
AUTHOR'S RELEVANT PUBLICATIONS

Journals:

1. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bratindranath Mukherjee, Bhola Nath Pal, and Satyabrata Jit. "Heating Effects of Colloidal ZnO Quantum Dots (QDs) on ZnO QDs/CdSe QDs/MoO_x Photodetectors." *IEEE Transactions on Nanotechnology*, 16(6):1073-1080, 2017.
2. **Hemant Kumar**, Yogesh Kumar, Kunal Singh, Sanjay Kumar, Gopal Rawat, Chandan Kumar, Bhola Nath Pal, and Satyabrata Jit. "Kink Effect in TiO₂ Embedded ZnO Quantum Dot based Thin Film Transistors." *Electronics Letters*, 53(4):15–16, 2017.
3. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bratindranath Mukherjee, Bhola Nath Pal, and Satyabrata Jit. "Electrical and Optical Characteristics of Solution processed MoO_x and ZnO QDs Heterojunction". *MRS Communications*, 7(3), 607-612, 2017.
4. **Hemant Kumar**, Yogesh Kumar, Bratindranath Mukherjee, Gopal Rawat, Chandan Kumar, Bhola Nath Pal, and Satyabrata Jit. "Electrical and Optical Characteristics of Self- Powered Colloidal CdSe Quantum Dot-Based Photodiode." *IEEE Journal of Quantum Electronics*, 53(3):1-8, 2017.
5. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bratindranath Mukherjee, Bhola Nath Pal, and Satyabrata Jit. "Colloidal CdSe Quantum Dots and PQT-12 Based Low-Temperature Self-Powered Hybrid Photodetector." *IEEE Photonics Technology Letters*, 29(20):1715-1718, 2017.

6. **Hemant Kumar**, Yogesh Kumar, Bratindranath Mukherjee, Gopal Rawat, Chandan Kumar, Bhola Nath Pal, and Satyabrata Jit. "Effects of Optical Resonance on the Performance of Metal (Pd, Au)/CdSe Quantum Dots (QDs)/ ZnO QDs Optical Cavity Based Spectrum Selective Photodiodes." *IEEE Transactions on Electron Devices*, (under review), 2018.

Confrences/Workshops/Symposium:

1. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bratindranath Mukherjee, Bhola Nath Pal, and Satyabrata Jit. "Solution processed MoO₂ and ZnO Heterojunction Electrical and Optical Characteristics." MRS Spring Meeting, Phoenix, Arizona, 2017.
2. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bratindranath Mukherjee, Bhola Nath Pal, and Satyabrata Jit. "Effect of Electrode on Spectrum Selectivity and Photoresponse of the Colloidal-QD Based Schottky Photodiode." MRS Fall Meeting, Boston, Massachusetts, 2017.
3. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bhola N Pal, and Satyabrata Jit. "Optical Characteristics of Solution Processed MoO₂ / ZnO Quantum Dots based Thin Film Transistor." In IEEE-iNiS, pages 210–213, Gwalior, India, 2016. IEEE Computer Society.
4. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Chandan Kumar, Bhola N Pal, and Satyabrata Jit. "Electrical and Optical Characteristics of CdSe Quantum Dot based Schottky Diode." In IEEE-ICIIS, pages 365–368, Roorkee, India, 2016.
5. **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Kunal Singh, Bhola N Pal, and S Jit. "Ultra-Violet Detection Characteristics of MoO₂ / ZnO based Thin Film Sensor Grown on Al₂O₃ / p-Si Substrates." In CDAMOP, pages 8–11, 2015.

OTHER RELEVANT PUBLICATIONS

1. Yogesh Kumar, **Hemant Kumar**, Gopal Rawat, Chandan Kumar, Anand Sharma, Bhola Nath Pal, and Satyabrata Jit. “Colloidal ZnO Quantum Dots Based Spectrum Selective Ultraviolet Photodetectors.” *IEEE Photonics Technology Letters*, 29(4):361–364, 2017.
2. Gopal Rawat, **Hemant Kumar**, Yogesh Kumar, Chandan Kumar, Divya Somvanshi, and Satyabrata Jit. “Effective Richardson Constant of Sol-Gel Derived TiO₂ Films in n-TiO₂ / p-Si Heterojunctions.” *IEEE Electron Device Letters*, 38(5):633-636, 2017.
3. Yogesh Kumar, **Hemant Kumar**, Bratindranath Mukherjee, Gopal Rawat, Chandan Kumar, Bhola Nath Pal, and Satyabrata Jit. “Visible-blind Au / ZnO Quantum dots based Highly Sensitive and Spectrum Selective.” *IEEE Transactions on Electron Devices*, 64(7), 2017.
4. Chandan Kumar, Gopal Rawat, **Hemant Kumar**, Yogesh Kumar, Smriti Ratan, Rajiv Parakash, and Satyabrata Jit. “Poly (3, 3’)-dialkylquaterthiophene) Based Flexible Nitrogen Dioxide Gas Sensor.” *IEEE Sensor Letters*, 2(1), 2018.
5. Shivalini Singh ,Yogesh Kumar, **Hemant Kumar**, Sumit Vyas, Chinnamuthan Periasamy, Parthasarathi Chakrabarti, Satyabrata Jit, and Si-Hyun Park. “A Study of Hydrothermally Grown ZnO Nanorod-Based Metal-Semiconductor-Metal UV Detectors on Glass Substrates.” *Nanomaterials and Nanotechnology*, 7:1-5, 2017.
6. Gopal Rawat, Divya Somvanshi, **Hemant Kumar**, Yogesh Kumar, Chandan

- Kumar, and Satyabrata Jit. “Ultraviolet Detection Properties of p-Si/n – TiO₂ Heterojunction Photodiodes Grown by Electron-Beam Evaporation and Sol-Gel Methods: A Comparative Study.” *IEEE Transactions on Nanotechnology*, 15(2):193–200, 2016.
7. Shivalini Singh ,Pramod Kumar Tiwari, **Hemant Kumar**, Yogesh Kumar, Gopal Rawat, Sanjay Kumar, Kunal Singh, Ekta Goel, S Jit, and Si-Hyun Park. “Theoretical and Experimental Study of UV Detection Characteristics of Pd/ZnO Nanorod Schottky Diodes.” *Nano*, 12: 1750137(8), 2017.
 8. Chandan Kumar, Gopal Rawat, **Hemant Kumar**, Yogesh Kumar, Rajiv Prakash, and Satyabrata Jit. “Electrical and Ammonia Gas Sensing Properties of Poly (3 , 3” – dialkylquaterthiophene) Based Organic Thin Film Transistors Fabricated by Floating-Film Transfer Method.” *Organic Electronics*, 48:53-60, 2017.
 9. Chandan Kumar, Gopal Rawat, **Hemant Kumar**, Yogesh Kumar, Rajiv Prakash, and Satyabrata Jit. “Flexible poly (3, 3”- dialkylquaterthiophene) based interdigitated metal-semiconductor-metal ammonia gas sensor.” *Sensors & Actuators: B. Chemical* 255(part 1):203–209, 2017.
 10. Gopal Rawat, Divya Somvanshi, Yogesh Kumar, **Hemant Kumar**, Chandan Kumar, and Satyabrata Jit. “Electrical and Ultraviolet-A Detection Properties of E-Beam Evaporated n-TiO₂ Capped p-Si Nanowires Heterojunction Photodiodes.” *IEEE Transactions on Nanotechnology*, 16(1):49–57, 2017.
 11. Gopal Sankar, Piyali Maity, Yogesh Kumar, **Hemant Kumar**, Vinod K Gangwar, Sandip Chaterjee, Satyabrata Jit, Anup K Ghosh, and Bhola N. Pal. “Single Quantum Dot Rectifying Diode With Tunable Threshold Voltage.” *RSC-Journal of Materials Chemistry C*, 5(37): 9792-9798, 2017.

12. Kunal Singh, Sanjay Kumar, Ekta Goel, Balraj Singh, Prince Kumar Singh, Kamlaksh Baral, **Hemant Kumar**, and Satyabrata Jit. “Effects of Source/Drain Elevation and Side Spacer Dielectric on Drivability Performance of Non-Abrupt Ultra Shallow Junction Gate Underlap GAA MOSFETs.” *Indian Journal of Physics*, 92(2): 171-176, 2018.