PRATEEK BINDRA

Academics

- **Ph.D**. in Nanoelectronics from Birla Institute of Technology & Science (BITS), Pilani. Awarded: 2020.
- **M.E.** in Microelectronics from BITS, Pilani. 2013. (7.4)
- **B. Tech.** in Electronics & Communication from Technological Institute of Textile & Sciences (TIT&S), Bhiwani. 2009. (69%)
- **Senior Secondary.** Major: Physics, Chemistry and Maths**,** CBSE. 2005. (80%)
- **Secondary.** CBSE. 2003. (84%)

Publications

1. P. Bindra, A. Hazra, Selective detection of organic vapors using TiO_2 nanotubes based single sensor at room temperature. **Sensors and Actuators B: Chemical, Elsevier**, vol. 290, pp. 684-690, 2019. *(I.F. 7.1)*
2. P. Bindra, S. Gangopadhyay, A. Hazra, Au/TiO_2 nanotubes/Ti based solid state vapor sensor: Efficient sensing in resistive and capacitive modes. **IEEE Transactions on Electron Devices**, vol. 65, no. 5, pp. 1918-1924, 2018. *(I.F. 2.91)*
3. P. Bindra, A. Hazra, Dielectric sensor system using TiO_2 nanotubes for real-time detection of methanol contamination in alcoholic beverages. **IEEE Transactions on Instrumentation and Measurement**. vol. 69, no. 9, pp. 6621-6629, 2020. *(I.F. 3.65)*
4. P. Bindra, A. Hazra, Multi-layered TiO_2 nanotubes array based highly sensitive room temperature vapor sensors. **IEEE Transactions on Nanotechnology**, vol. 18, pp. 13-20, 2019. *(I.F. 2.19)*
5. P. Bindra, S. Gangopadhyay, A. Hazra, 1-D TiO_2 nanorods array based parallel electrode sensor for selective and stable detection of organic vapors. **IEEE Sensors Journal**, vol. 20, pp. 664-671, 2020. *(I.F. 3.07)*
6. P. Bindra, A. Hazra, Impedance behavior of n-type TiO_2 nanotube porous layer in reducing vapor ambient. **Vacuum, Elsevier**, vol. 152, pp. 78-83, 2018. *(I.F. 2.9)*
7. P. Bindra, A. Hazra, Capacitive gas and vapor sensors using nanomaterials. **Journal of Materials Science: Materials in Electronics, Springer**, vol. 29, no. 8, 6129-6148, 2018. *(I.F. 2.22)*

Conferences

1. P. Bindra, A. Hazra, "Impedance behavior of TiO_2 nanotube porous layer in reducing vapor ambient", *17th International Conference on Thin Films, CSIR- National Physical Laboratory, New Delhi*, 2017.
2. P. Bindra, A. Hazra, "Controlled variation of structural parameters of electrochemically grown TiO_2 nanotube array", *International Conference on Nano and Functional Materials, BITS Pilani*, 2017.
3. A. Hazra, P. Bindra, "Resistive and Capacitive Sensing Performance of TiO_2 Nanotube based Vapor Sensor", *5th International Conference on Advanced Nanomaterial and Nanotechnology, IIT Guwahati*, 2017.
4. P. Bindra, A. Hazra, "Double layer TiO_2 nanotubes-based sensor for methanol detection at room temperature", *International Functional Nanomaterials and Nanodevice Conference, Renaissance Wien Hotel, Vienna*, 2018.
5. P. Bindra, A. Hazra, "Highly sensitive capacitive type ethanol sensors based on double layer TiO_2 nanotubes array", *International Workshop on Nano-Micro 2D-3D Fabrication, Manufacturing of Electronic-Biomedical Devices and Applications, IIT Mandi*, 2018.
6. P. Bindra, A. Hazra, "Hydrothermal synthesis of 1-D TiO_2 nanorods on Ti substrate for efficient vapor sensing", *International Conference on Nano-Structured Materials & Devices, University of Delhi*, 2018.
7. P. Bindra, A. Hazra, "An insight into one dimensional nanostructures for capacitive gas sensing", *Symposium on Carbon Nanomaterial Electronics, BITS Pilani*, 2019.

Teaching Experience

- Teaching Assistant, BITS, Pilani — Aug 2011-Dec 2012
- Assistant Professor, Geeta Engineering College (GEC), Panipat — Aug 2013-Jan 2014
- Assistant Professor, ITM University, Gurgaon — Jan 2014-May 2015
- Teaching Assistant, BITS, Pilani — Sep 2016-Dec 2019

Courses Handled

1. Integrated Circuits and Applications. Course: B.Tech. Student strength: 60. Role: *Instructor in charge*
2. Consumer Electronics. Course: B.Tech. Student strength: 60. Role: *Instructor in charge*
3. Semiconductor Device Modeling. Course: M.E. Student strength: 10. Role: *Instructor in charge*
4. VLSI Technology. Course: B.Tech. Student strength: 30. Role: *Instructor in charge*
5. Electron Devices. Course: B.Tech. Student strength:30. Role: *Teaching Assistant*
6. Electrical Sciences. Course: B.Tech. Student strength:30. Role: *Teaching Assistant*
7. Digital Design. Course: B.Tech. Student strength:80. Role: *Lab Teaching Assistant*
8. Analog Electronics. Course: B.Tech. Student strength:40. Role: *Lab Teaching Assistant*
9. Measurement Techniques. Course: B.Tech. Student strength:30. Role: *Lab Teaching Assistant*

(1-3 @ ITM University, 4 @ GEC, 5-9 @ BITS Pilani)

Research Interest

- Nanotechnology, Device Physics, Biomarker Sensors.
- Simulation Tools: Silvaco TCAD, TI PSpice
- Experimental Tools: XRD, FESEM, XPS, TEM, PL, PVD, I-V, C-V, and LCR meters
- Thesis Titles:

> PhD - Selective sensing of volatile organic compounds using 1-D titanium dioxide nanostructures
> Advisor: Dr. A. Hazra, BITS Pilani

> M.E. - Dark current analysis in CMOS image sensor
> Advisor: Dr. M. Sarkar, IIT Delhi

> B.Tech. - High voltage analysis of electron gun of 42 GHz, 200 kW Gyrotron
> Advisor: Dr. A.K. Sinha, CEERI Pilani

Awards and Workshops

- Qualified "GATE" and "NET".
- Awarded "International Travel Support" grant by Science and Engineering Research Board, India.
- Awarded "Junior and Senior Research Fellowship" by Department of Science and Technology, India.
- Awarded "Academic Scholarship" by BITS, Pilani.
- Awarded "Summer Research Fellowship" by IIT, Delhi.
- Workshop - "Nanofabrication Technology" at IISc, Bangalore.
- Workshop - "Fabrication and characterization of MOS" at IISc, Bangalore.
- Workshop - "Thin Film and Coating Technology" at CSIR-National Physical Laboratory, New Delhi.

Other Information

- Mobile No: +917023807704
- Email: prateekbindra@gmail.com
- ORCID ID: https://orcid.org/0000-0003-3641-1365

- Citations: 66
- h-index: 5

Serial No. BT05603

Roll No. 382539

Regn. No. 05-TIB-160

महर्षि दयानन्द विश्वविद्यालय, रोहतक

बैचलर ऑफ टैक्नोलोजी (इलेक्ट्रो.एवं कम्युनिकेशन इंजीनियरिंग)

05603

प्रमाणित किया जाता है कि प्रतीक बिंद्रा

सुपुत्र/सुपुत्री श्री नरेश कुमार बिंद्रा विद्यार्थी

दि.टैक्नोलॉजिकल इन्स्टीच्यूट ऑफ टैक्सट. एवं साईंसंज भिवानी

को इस विश्वविद्यालय द्वारा मई 2009 में आयोजित तत्सम्बन्धी

परीक्षा प्रथम श्रेणी में उत्तीर्ण कर लेने के उपरान्त

बैचलर ऑफ टैक्नोलोजी (इलेक्ट्रो.एवं कम्युनिकेशन इंजीनियरिंग)

की उपाधि प्रदान की जाती है ।

MAHARSHI DAYANAND UNIVERSITY, ROHTAK

BACHELOR OF TECHNOLOGY (ELECT. & COMMUNICATION ENGG.)

This is to certify that PRATEEK BINDRA

son/daughter of Shri NARESH KUMAR BINDRA a student of

THE TECHNOLOGICAL INST. OF TEXTILES & SCIENCES BHIWANI

is hereby awarded the degree of

BACHELOR OF TECHNOLOGY (ELECT. & COMMUNICATION ENGG.)

on his/her having passed the Examination for the said degree held

in MAY 2009 . He/She is placed in FIRST Division.

विश्वविद्यालय के मुद्रांकन द्वारा प्रमाणित

Given under the seal of the University

कुलसचिव

Registrar

कुलपति

Vice- Chancellor

रोहतक, तिथि सितम्बर 30, 2009

Rohtak, Dated September 30, 2009

कुलाधिपति

Chancellor

73/GF0690/2011H123026G

The Birla Institute of Technology & Science

Upon the Recommendation of the Senate hereby confers on

Prateek Bindra

The Degree of

Master of Engineering

In

Microelectronics

in recognition of having attained proficiency in the General and Special Studies and having fulfilled all the requirements of the degree.

Given this nineteenth day of July, two thousand thirteen under the Seal of the Birla Institute of Technology & Science at Pilani in the State of Rajasthan, India.

DIRECTOR

REGISTRAR

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
ज्ञानं परमं बलम्

CHANCELLOR

VICE-CHANCELLOR

PC/ID NO 2016PHXF0409P

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE

PILANI (RAJASTHAN) INDIA

PROVISIONAL CERTIFICATE

This is to certify that

PRATEEK BINDRA

has fulfilled the requirements of graduation and has become eligible for the award of the degree

Ph.D.

during SECOND SEMESTER 2019-2020

Thesis Title:
"Selective Sensing of Volatile Organic Compounds Using One Dimensional Titanium Dioxide Nanostructures"

PILANI
Dated 15-JUN-2020

REGISTRAR