

## Biodata

1. Name : **Dr. Sudarshan Singh Rathore**
2. Date of Birth : 25<sup>th</sup> November 1987
3. Current Position : Scientist
4. Address : Natural Resource Management Group  
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### 7. Educational qualifications

S. No.	Degree	Year	University	Subject
1.	Ph. D.	2018	SASTRA University Thanjavur, Tamil Nadu, India	<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• Immunology</li> <li>• Medical Microbiology</li> </ul>
2.	M. Phil	2013	Karunya University Coimbatore, Tamil Nadu, India	<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• (Biofuel Production)</li> </ul>
3.	M. Sc.	2011	VIT University Vellore, Tamil Nadu, India	<ul style="list-style-type: none"> <li>• Applied Microbiology</li> <li>• (Bioremediation)</li> </ul>
4.	B. Sc.	2009	Devi Ahilya Vishva Vidyalaya (DAVV) Indore, Madhya Pradesh, India	<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• Chemistry</li> <li>• Computer Science</li> </ul>
5.	PMP Certification	2020	Project Management Institute (PMI) USA	<ul style="list-style-type: none"> <li>• Project Management Professional certification</li> </ul>

### 8. Work experience

S. No.	Designation	Institution/ Company	From	To	Nature of work
1.	Scientist	CSIR-Central Institute of Mining and Fuel Research, Dhanbad, Jharkhand, India	3 <sup>rd</sup> November 2021	Till date	<ul style="list-style-type: none"> <li>• Bioremediation</li> <li>• Biomagnification</li> <li>• Soil Microbiology</li> <li>• Biomolecule extraction from Mines</li> </ul>
2.	Lead Engineer	HCL Technologies, Chennai, Tamil Nadu, India	08 <sup>th</sup> March 2021	29 <sup>th</sup> October 2021	<ul style="list-style-type: none"> <li>• Medical Device Validation</li> <li>• FDA and EU regulations for medical devices</li> </ul>
3.	Senior Research Associate & Manager	Virchow Biotech Pvt. Ltd., Hyderabad, Telangana, India	15 <sup>th</sup> June 2020	6 <sup>th</sup> March 2021	Nutraceutical products <ul style="list-style-type: none"> <li>• Formulation</li> <li>• Validation</li> <li>• Analysis and Testing</li> </ul>

4.	Scientist	Farcast Biosciences (formerly known as MITRA Biotech), Bangalore, Tamil Nadu, India	1 <sup>st</sup> April 2020	30 <sup>th</sup> April 2020	<ul style="list-style-type: none"> <li>• Cancer biology</li> <li>• Personalized cancer treatment</li> <li>• Immunomodulation</li> <li>• 3D human tissue culture model</li> <li>• Organoid tissue culture model</li> </ul>
5.	Post-Doctoral		1 <sup>st</sup> April 2019	1 <sup>st</sup> April 2020	
6.	Senior Research Associate		12 <sup>th</sup> November 2018	1 <sup>st</sup> April 2019	
7.	CSIR-Senior Research Fellow	SASTRA University, Thanjavur, Tamil Nadu, India	1 <sup>st</sup> May 2018	22 <sup>nd</sup> October 2018	<ul style="list-style-type: none"> <li>• Medical Microbiology</li> <li>• Immunology</li> <li>• Animal Model</li> <li>• Cell Culture model</li> <li>• Drug Discovery</li> </ul>
8.	Junior Research Fellow		22 <sup>nd</sup> August 2014	1 <sup>st</sup> May 2018	

**9. Area of specialization:**

- Bioremediation/ Biomagnification; Impact of coal mining on ecology and environment; Fly ash utilization; Soil/ Medical Microbiology; Biofuel Production
- Microbiology; Biotechnology; Cancer Biology; Immunology; Drug Discovery
- Animal Model; Tissue Culture Model; Cell Culture Model; Immunomodulation
- Product Formulation; Validation; Analysis
- Project Management

**10. Honors/Awards received:** Awarded CSIR-SRF Fellowship

**11. Fellowships/Scholarships:** CSIR-SRF Fellowship; DST-JRF Fellowship

**12. No. of Research Publications:**

- Papers in journals: 16 (Research and Review articles)
- In conference proceedings: 06
- Invited/key-note addresses: 02
- List of best 05 publications:
  1. **Rathore, S. S.**, Sathiyamoorthy, J., Lalitha, C., & Ramakrishnan, J. (2022). A holistic review on *Cryptococcus neoformans*. *Microbial Pathogenesis*, 105521. (IF: 3.738/ JCR: Q2) ([Link to article](#))
  2. Nishanth, M. J., Sheshadri, S. A., **Rathore, S. S.**, Srinidhi, S., & Simon, B. (2018). Expression analysis of Cell wall invertase under abiotic stress conditions influencing specialized metabolism in *Catharanthus roseus*. *Scientific reports*, 8(1), 1-15. (IF: 4.379/ JCR: Q1) ([Link to article](#))
  3. **Rathore, S. S.**, Isravel, M., Vellaisamy, S., Chellappan, D. R., Cheepurupalli, L., Raman, T., & Ramakrishnan, J. (2017). Exploration of antifungal and immunomodulatory potentials of a furanone derivative to rescue disseminated

cryptococcosis in mice. *Scientific reports*, 7(1), 1-14. (IF: 4.379/ JCR: Q1) ([Link to article](#)).

4. Lalitha, C., Raman, T., **Rathore, S. S.**, Ramar, M., Munusamy, A., & Ramakrishnan, J. (2017). ASK2 bioactive compound inhibits MDR *Klebsiella pneumoniae* by antibiofilm activity, modulating macrophage cytokines and opsonophagocytosis. *Frontiers in cellular and infection microbiology*, 7, 346. (IF: 5.293/ JCR: Q1) ([Link to article](#)).
5. **Rathore, S. S.**, Raman, T., & Ramakrishnan, J. (2016). Magnesium ion acts as a signal for capsule induction in *Cryptococcus neoformans*. *Frontiers in microbiology*, 7, 325. *Frontiers in Microbiology*, (IF: 4.076/ JCR: Q1) ([Link to article](#)).

**13.** Number of Books authored/edited: 3 (Book Chapters)

**14.** (a) No. of Patents granted/applied for: 1 Granted ([Indian Patent](#))  
(b) Technologies developed, Licensed and/or commercialized: N/A

**15.** Foreign visits : N/A

**16.** Details of Professional memberships: Biotech Research Society, India (BRSI)

**17.** Major contributions:

Our team's expertise in mine waste management, assessment of ecosystem, techniques to regain ecosystem and extraction of value added products from mining and nearby areas disturbed due to mining activity are helping the mining industry, environment, and related humans, animals, and plants for their better survival. I am working as a Biotechnologist to understand the microbial adaptation and interaction with mining areas in extreme conditions due to contaminants like heavy metals and physicochemical parameters variations. Also study the impact of adapted microorganisms on soil quality, fertility, and plant growth in mining areas for bioremediation. Additionally, explore novel biomolecules from adapted microorganisms for various health and industrial applications.

**18.** Technologies and Products/ Services

- i. Developed: Antifungal drug to treat *Cryptococcus neoformans* infection in immunocompromised patients (Molecule: (E)-5-Benzylidenedihydrofuran-2(3H)-One)
- ii. Licensed : N/A
- iii. Commercialized : N/A

**19. Designs and Prototype Developed**

- Global SOP preparation: To harmonize the process in all the company branches all over the globe.
- Method Development: Method developed by optimizing media components for biomolecule production, 3D tissue culture study models, and Primary cell culture models.
- Formulation: Develop nutraceutical products to enhance absorption and shelf life.
- Analysis: Develop analytical methods to analyze various parameters on various spectroscopic methods like HPLC, GC, and UV-Vis.

**20. Honours and awards won for technological contributions or sociological impact of R&D: N/A**

**Dr. Sudarshan Singh Rathore**