1. Name : Dr. Raja Sen

2. Date of birth : 21.05.1957

3. Designation : Principal Technical Officer, Gr. III(7)
rajasen_cimfr@rediffmail.com
0326-2388218(O)
9430150882 (M)

4. Academic qualifications:

Degree	University	Year	Class
Ph.D. , Chemistry	B.H.U.	2011	-
M.Sc. , Chemistry	Ranchi	1991	1st
A.I.C. (by Examination.)	Inst. of Chemists (India)	1985	1st
B.Sc.	Ranchi	1979	2nd (Distn. in Geol.)

8. Work Experience:

Designation	Instution / Company	From	To	Nature of work
Chemist	Eskaps(India) Pvt. Ltd	1979	1981	Analytical Services.
Shift Chemist	Basudha Udyog	1981	1982	Quality Control
	CFRI/CIMFR	1982	Contd.	R&D, Product Development and Analytical Services

6. Area of Specialization:

- FTIR Studies of coal.

- Basic studies on Coal Science including Coal Chemistry, Constitution- Behavior Relationship, Chemical & Thermal Modification of coal.
- Studies on Coal oxidation including Reagent mediated wet and dry oxidation andLowTemperature aerial oxidation & Spontaneous Combustion of Coal.

- Waste utilization by the way of fly ash and used oil utilization.

7. Honours/Awards received: CFRI Golden Jubilee Award for Technology Development for the year 1996-97

8. Fellowships/Scholarships: Nil

9. No. of Reserch Publications:

1. **Papers in journals: 11**
2. **Papers in Conference Proceedings: 6**
3. **Invited/Key-note addresses: nil**
4. **List of best 5 publications**

1. Aerial oxidation of coal-analytical methods, instrumental techniques and test methods: A survey.
   Raja Sen, Srivastava Sunil K., Singh and Madan Mohan Singh
   Indian Journal of Chemical Technology, 16(2) 2009 103-135

2. Role of Instrumental Techniques in Studies on Wet Oxidation of Coal: A Review
   Sen R, Srivastava SK and Madan M Singh
   Indian Journal of Chemical Technology 12 2005 719

3. Influence of moisture on the infra red spectrum of lignite in KBr matrix.
   A.K. Bandopadhyay GS Murty, R.Sen and P.Bhattacharya
   Spectrochemica Acta A, 45A(4) 1989 511

4. Modified Granular Active Carbon : A Carrier for Recovery of Nickel Ions from aqueous waste- Sathpathy D, Natrajan GS and Sen R
   Adsorption Science and Technology 22 (4) 2004 285 (U.K.)

5. Role of the Nitro Group on Coal Solubilization in Aqueous Organic Solvents
   Debapriya Choudhury, Samar S. Choudhury, Raja Sen, Joy Mukherjee, Gora Ghosh, and Sunil K. Srivastava,
   Energy & Fuels (ACS) 2007, 21, 1006-1013

10. Number of Books authored/edited: Nil

11. (a) No. of Patents: Ten
(b) Technologies developed, Licensed and/or commercialized: Three

12. Foreign visits: Nil

13. Details of Professional Memberships: Life Member, Indian Carbon Society Membership No. LM-205

14. Major Contributions:

- Method development of determination of Alpha Quartz in Coal and other materials by FT IR spectroscopy as active team member.
- Determination of Alpha Quartz in Coal for various thermal power plants on routine basis.
- Method development of determination of Alpha Quartz in respirable fraction of Air borne dust in Mines as active team member.
- FT-IR Characterization of various materials.
- Advanced studies on coal oxidation by DRIFT spectroscopy.
- Further studies on Nitric Acid oxidation of coal
- Process development of grease preparation from waste transformer oil.
- Development of fly as based hard scouring powder and securing US patent for the same.
- Development of novel carrying case for dust loaded membrane filters.
- Development of novel occupationally safe dust generating device for preparation of standards.

15. Technologies and Product/Services

- **Developed: 5 (3 products and 2 services)**
- **Licensed: Nil**
- **Commercialized: Nil**

16. Designs and Prototype developed: Two

17. Honours and awards won for technological contributions or Sociological Impact of R&D :

CFRI Golden Jubilee Award for Technology Development for the year 1996-97

Signature