

List of Publications

Journal Articles

- (1) A. Nigam, N. Sharma, D. Lobanov, N. Alexey, and M. Kumar, "Ultra-Sensitive Detection of Mercury ions under UV illumination of MoS₂ functionalized AlGa_N/Ga_N Transistor," *IEEE Transactions on Electron Devices*, (in early access).
- (2) A. Nigam, N. Goel, T. N. Bhat, M. T. Rahman, S. B. Dolmanan, Q. Qiao, S. Tripathy, and M. Kumar, "Real-time detection of Hg²⁺ ions using MoS₂ functionalized AlGa_N/Ga_N high electron mobility transistor for water quality monitoring," *Sensor and Actuator B: Chemical*, Vol. 309, no. 127832, 2020.
- (3) V. S. Bhati, A. Nathani, A. Nigam, C. S. Sharma, and M. Kumar, "PAN/(PAN-b-PMMA) derived nanoporous carbon nanofibers loaded on ZnO nanostructures for hydrogen detection," *Sensor and Actuator B: Chemical*, Vol. 299, no. 126980, 2019.
- (4) A. Nigam, V. S. Bhati, T. N. Bhat, S. B. Dolmanan, S. Tripathy, and M. Kumar, "Sensitive and Selective Detection of Pb²⁺ ions using 2,5-Dimercapto-1,3,4-Thiadiazole Functionalized AlGa_N/Ga_N High Electron Mobility Transistor," *IEEE Electron Device Letters*, Vol. 40, no. 12, 2019.
- (5) A. Nigam, T. N. Bhat, V. S. Bhati, S. B. Dolmanan, S. Tripathy, and M. Kumar, "MPA-GSH functionalized AlGa_N/ Ga_N High Electron Mobility Transistor-based sensor for Cadmium ion detection," *IEEE Sensors Journal*, Vol. 19, no. 8, 2019.
- (6) A. Nigam, T. N. Bhat, S. Rajamani, S. B. Dolmanan, S. Tripathy, and M. Kumar, "Effect of self-heating on electrical characteristics of AlGa_N/Ga_N HEMT on Si (111) substrate," *AIP Advances*, vol. 7, no. 8, p. 085015, 2017

Conference Papers

- (1) A. Nigam, and M. Kumar, "Detection of cadmium ions by g-C₃N₄ functionalization on AlGa_N/Ga_N high electron mobility transistor," 64th DAE-SSPS 2019, IIT Jodhpur, December 18-22, 2019, Vol. 2265 (1), p. 030216, 2020.
- (2) A. Nigam and M. Kumar, "Detection of Heavy Metal Ions using AlGa_N/Ga_N High Electron Mobility Transistor (HEMT)" *ICMAT 2019, Marina Bay Sands, Singapore*, June 23-28, 2019.
- (3) A. Nigam and M. Kumar, "Device Modeling and Simulation of AlGa_N/Ga_N High Electron Mobility Transistor on Si Substrate" *IUMRS-ICYRAM 2016, IISc Bangalore*, December 11-15, 2016.
- (4) A. Nigam, S. Rajamani, and M. Kumar, "Design of AlGa_N/Ga_N High Electron Mobility Transistor on Si Substrate" *CEMAT 2016, IISc Bangalore*, July 18-19, 2016.

