1. Name: Dr. R EBHIN MASTO

2. Date of Birth: 12 May 2016

3. Current Position and Address:

(with E-mail & Phone no.)

Senior Scientist/ Asst. Professor (AcSIR),

Environmental Management Division,

CSIR Central Institute of Mining and Fuel Research (Digwadih Campus),

CSIR, (Ministry of Science & Technology),

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4. Educational qualifications: (Graduation and above)

Sl. No	Degree/ Certificate	Year of Passing	University/ Institute	Subjects
1	B.Sc.	1998	Tamil Nadu Agricultural University, Coimbatore	Agriculture
2	M.Sc.	2000	Acharya NG Ranga Agricultural University, Hyderabad	Soil Science & Agricultural Chemistry
3	PhD	2004	Indian Agricultural Research Institute, New Delhi	Soil Science & Agricultural Chemistry

5. Work experience

	Designation	Institution/company	From	To	Nature of work
1	Lecturer	Birla Institute of Technology, (Noida & Jaipur Centre)	01-04-2004	06-01-2005	R&D
2	Scientist-B	CSIR-Central Fuel Research Institute, Dhanbad	20-01-2005	19-01-2008	R&D
3	Scientist- C	CSIR-Central Fuel Research Institute, Dhanbad	20-01-2008	19-01-2011	R&D
4	Senior Scientist (E1)	CSIR-Central Fuel Research Institute, Dhanbad	20-01-2011	Till date	R&D

1. Area of specialization: Soil quality, carbon sequestration, fly ash, biochar, exposure risk assessment, poly cyclic aromatic hydro carbons
2.

7. Honors/Awards received:

1. *CSIR Young Scientist Award 2012* for outstanding contributions to the study of soil quality in coal industrial areas, fly ash and soil carbon sequestration through biochar.
2. *DST Young Scientist* – Project proposal on 'Soil Carbon Sequestration" submitted under the Fast Track Scheme for Young Scientists, Department of Science & Technology, New Delhi 2008.
3. *CSIR ISTAD & DST Travel Support* for attending the conference 'ISES 2009 Annual Conference: Transforming Exposure Science in the 21st Century" Minneapolis, USA, 5 days (1-5 Nov, 2009).
4. *ISES Travel Award*, for attending the conference "21st Annual ISES conference: Advancing Exposure Science for Environmental Health" to be held at Baltimore, Marryland, USA, from 23-27 October, 2011, International Society for Exposure Science (ISES), USA 2011.

5. Best outgoing student of Indian Agricultural Research Institute (2004) for overall outstanding performance in PhD programme from IARI, New Delhi, awarded at the 43rd Convocation held on February 11, 2005.
6. SunitiBalaRaichaudhuri Medal (2004-05) for academic excellence in PhD programme in the Division of Soil Science and Agricultural Chemistry, IARI, New Delhi.
7. Dr. S. P. Raichaudhuri Gold Medal- 2004-05, for best PhD thesis, Delhi Chapter of the Indian Society of Soil Science, New Delhi.
8. Prof. V.V Kumara Sastry Memorial Gold Medal- (2000-02) for securing the highest OGPA in the department of Soil Science, Acharya N. G. Ranga Agricultural university, Hyderabad, awarded at the 34th Annual convocation held on 3rd April 2002.
9. Best Doctoral Research Presentation Award (Indian Society of Soil Science- North zone)-2004, second prize- awarded by HISAR Chapter of the Indian Society of Soil Science.
10. FACT Medal- (1994-2000) for securing the highest OGPA in the courses in the department of Soil Science and Agricultural Chemistry, agricultural College and Research Institute, Killikulam, Tamil Nadu Agricultural University.
11. The biography has been selected for inclusion in the *"Marguis Who's Who in the World 2011"*
12. Best paper award- for the paper 'Phosphorus adsorption, fixation and fractions in fly ash and ash amended acid soil', presented in the 'Fly Ash India-2005, International Congress' held at New Delhi during Dec.4-7, 2005.
13. Best Hindi paper award -2005. Central Fuel Research Institute- for the paper 'Coal washeryevam Damodar jalkajaiviyaupcharevam coal washerykebahisravkamridaevampaudhon par prabhavkagunatmakaddhyan' Seminar on JalSanrakshan (Water Consevation), DVC Training Institute, Chandrapura, Bokaro, 01-02 March, 2005.
14. Best Poster Presentation Award-2002, - Indian Society of Soil Science for the paper on "Molybdenum in soils of high altitude areas of Andhra Pradesh", awarded at the 67th annual Convention of the Society, on 14th November 2002.

8. Fellowships/Scholarships:

Associate Fellow, National Academy of Agricultural Sciences, New Delhi
ICAR Senior Research Fellowship (Rank-01) based on the All India Competitive Examination & Interview conducted by Indian Council of Agricultural Research, New Delhi for pursuing Ph.D

ICAR Junior Research Fellowship (Rank-11) based on the All India Competitive Examination conducted by Indian Council of Agricultural Research, New Delhi for pursuing MSc.

9. No. of Research Publications:

- Papers in journals: 51
- In conference proceedings: 55
- Invited/key-note addresses: 02
- List of best 05 publications:

1. Masto RE, Sarkar E, George J, Jyoti K, Dutta P, Ram LC (2015) PAHs and potentially toxic elements in the fly ash and bed ash of biomass fired power plants. Fuel Processing Technology, 132, 139-152
2. RE Masto*, MA Ansari, J George, VA Selvi, LC Ram. 2013. Co-application of biochar and lignite fly ash on soil nutrients and biological parameters at different crop growth stages of Zea mays. Ecological Engineering. 58, 314-322.
3. S. Sinha, R. E. Masto*, L. C. Ram, V. A. Selvi, N. K. Srivastava, R. C. Tripathi, Joshy George. (2009). Rhizosphere soil microbial index of tree species in a coal mining ecosystem. Soil Biology and Biochemistry, 41, 1824-1832.
4. Ram LC, Masto RE (2014) Fly ash for soil amelioration: A review on the influence of ash blending with inorganic and organic amendments. Earth Science Reviews, 128, 52-74 (Review article).
5. Masto, R.E.,Chhonkar, P. K., Singh, D., Patra A. K. (2006). Changes in soil biological and biochemical characteristics in a long-term field trial on a sub-tropical Inceptisol. Soil Biology and Biochemistry, 38: 1577-1582.

10. Number of Books authored/edited:

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

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

12. Foreign visits:

Attended the following events

1. ISES 2009 Annual Conference: Transforming Exposure Science in the 21st Century" Minneapolis, USA, November 1to 5, 2009
2. International Annual Meetings: Soil Science Society of America, San Antonio, Texas, USA, 17-20 Oct, 2011.
3. The 21st Annual ISES conference: Advancing Exposure Science for Environmental Health held at Baltimore, Marryland, USA, 23-27 Oct 2011.
4. Training on ICP 6000 Application user training at Thermo Fisher Scientific, Cambridge, United Kingdom from 9 – 13 September 2013.

13. Details of Professional memberships:

Life member, Indian Science Congress Association

Life member, ASCI

Annual Member: Indian Society of Soil Science

14 . Major contributions: (Max. 150 words)

	Research title	**Key achievements**
1	Soil carbon sequestration	*Soil is one of the major C pools in global C cycle.* ❖ Stable soil carbon materials were prepared by converting waste biomass into biochar. The char preparation process was optimized for maximizing stable C without compromising the char yield (300 – 400 ° C for 30 min). ❖ Notorious weeds like *Eichornia, Parthenium, Lantana*, etc. were converted to biochar. The toxic chemical, ambrosin present in *Parthenium* was degraded and the resultant biochar is free from toxins. ❖ Long term carbon stability experiments showed that the biochar is highly stable in different types of soil. ❖ Life cycle assessment: net C conservation was higher for Lantana (7.0 t CO2e/ha) followed by wheat straw (6.43), and Parthenium

		(3.9). ❖ Carbon storage in reclaimed coal mine spoil was higher for *Cassia, Dalbergia sissoo, Acacia.* ❖ Rhizosphere soil microbial index was developed for identification of tree species best suited for reclamation of coal mine spoil. Rhizosphere soil N and 'carbon index' are the sensitive indicators for carbon sequestration in mine spoil. ❖ Fly ash acts as a catalyst for stabilization of carbon in soil.
2.	Coal utilisation and human health	❖ Data base on soil heavy metals and PAHs in 6 different coal fields of the country. Exposure risk studies showed that these soils are non-toxic as compared to other industrial soils.
3.	PAH emission	❖ Base line data on PAH emission from coal fired thermal power plants. ❖ Traffic density and the corresponding automobile PAHs emission were characterized for Jharia Coalfield.
4.	Fertilizer development	❖ Combustion wastes from wide varieties of biomass power plants were screened and the potential plants suitable for fertilizer preparation were identified. Process developed in a lab scale unit.

15. Technologies and Products/ Services

(i) Developed:

(ii) Licensed:

(iii) Commercialized:

16. Designs and Prototype Developed:

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

Signature