W Gardner, J Park, M S Haque, S Z Ali, Y Choi, P K Guha, S M C Vieira, H Y Kim, S Y Lee, S H Kim, K C Kim, S E Moon, W I Milne, S Y Oh, *IEDM, USA* (2007) 831-834
95) Novel on chip growth of Carbon Nanotubes using high temperature micro-heaters, Md S Haque, S Z Ali, N. Rupensinghe, I Haneef, P K Guha, F Udrea, W I Milne, S Maeng, *Nanotube Brazil,* 2007
96) High temperature SOI CMOS tungsten micro-heater, S Z Ali, P K Guha, C C C Lee, F Udrea, W I Milne, T Iwaki, J A Covington, J W Gardner, *Proceedings of IEEE Sensors, Korea* (2006) 847-850
97) Novel design and characterisation of SOI CMOS micro-hotplate for gas sensors, P K Guha, S Z Ali, F Udrea, W I Milne, T Iwaki, J A Covington, J W Gardner, *Proceedings of Eurosensors Conference X*X vol 2 (2006)268-269
98) Design and simulation of resistive SOI CMOS micro-heaters for high temperature gas sensors, T Iwaki, J A Covington, F Udrea, S Z Ali, P K Guha, J W Gardner, *J. Phys Conf. Ser.* vol 15 (2005)27-32 (ISSN: 1742-6588)