

## CURICULAM VITAE



1. Name : Dr. PANKAJ KUMAR MISHRA  
2. Date of Birth : May 06, 1971  
3. Current Position and Address : Principal Scientist  
Mine Mechanization & Technology Development Deptt.  
CSIR-Central Institute of Mining & Fuel Research  
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### 4. Educational qualifications: (Graduation and above)

| Sl. No. | Degree/Certificate | Year of Passing | University/ Institute  | Subjects                     |
|---------|--------------------|-----------------|--|------------------------------|
| 1.      | Ph. D.             | 2000            | Indian Institute of Technology (BHU) (Erstwhile IT-BHU), Varanasi, India                 | Applied Physics              |
| 2.      | M. Sc.             | 1994            | Magadh University, Gaya, India   | Physics (Electronics)        |
| 3.      | B.Sc. (Hons)       | 1992            | Magadh University, Gaya, India   | Physics                      |
| 4.      | P G Diploma        | 2001            | CSSTE-AP (Affiliated from United Nation), Physical Research Laboratory, Ahmedabad, India | Space & Atmospheric Sciences |

### 5. Work Experience

| Sl. No. | Designation         | Institution/company  | From       | To         | Nature of work |
|---------|---------------------|--|------------|------------|----------------|
| 1.      | Principal Scientist | CSIR-Central Institute of Mining and Fuel Research, Dhanbad, India   | July-2012  | Continuing | R&D            |
| 2.      | Research Associate  | School of Information Technology and Engineering, Faculty of Engineering, University of Ottawa, Ottawa, ON, Canada | April-2009 | April-2010 | R&D            |
| 3.      | Senior Scientist    | CSIR-Central Institute of Mining and Fuel Research, Dhanbad, India   | July-2008  | July-2012  | R&D            |
| 4.      | Scientist-C         | CSIR-Central Institute of Mining and Fuel Research, Dhanbad, India   | July-2004  | July-2008  | R&D            |

### 6. Area of specialization:

- Design & Development of Remote Operation Technology for Hazardous Areas such as Underground Caverns
- RFID, WSN, IoT for hazardous areas
- Wireless Communication, Control and Monitoring for hazardous areas and through hazardous Materials

7. Honors/Awards received:

| Sl. No. | Title of the Award                    | Year    | Remark  |
|---------|---------------------------------------|---------|---|
| I.      | Award for filing Patent               | 2007-08 | This award was given by Central Institute of Mining and Fuel Research for filing a patent.                            |
| II.     | Award for filing Patent               | 2006-07 | This award was given by Central Institute of Mining and Fuel Research for filing a patent.                            |
| III.    | Best Research Paper Publication Award | 2006-07 | This award was given by Central Institute of Mining and Fuel Research for publication of best quality research paper. |
| IV.     | Dr. B. N. Desai Award                 | 2005-06 | This award was given from Indian Meteorological Society for quality research in meteorology.                          |
| V.      | Best Research Paper Publication Award | 2005-06 | This award was given by Central Mining Research Institute for publication of best quality research paper.             |
| VI.     | Best Research Paper Publication Award | 2004-05 | This award was given by Central Mining Research Institute for publication of best quality research paper.             |

8. Fellowships/Scholarships:

- Research Associateship, University of Ottawa, ON, Canada

9. No. of Research Publications:

- Papers in journals: 24
- In conference proceedings: 47
- Invited/key-note addresses: Nil
- List of best 05 publications:

- I). P. K. Mishra, Ron F. Stewart, Miodrag Bolic and Mustapha C. E. Yagoub (2014). RFID in Underground Mining Services Applications, IEEE Pervasive Computing, Vol. 13 (1), pp. 72-79, doi:10.1109/MPRV.2014.14.
- II). P. K. Mishra, Miodrag Bolic, Mustapha C. E. Yagoub and Ron F. Stewart (2012). RFID Technology for Tracking and Tracing Explosives and Detonators in Mining Services Applications, Journal of Applied Geophysics (Elsevier), Vol. 76 (1), pp.-33-43.
- III). L K Bandyopadhyay, S K Chaulya, P K Mishra, A Choure and B M Baveja (2009), Wireless Information and Safety System for Mines, Indian Journal of Scientific and Industrial Research, Vol. 68, pp.107-117.
- IV). K. Rupa Kumar, A. K. Sahay, K. Krishna Kumar, S. K. Patwardhan, P. K. Mishra, J. V. Revadekar, K. Kamla and G. B. Pant (2006), High Resolution Climate Change Scenarios for India for 21<sup>st</sup> century, Current Science, Vol. 90 (3), pp 334-345.
- V). P. K. Mishra and K. D. Misra (2003), Infrared-Raman-Regime Free-Electron Laser in the Presence of Helical wiggler and Guide Magnetic Fields: Analysis, J. Optical Society of America B, Vol. 20 (1), pp 27-36.

10. Number of Books Co-authored: 01

11. (a) No. of Patents granted/applied for: National: 11; US: 02; Europe: 01  
 (b) Technologies developed, Licensed and/or commercialized: 05

12. Foreign visits:

- University of Ottawa, ON, Canada, 2009-2010

13. Details of Professional memberships: Nil

14. Major contributions: (Max. 150 words)

As the team leader have indigenously developed the following equipment/systems:

- I). Remote Monitoring Device for Underground Coal Mine Gases
- II). Strata Deformation Indicator
- III). Pulse Monitoring System for Quick Rescue of Trapped Miners
- IV). Landslide Detection and Alerting system using Wireless Sensor Network
- V). Wireless Strata Information System for Underground Openings
- VI). Tracking and monitoring system for opencast mines
- VII). Wireless information and safety system for mines
- VIII). Proximity warning device for heavy earth moving machinery
- IX). Induction based hoist communication system
- X). Passive amplifier for leaky-feeder based underground communication
- XI). Detecting system for underground mine worker

As the team leader have indigenously developed the following software:

- I). LandMAPS: Landslide Monitoring and Prediction Software
- II). *MineTrack* - Miner's Tracking Software
- III). Wireless Sensor Network Software (WSN)

15. Technologies and Products/Services

- (i) Developed:13
- (ii) Licensed: 05
- (iii) Commercialized:05

16. Designs and Prototype Developed:

- I). Remote Monitoring Device for Underground Coal Mine Gases
- II). Strata Deformation Indicator
- III). Pulse Monitoring System for Quick Rescue of Trapped Miners
- IV). Landslide Detection and Alerting system using Wireless Sensor Network
- V). Wireless Strata Information System for Underground Openings
- VI). Tracking and monitoring system for opencast mines
- VII). Wireless information and safety system for mines
- VIII). Proximity warning device for heavy earth moving machinery
- IX). Induction based hoist communication system
- X). Passive amplifier for leaky-feeder based underground communication
- XI). Portable gas monitoring and power cut off system for underground mines
- XII). Uninterrupted power supply for underground environmental monitoring system
- XIII). Detecting system for underground mine worker

17. Honours and awards won for technological contributions or sociological impact of R&D: Nil

Signature