

## Faculty Profile



**Name:** Dr. ASISA KUMAR PANIGRAHY

**Designation:** Associate Professor

**Teaching Areas:** Electronic Devices, Digital Signal Processing, and Microprocessor.

**Research Interests:** Device Simulation, and Vertical (3D IC) integration.

### Education:

- **Ph.D.** (Electrical Engineering- Microelectronics & VLSI) from **Indian Institute of Technology Hyderabad**, August 2017.
- **M. Tech.** (VLSI & Embedded System Design) from B.P.U.T, Odisha, 2012.
- **B.Tech.** (Electronics & Communication Engineering) from National Institute of Science & Technology, Berhampur under B.P.U.T, Odisha, 2010.

### Research / Selected Publications:

**International Journal: (SCI indexed: 25, International Conferences (Scopus indexed): 38, Book: 2)**

1. **Asisa Kumar Panigrahy et.al.** "Surface Density Gradient Engineering Precedes Enhanced Diffusion; Drives CMOS In-Line Process Flow Compatible Cu–Cu Thermocompression Bonding at 75° C." *IEEE Transactions on Device and Materials Reliability* 19, no. 4 (2019): 791-795.
2. **Asisa Kumar Panigrahi et.al.** "Oxidation resistive, CMOS compatible Copper based Alloy ultrathin films as a superior passivation mechanism for achieving 150°C Cu-Cu wafer on wafer thermocompression bonding, " *IEEE Transactions on Electron Devices*, 64(3), pp.1239-1245, 2017.
3. Bonam, Satish, Jose Joseph, C. Hemanth Kumar, **Asisa Kumar Panigrahi**, Siva Rama Krishna Vanjari, and Shiv Govind Singh. "Fabrication of On-Silicon Aperture Coupled Patch Antenna Through Micromachining and Cu-Cu Thermocompression Bonding." *IEEE Transactions on Semiconductor Manufacturing* 35, no. 4 (2022): 626-632.
4. **Asisa Kumar Panigrahi et.al.**, "Interface and Reliability Analysis of Au-Passivated Cu–Cu Fine-Pitch Thermocompression Bonding for 3-D IC Applications," *IEEE Transactions on Components, Packaging and Manufacturing Technology* 9, no.7, pp. 1227-1234, 2019.
5. **Asisa Kumar Panigrahy et.al.** "Design and analysis of gate stack silicon-on-insulator nanosheet FET for low power applications." *Silicon* 15, no. 4 (2023): 1739-1746.

### Patent:

1. **Asisa Kumar Panigrahy et.al.** "Artificial Intelligence based smart Detection of Lung Disease from Chest X-RAY", **Australian Patent** no. 2020104159, **granted on 31<sup>st</sup> March 2021.**
2. **Asisa Kumar Panigrahi et.al.** "Optimized ultra-thin alloys leads sub 140 degree Celsius and Low Pressure 2.5 bar Cu-Cu bonding for 3D ICs", Indian Patent Issue No. **16/2018**, Published on 20<sup>th</sup> April 2018, **granted on 09<sup>th</sup> June 2023.**