

## PROFILE

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|---------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Name                      | Dr. J.K. Radhakrishnan                                                                                                |
| Position & Affiliation    | Professor, Department of ECE,<br>& Principal Scientist, CRPF                                                          |
| Current Areas of Interest | Sensor Materials/Technology, Biomedical Devices, Semiconductor Materials/Devices, Nanomaterials, Life Support Systems |
| Email                     | jkradhakrishnan.ece@cambridge.edu.in                                                                                  |

### Educational Qualifications, Experience

|        |                                   |       |      |
|--------|-----------------------------------|-------|------|
| Ph. D. | Bharathiar University, Coimbatore | India | 1994 |
|--------|-----------------------------------|-------|------|

### Brief Profile: (write about yourself)

**(i) Previous Position Held** (till 31<sup>st</sup> May 2025): Associate Director, Scientist 'G', Head, Life Support Systems, DEBEL, DRDO, Bangalore-560075

**(ii) Organizations Worked in:**

- Solidstate Physics Laboratory (SSPL), DRDO, Delhi: Sept 1994 - May 2007,
- Defence Bioengineering and Electromedical Laboratory (DEBEL), DRDO, Bangalore: May 2007- May 2025

**(iii) National/ International Fellowships:**

- Senior Research Fellowship, June 1992 - Sept 1994, by Council of Scientific and Industrial Research (CSIR), New Delhi
- TRIL Fellow, Sept 2002 – Aug 2003, by International Centre for Theoretical Physics (ICTP), Trieste, Italy

**(iv) Post Doctoral Research / Collaborations**

- IMEM-CNR, Parma, Italy, Sept 2002- Aug 2003
- University of Arkansas, Fayetteville, USA, Jan 2008- Apr 2008

**(v) Areas of R&D**

- Compound Semiconductor Materials and Devices
- Sensor Materials and Technologies
- Nano Materials and Technologies
- Biomedical Devices for Health Monitoring
- Life Support Systems for the Crew of Combat Aircraft

**(vi) Ph.D. Guide Recognition**

- Recognized by Bharathiar University, Coimbatore as a guide to supervise students for Ph.D. in Physics.

**(vii) Positions Held**

- Project Lead, Project Director, Group Head- Sensor Technology, Divisional Head – Department of Biomedical Technology, Divisional Head- Department of Life Support Systems

## Publications/Patents:

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| Patents                         | <ul style="list-style-type: none"> <li>(i) Technical patent, 'A method of Fabricating an Oxygen Sensor Assembly', J.K.Radhakrishnan, S.S.Kamble and Nithila, Patent No: 586084, Date of Grant: 21/05/2026.</li> <li>(ii) Technical Patent, 'A method for Assembly of a Zirconia Amperometric Oxygen Sensor', J.K.Radhakrishnan, S.S.Kamble, Geetika, M. Kumara and Nithila, Application No: 202411074821, Date of Filing: 04/11/2024.</li> <li>(iii) Technical Patent, 'A method for Punching one or more Tapered Micro-holes on a Ceramic Substrate', J.K.Radhakrishnan, S.S.Kamble, Geetika, S.S.Pillai, Nithila and U.K.Singh, Application No: 201711026911, Patent No: 482156. Date of Grant: 13/12/2023.</li> <li>(iv) Technical Patent, 'A method and an assembly for Manufacturing Directional ECoG Electrodes', J.K.Radhakrishnan, A.N.Karthik, Nithila and U.K.Singh, Filed, Application No: 201711033111, Patent no. 440631, Date of Grant: 26/07/2023.</li> <li>(v) Technical Patent, 'A Needle Array Electrode for Monitoring Physiological Electrical Signals and a Method of Manufacturing', J.K.Radhakrishnan, V. C. Padaki, T. Bhuvana and G. U. Kulkarni, Application No: 1343/DEL/2014. Patent No 436712, Date of Grant: 30/06/2023.</li> <li>(vi) Design Patent 'Needle Array Electrode', J.K.Radhakrishnan, V. C. Padaki, T. Bhuvana and G. U. Kulkarni, Indian Design Patent; Design No: 260239, Date of Grant: 10/02/2014.</li> </ul> |
| Resent Significant Publications | <ul style="list-style-type: none"> <li>(i) Electrothermal Simulation and Experimental Validation of a Platinum Heater for Gas Sensors, S. Adam, Geetika, M. Kumara, Nithila, S. S. Kamble , and J. K. Radhakrishnan, IEEE Sensors Journal, 26 (2026) pp. 22149-56</li> <li>(ii) Effect of temperature modulation on the gas sensing characteristics of ZnO nanostructures, for gases O<sub>2</sub>, CO and CO<sub>2</sub>, J.K.Radhakrishnan, M.Kumara, Geetika, Sensors International, 2 (2021) p.100059.</li> <li>(iii) Growth of ZnO nanostructures: Cones, rods and hallow-rods, by microwave assisted wet chemical growth and their characterization, J.K.Radhakrishnan, M.Kumara, Geetika Ceramics International, 47 (2021) pp.5300–5310.</li> <li>(iv) A Novel, Needle-Array Dry-Electrode with Stainless Steel Micro-Tips, for Electroencephalography Monitoring, J.K.Radhakrishnan, S. Nithila, S.N. Kartik, T. Bhuvana, G.U. Kulkarni and U.K. Singh, J. Med. Devices, 2018, 12(4), 041001, September 2018.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                            |