

# DR. RAJSHREE RAJKUMARI

Assistant Professor

Dept. of Electronics & Communication Engineering  
NITK Surathkal, Mangaluru, Karnataka 575025

Mobile: +91 7628046342 E-mail: rajshree@nitk.edu.in



## Personal Profile

<b>Date of Birth:</b>	17-10-1990 (34 years)
<b>Father's Name:</b>	R.K. Budhi singh
<b>Marital Status:</b>	Married
<b>Sex:</b>	Female
<b>Nationality:</b>	Indian
<b>Religion:</b>	Meitei
<b>Permanent Address:</b>	Khurai Sajor Leikai ,Ukhrul Road, Imphal(E) Manipur- 795010, India

## Education

	Name of course	Name of the Board/ University	Year of passing	Subjects studied
	(a)	(b)	(c)	(d)
<b>10th Class</b>	AISSE	CBSE	2005	English, Manipuri, Maths, Science, Social Science
<b>10+2</b>	AISSCE	CBSE	2007	English, Physics, Chemistry, Biology, Maths, Painting
<b>Bachelor's degree</b>	B.E	MANIPUR UNIVERSITY	2007-2011	Electronics & Communication Engineering
<b>Master's degree</b>	M.Tech	Assam Don Bosco University	2012-2014	Electronics & Communication Engineering
<b>Ph. D.</b>	Ph.D.	National Institute of Technology Nagaland	2016- 2021	Title: Studies on GLAD synthesized WO <sub>3</sub> nanowires and silver nanoparticle decorated WO <sub>3</sub> nanowires based photodetector and non-volatile memory

## Area of Interest

Core Areas of Specialization	Current Research Interests
Optoelectronics and Memory devices	Fabrication of nanostructures based photodetector, Solar cells and Non volatile Memory applications.

## Work Experience

- Served as Assistant Professor (Contract) in the Dept. of ECE, IIIT Manipur from 13<sup>th</sup> December, 2022 to 16<sup>th</sup> December, 2024
- Worked as Research Fellow from May 1, 2022 to November 30, 2022 in the Dept. of Materials Science and Engineering, Kyushu University, Japan-819 0395.
- Served as Teaching Assistant from September 2016 to November 2020 in the Department of Electronics & Communication Engineering, National Institute of Technology Nagaland, Dimapur-797103, Nagaland.

## Technical Skills

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- Operation of Electron Beam Evaporator, Ball Milling and sputtering.
- Oblique angle deposition and glancing angle deposition techniques for nanowires, thin film and nanoparticle fabrication.
- Fabrication of ultraviolet Schottky diode (nanowires as well as thin film devices) as well as non volatile memory device.
- Silicon paste preparation for solar cells
- I-V and C-V measurement of the devices.
- XRD, FTIR, Absorption measurement.
- Operation of Quartz Tube Furnace and Hot Press

## Publications

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1. Rajkumari, R., Alam, M. W., Souayah, B., & Singh, N. K. (2024). Improvement of capacitive and resistive memory in WO<sub>3</sub> thin film with annealing. *Journal of Materials Science*, 59(8), 3270-3283.
2. Rajkumari, R., Sadaf, S., Alam, M. W., & Singh, N. K. (2024). Self-Powered Photodetector with High Sensitivity Based on a CeO<sub>2</sub>/TiO<sub>2</sub> Thin Film. *ACS Applied Electronic Materials*, 6(5), 3532-3538.
3. Lynrah, S. A., Chinnamuthu, P., Rajkumari, R., Lim, Y. Y., Walling, L., & Vigneash, L. (2024). Surface functionalization of MnO<sub>2</sub> NW embellished with metal nanoparticles for self-cleaning applications. *Applied Nanoscience*, 14(3), 519-529.
4. Rajkumari, R. Ngangbam C, and Singh, N.K., High Detectivity Photodetector Based on WO<sub>3</sub> Nanowires by the Surface Plasmonic Effect of Ag Nanoparticles, *IEEE Electron Device Letters*, Vol. 43, No. 3, pp. 470., January, 2022.
5. C. Ngangbam, Rajkumari, R. L. Thoibileima, M. W. Alam and Singh, N.K., "High Responsivity of GLAD Synthesized Isotype WO<sub>3</sub>/In<sub>2</sub>O<sub>3</sub> Nanocluster," in *IEEE Photonics Technology Letters*, Vol. 33, No. 17, pp. 943-946., September, 2021.
6. N.M. Devi, S.A. Lynrah, Rajkumari, R. and Singh, N.K., Effect of Ag decoration on the Photodetection of Catalyst-Free Synthesized Vertically Oriented SiO<sub>x</sub> NW arrays, *Sensors and Actuators A: Physical*, Vol. 327, pp. 112744., August, 2021.
7. Rajkumari, R., Ngangbam, C. and Singh, N.K., Presence of capacitive memory in GLAD-synthesized WO<sub>3</sub> nanowire, *Journal of Materials Science: Materials in Electronics*, Vol. 32, No. 3, pp.3191-3200., January, 2021.
8. Rajkumari, R. and Singh, N.K., Ag Nanoparticle-Decorated WO<sub>3</sub> Nanowires for Nonvolatile Memory, *ACS Applied Nano Materials*, Vol. 3, No. 12, pp. 12087-12094, December, 2020.
9. S. Meitei, Rajkumari, R. and Singh, N.K., Post deposition annealing effect on the electrical properties of β-Ga<sub>2</sub>O<sub>3</sub> Nanowire, *Journal of Materials Science: Materials in Electronics*, Vol. 31, No. 22, pp. 20378-20386, September, 2020.
10. Rajkumari, R. and Singh, N.K., Effect of Annealing on Morphology and Photoluminescence of WO<sub>3</sub> Nanowires Deposited by Glancing Angle Deposition Techniques, *Journal of Nanoscience and Nanotechnology*, Vol. 20, No. 5, pp. 3274-3282., May, 2020.
11. Rajkumari, R. and Singh, N.K., Effect of annealing on the structural and electrical properties of GLAD synthesized vertical aligned WO<sub>3</sub> nanowire, *IEEE Transactions on Nanotechnology*, Vol. 18, pp. 676-683, July, 2019.

12. Rajkumari, R. and Singh, N.K., Influence of annealing on the optoelectronic properties of the GLAD synthesized SiO<sub>x</sub>-ZnO heterostructure nanoclusters, Applied Physics A, Vol. 124, No. 3, pp.1-8., February, 2018.

### Book Chapter

1. Singh, N. K., & Rajkumari, R. (2019). Effect of annealing on metal-oxide nanocluster. In Concepts of Semiconductor Photocatalysis. IntechOpen.

### CONFERENCE:

1. R. Rajkumari, and N.K. Singh, "Electron Beam Evaporated WO<sub>3</sub> Thin Film as UV-A Photodetector" International Conference on Nano Technology for better living (ICNBL-2021)" held from 7th to 11th September 2021 at National Institute of Technology, Srinagar, India (Best oral presentation awarded).

2. Lusato Mashaka Majula, Matsuo Seiya, R. Rajkumari, Yoshimine Kato, "Fabrication of pn-junction by doping into a nano-crystalline Si paste made from poly-Si raw material" 33rd International Photovoltaic Science and Engineering Conference (PVSEC-33) from 3 to 17 November 2022, Nagoya Japan.

## Award and Honors

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- Recipient of MHRD Scholarship (Ph.D.)
- Best Oral Presentation at the International Conference on "Nanotechnology for Better Living" (NBL-2021) for the paper titled "Electron Beam Evaporated WO<sub>3</sub> Thin Film as UV-A Photodetector," organized by the National Institute of Technology Srinagar, from 7-11 September, 2021.

I hereby declare that all particulars stated above are true to the best of my knowledge and belief.

Thanking you

Date: 26/12/2024

Place: Mangalore

Signature



Rajshree Rajkumari