



1. Name: Dr. S. K. Chaulya

2. Date of Birth: 4 January 1969

3. Current Position and Address: (with E-mail & Phone no.)  
Scientist, Instrumentation Division  
CSIR-Central Institute of Mining and Fuel Research  
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4. Educational qualifications: (Graduation and above)

| Sl. No. | Degree/<br>Certificate | Year of<br>Passing | University/<br>Institute | Subjects |
|---------|------------------------|--------------------|--------------------------|----------|
| I       | B.Tech.                | 1991               | NIT, Karnataka           | Mining   |
| ii      | M.Tech.                | 1993               | IIT, BHU                 | Mining   |
| iii     | Ph.D.                  | 1997               | IIT, BHU                 | Mining   |

5. Work experience:

| Period                     | Designation | Institution/company                        | Nature of work  |
|----------------------------|-------------|--|---|
| 01.03.1993<br>-16.11.1993  | Fellow      | CSIR-CIMFR,<br>Dhanbad (erstwhile<br>CMRI) | Research and Development on mining<br>environment and technology  |
| 16.11.1993<br>- 15.11.1998 | Scientist B | CSIR-CIMFR,<br>Dhanbad (erstwhile<br>CMRI) | Research and Development on mining<br>environment, environmental impact<br>assessment and preparation of<br>environmental management plan |
| 16.11.1998<br>- continue   | Scientist C | CSIR-CIMFR,<br>Dhanbad                     | R&D on mine environment monitoring,<br>assessment, management, and<br>mining instrumentation and<br>communication                         |

6. Area of specialization:

Main fields of research are mining instrumentation, and environmental monitoring, assessment and management for mining and allied industries with special reference to:

- Environmental impact assessment and environmental management plan studies,
- Air pollution monitoring, modelling, assessment and management,
- Reclamation of overburden and mining waste land, and
- Instrumentation, monitoring, control and communication in mines.

7. Honors/Awards received:

- CSIR-CIMFR Whitaker Golden Jubilee Award, 1997** - This award was given by Central Mining Research Institute for outstanding contribution on R&D related to mining industry.

- ii) Following awards were given by CSIR-CIMFR for publication of best quality SCI cited international papers:
- (a) **Best Research Paper Publication Award, 2000.**
  - (b) **Best Research Paper Publication Award, 2001.**
  - (c) **Best Research Paper Publication Award, 2002.**
  - (d) **Best Research Paper Publication Award, 2003.**
  - (e) **Best Research Paper Publication Award, 2004.**
  - (f) **Best Research Paper Publication Award, 2005.**
  - (g) **Best Research Paper Publication Award, 2006.**
  - (h) **Best Research Paper Publication Award, 2007.**
- iii) Following awards were given by CSIR-CIMFR for filing patents:
- (a) **Award for filing Patent, 2003.**
  - (b) **Award for filing Patent, 2005.**
  - (c) **Award for filing Patent, 2007.**
  - (d) **Award for filing Patent, 2008**

8. Fellowships/Scholarships:

9. No. of Research Publications:

- Papers in journals: 71
- In conference proceedings: 76
- Invited/key-note addresses: 2
- List of best 05 publications:
  - i) **Chaulya, S.K.**, Chakraborty, M.K., Ahmad, M., Singh, R.S., Bondyopadhyay, C., Mondal, G.C. and Pal, D. (2002), "Development of empirical formulae for determination of emission rate from various opencast coal mining operations", *Water, Air, and Soil Pollution*, **140**: 21-55.
  - ii) **Chaulya, S.K.** (2003) "Air quality standard exceedance and management in an Indian mining area", *Environmental Conservation*, **30**(3): 266-273.
  - iii) **Chaulya, S.K.** (2004) "Spatial and temporal variations of SPM, RPM, SO<sub>2</sub> and NO<sub>x</sub> concentrations in an opencast coal mining area", *Journal of Environmental Monitoring*, **6**(2): 134-142.
  - iv) **Chaulya, S.K.** (2005) "Air quality status of an opencast mining area in India", *Environmental Monitoring and Assessment*, **105**(1-3): 369-389.
  - v) Bandyopadhyay, L.K., **Chaulya, S.K.** and Mishra, P.K. (2009) "*Wireless Communication in Underground Mines: RFID-based Sensor Networking*", Springer, USA, 477 pp.

10. Number of Books authored/edited: 2

11. (a) No. of Patents granted/applied for: National 16 including 2 International patents  
(b) Technologies developed, Licensed and/or commercialized: 8

12. Foreign visits:

13. Details of Professional memberships:

- (i) Mining, Geological and Metallurgical Institution of India;
- (ii) Indian Society of Rock Mechanics and Tunneling;
- (iii) Computer Society of India;
- (iv) Institution of Engineers;
- (v) World Wide Fund for Nature;
- (vi) Scientific Education and Research Council; and
- (vii) Small Scale Mining Society of India.

14 . Major contributions: (Max. 150 words)

Published 2 books, patent application filed for the 16 developed technologies, and copyrighted 6 software. As a Chief Investigator of the major R&D projects sponsored by Government of India following technologies have been developed and commercialized:

- a) **A microprocessor based multi-channel intrinsically safe real-time environmental monitoring system**[Patent No. 149DEL2003, transfer of technology (ToT) to M/s Jagdamba Co., Dhanbad]
- b) **Strata movement warning system for underground mines** [1239DEL2005, ToT to M/s Pranay Enterprises, Hyderabad]
- c) **Trapped miner locator** [0610/DEL/2007, ToT to M/s Pranay Enterprises, Hyderabad]
- d) **Wireless information and safety system for underground mines** [Indian: 0777DEL2008, Foreign: WO/2010/122570, US: US2012/0127924A1 and PCT No. PCT/IN2009/000199, ToT to M/s Safe Instruments, Mohali]
- e) **Tracking and monitoring system for opencast mines** [Indian: 0832DEL2009, US: US8816850B2 and PCT No. PCT/IN2010/000196, ToT to M/s Safe Instruments, Mohali]
- f) **Proximity warning device for heavy earth moving machinery**[1841DEL2009, ToT to M/s Safe Instruments, Mohali]
- g) **Coal dust collecting and briquetting system**[2619/DEL/2010, ToT to M/s TATA Motors Limited, Mumbai]
- h) **Mine transport surveillance system** [2107/DEL/2015, ToT to M/s Dadhwal Weighing Instrument, Dhanbad]

15. Technologies and Products/ Services

- (i) Developed: 12
- (ii) Licensed: 8
- (iii) Commercialized: 8

16. Designs and Prototype Developed: 12

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

Received CSIR-CIMFR Whitaker Golden Jubilee Award, 1997

Signature