

Bio-Data

1. Name: **DR. M. SUNDARARAJAN**

2. Date of Birth: 05.09.1963

3. Current Position and Address: Sr. Principal Scientist
(with E-mail & Phone no.)

Natural Resource & Modeling
(Natural Resource & Environment Management),
CSIR-Central Institute of Mining & Fuel Research,
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4. Educational qualifications: (Graduation and above)

S. No.	Degree/ Certificate	Year of Passing	University/ Institute	Subjects
I	B.Sc.	1986	BU, Trichy	Maths
II	M.Sc.	1989	BU, Trichy	Maths
III	M.Phil.	1990	AU, Annamalainagar	Maths.
IV	Ph.D.	2004	ISM, Dhanbad	Applied Maths

5. Work experience

Designation	Institution/company	From	To	Nature of work
Sr. Principal Scientist	CSIR-CIMFR, Dhanbad	17.03.2013	Continued	R & D
Principal Scientist	CSIR-CIMFR, Dhanbad	17-07-2007	17.03.2013	R & D
Scientist - El	CSIR-CIMFR, Dhanbad	17.03.2002	17.03.2007	R & D
Scientist 'C'	CSIR-CIMFR, Dhanbad	17.03.1997	17.03.2002	R & D
Scientist 'B'	CSIR-CIMFR, Dhanbad	17.03.1992	17.03.1997	R & D

6. Area of specialization: **Natural Resource and Environmental Management & Modeling**

7. Honors/Awards received:

- i. **Appointed as Joint Secretary of** Indian Institute of Mineral Engineers during 1996 – 1999.
- ii. **External Examiner** for Ph.D. Thesis of Pondicherry, Bharathidasan, Mononmanium Sundaranar and Madras, Mother Theresa Universities
- iii. **Guide and Co-guide** for Ph.D (12), M.Phil. (1), M.Tech (3) and M.Sc. (2) thesis and dissertation
- iv. **Reviewer** for National and International Journals (Journal of Environmental Monitoring & Assessment, Journal Environmental Modeling, Pakistan Journal of Statistical and Operation Research)
- v. **Expert for ISM, Dhanbad** as Question paper setter for B.Tech/M.Tech in Environmental Modeling

8. Fellowships/Scholarships: -

9. No. of Research Publications:

- ❖ Papers in journals : 11
- ❖ In conference proceedings : 58
- ❖ Invited/key-note addresses : 17
- ❖ List of best 05 publications :

- i. Singh, G., Gupta, S.C., Kumar, R., and **Sundararajan, M.** (2007), *Mathematical Modelling of Leachate from Ash Ponds of Thermal Power Plants*, Environmental Monitoring and Assessment, Vol. 130, Nos. 1-3, pp. 173-185.
- ii. Singh, G., Gupta, S.C., Kumar, R., and **Sundararajan, M.** (2007), *Dispersion Modeling of Leachates from Thermal Power Plants*, Journal of Environmental Engineering, Vol. 133, no.12, pp. 1088 – 1097.
- iii. **Sundararajan, M.** and Anand Mohan (2010), Intl. Jl. of Engineering, Science & Technology (ISSN -0975-5462), p.6202-6206, vol.2, no.11 2010.
- iv. Sen, P.K., Das, L.G., Halder, B., **Sundararajan, M.** and Chaterjee P.K.(2013), Effect of Nozzle Velocity, Nozzle Angle and Standoff Distance on the Dredge Output During Placer Mining, IOSR, Journal Of Applied Geology, and Geophysics ,(ISSN: 2321-0982), Vol.1, Issue 3, 1-6.
- v. **Sundararajan, M.**, Chakrabarty, G. and Mohan, A. (2014), Development of River Quality Management (RQM) Information System for River Stretches Blending with Multi-Industrial Effluents, International Journal of Engineering Research (ISSN:2319-6890), Volume No.3, Issue No.12, pp : 769-773.

10. Number of Books authored/edited: 4

11. (a) No. of Patents granted/applied for: -

(b) Technologies developed, Licensed and/or commercialized: 4

12. Foreign visits: -

13. Details of Professional memberships:

1. Life Member of the Indian Institute of Mineral Engineers
2. Fellow Member of Trinity (An International Foundation for Research)
3. Life Member of Vigyan Bharati Jharkhand
4. Member of the Institute of Small Scale Mines

14 . Major contributions: (Max. 150 words)

Being a mathematician, when I was initially placed in the Environment Management Group, I developed many mathematical models and computer programmes for environmental applications such as water, land and air quality assessment and prediction studies in the vast areas of environment. The models and software are being used in different consultancy as well as R&D Projects. Later, I was placed in Department of Beach Placer Mining, I learned origination of placer minerals and I put all my efforts to understand the sedimentological characteristics with respect to varying complex marine and geomorphological environment to find appropriate mathematical tools for applying Ground Penetrating Radar (GPR) for assessing the potentiality of the coastal zones with respect to its richness and quantifying various placer minerals approximately.

A project entitled Carrying Capacity of Beach Placer Mining under 10th Five Year Plan of CSIR-Network Project, a case study was carried out in connection with a sub-task entitled Spatial Modeling of Placer Deposits Using Ground Penetrating Radar, a task of of quantifying the placer minerals using GPR technique was taken up. The study has revealed that the results are consistent and the mineralogist can adopt the proven GPR technique for assessing the potentiality of the coastal zones before commencing the mining activities whether the selected area is economically viable or not or it can be prioritized for mining activities based on the various classifications of the coastal zones. Further, GIS&RS based reservoir modeling has been developed which would be useful for sustainable management of water resources in the country. Thus, I have learned to apply to explore the natural resource and manage in sustainable manner.

15. Technologies and Products/Services

- | | | |
|-------|----------------|-----|
| (i) | Developed | : 4 |
| (ii) | Licensed | : - |
| (iii) | Commercialized | : 2 |

16. Designs and Prototype Developed: 1

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



Signature