

BRIEF BIO-DATA

1. Name: Dr.DEVENDRA KUMAR SAKHARE

2. Date of Birth: 12/06/1968

3. Current Position and Address (Include Email ID and Contact Number):

Scientist-G & Head-Fuel Science Division, CIMFR Nagpur Research Centre

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4. Educational qualifications: (Graduation and above)

Sl. No.	Degree	Year of Passing	University/Institute	Subject
1	B.E.	July-1993	NIT Raipur (CG)	Mechanical Engineering
2	M.E.	July-1996	NIT Raipur (CG)	Energy Systems & Pollution (Mechanical Engg)
3	Ph.D	April-2015	NIT Raipur (CG)	Mechanical Engineering

5. Work experience:

Sl. No.	Name of Post	Name of the Organization	Period From To	Nature of work
1.	Junior Research Fellow	Regional Research Laboratory, Bhopal (M.P.)	14/09/1994 to 31/12/1994	Wear properties of steels, metallographic study of farm implements.
2.	Engineer (E&M)	Coal India (Central Coalfield Ltd, Piparwar washery)	14/01/1997 to 31/10/1998	Mechanical Maintenance of Coal Handling Plant & Coal Washery.
3.	Scientist Gr.IV(1)	CSIR-Central Institute of Mining & Fuel Research, Dhanbad	30/11/1998 to 29/11/2002	Refrigeration & Air conditioning, FT-Synthesis, Energy Management.
4.	Scientist Gr.IV(2)	CSIR-Central Institute of Mining & Fuel Research, Dhanbad	30/11/2002 to 29/11/2008	FT- Synthesis of Liquid hydrocarbon from Syngas, DeNO _x of Diesel exhausts gases.
5.	Sr. Scientist	CSIR-Central Institute of Mining & Fuel Research, Nagpur	30/11/2008 to 29/11/2012	Dry coal beneficiation, Coal washability, Coal sampling, LASER Coal gasification.
6.	Principal Scientist	CSIR-Central Institute of Mining & Fuel Research, Nagpur	30/11/2012 to 29/11/2017	Dry coal beneficiation, Coal washability, Coal sampling.
7.	Senior Principal Scientist	CSIR-Central Institute of Mining & Fuel Research, Nagpur	30/11/2017 to 29/11/2022	Coal sampling, Dry coal beneficiation, Coal washability.
8.	Scientist - G	CSIR-Central Institute of Mining & Fuel Research, Nagpur	30/11/2022 to Till date	Hyperspectral Imaging for coal quality prediction, Dry coal beneficiation

6. Work Area(s)/ Specialization: Coal Science & Technology

7. Major contributions: Given a new technology for Dry Coal Beneficiation (Coal winnowing technology). Proposed and experimented an innovative concept for instant fuel gas production from coal by using pulsed CO₂ LASER. Worked as project leader/ Co-PL/ Member in institute's Mega coal sampling project in which contributing in various ways like manpower management, site visit for coordination, financial management etc. Worked for Ministry of Coal sponsored project on development of Hyperspectral imaging technique for instant prediction of coal quality parameters.

8. No. of Research Publications:

- Papers in Journals: 09 (Nine)
- In conference proceedings: 11 (Eleven)
- Invited lectures delivered: 03 (Three)
- List of best 05 publications:

Sl. No.	Title of paper	Authors	Name of journals
1.	Studies of DeNOx catalytic activity over some transition metal oxide catalysts	DevendraK.Sakhre , Shobha Lata Sinha and Shripal Singh	Research Journal of Chemistry & Environment, Vol 18 (9) Sept 2014, pp 11-16.
2.	Coal winnowing: An innovative technique for Dry Coal Beneficiation	D.K. Sakhare , S.P. Singh, R.K. Acharya, R.L. Katley, A.L.V. Prasad and Pragya Chayande	Journal of Coal preparation Society of India, Vol-10, May-2018, No-28, pp 3-13.
3.	Forecasting sector-wise electricity consumption for India using various regression models	Renuka Rekhade, D. K.Sakhare	CURRENT SCIENCE, VOL. 121, NO. 3, 10 AUGUST 2021, pp 355-371.
4.	Development of Coal Quality Exploration Technique based on Convolutional Neural Network and Hyperspectral Imaging	Swati Hira, Manoj B.Chandak, D.K.Sakhare and L.K.Sahoo	International Journal of Oil, Gas and Coal Technology, (Inder Science publisher), Published Online: February 18, 2025, pp 203-234 https://doi.org/10.1504/IJOGCT.2025.144534
5.	Proximate analysis-based prediction of gross calorific value of Indian coals using a Geochemical Feature Embedding Network (GFEN) and XGBoost regressor	Devendra Kumar Sakhare , Swati Hira, Lalit Kumar Sahoo, Seema Topno, Rajendra Kuar Vishwakarma, Manoj Kumar Sethi, ALV Prasa, Rajesh Katley, Pragya Chayande, Abhishek Singh, Devi Prasad Painkray, Sumitra Giri & Karri Tirumala Venkatesh	International Jornal of Coal Preparation & Utilization, https://doi.org/10.1080/19392699.2026.2710722 ; published online on 03.08.2026

9. List of 5 Major Contract/ R&D Projects:

SI No	Title of project	Sponsored by	Project Cost in INR	Start & closing date	Role
1.	Instant Fuel gas production from coal by pulsed CO ₂ LASER	CSIR-EMPOWER	15.20 Lakh	15/09/2010 14/09/2012	Project Leader
2.	Design & development of coal winnowing system for dry beneficiation of coal by CFD modelling & simulation, Phase-I	SSRC-Ministry of Coal	1.824 Crore	01/08/2011 31/07/2013	Project Leader
3.	Optimization of various parameters of Lab scale Coal Winnowing System, Phase-II	SSRC-Ministry of Coal	18.55 Lakh	15/12/2015 14/09/2016	Project Leader
4.	Development of Coal Quality Exploration Technique based on Convolutional Neural Network and Hyperspectral Images	SSRC-Ministry of Coal	1.03 Crore	15/03/2021 14/03/2022	Project Leader
5.	Indigenous development of NIR spectrometer for instant prediction of coal quality parameters	SSRC-Ministry of Coal	1.10 Crore	01/09/2023 31/08/2025	Project Leader

10. (a) Name of Patents/Copyrights applied /granted/commercialized: 03 (Three)

SI.No.	Title	Inventors	Status
1.	A process for reduction of overall ash percentage of coal. CSIR NF no: 0117NF2015/IN, Indian patent office application No. 1977DEL2015, filed on 01.07.2015	D.K.Sakhare, S.P.Singh. R.K.Acharya, Rahul Mehatre, Swati Singh	Filed in India, Patent no- 457040, Granted on 05/10/2023.
2.	A system & method for determining quality parameters of a coal sample using Hyperspectral imaging	Manoj Chandak, Swati Hira, D.K.Sakhare, L.K.Sahoo and Achyut Ghatak	Filed in India on 25.12.2024
3.	A software for prediction of coal GCV & Grades with the inputs of only air-dried ash & moisture values	Devendra Kumar Sakhare, Swati Hira, Lalit Kumar Sahoo, Seema Topno, Rajendra Kuar Vishwakarma, Manoj Kumar Sethi, ALV Prasad, Rajesh Katley, Pragya Chayande, Abhishek Singh,	Filing date: 29/01/2026, File no: IPR/CIMFR/CRA/01/11(01)

		Devi Prasad Painkraye, Sumitra Giri & Karri Tirumala Venkatesh	
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(b) Technologies/Products /knowhow/Services developed:

Coal Winnowing Technology, Hyperspectral Imaging technology for coal quality prediction

11.Honors/Awards/Recognitions/Fellowships/Scholarships/Professional

Memberships received: CSIR-NET & GATE qualified; Member, Solar Energy Society of India.

12. Societal Contributions: Worked in Institutes Mega coal sampling project which is contributing towards Thermal power stations efficiency enhancement & reducing the GHG emissions, which ultimately reducing the electricity generation cost of thermal power stations. Development of Coal winnowing system has advantages like low energy consumption for processing coals for ash reduction, No water pollution.