CURRICULUM VITAE

Dr. Shailesh Kumar Patidar

Current Position **Assistant Professor**
(August, 2019 onwards)
School for Earth Science,
Central University of Rajasthan, Ajmer
(Rajasthan), India.

Last Position held Research Fellow (Postdoctoral Position),
University of Michigan

Email ID shaileshpatidar84@gmail.com
shailesh.patidar@curaj.ac.in

Nationality Indian

ORCID 0000-0002-3022-3323

Cited by		VIEW ALL
	All	Since 2018
Citations	963	727
h-index	15	14
i10-index	19	18

Education

- Ph.D. Microbiology, CSIR-CSMCRI, 2011-2015
- M.Sc. Environmental Science, Sardar Patel University, 2006-2008; First Class.
- B.Sc. Environmental Science, Sardar Patel University, 2003-2006; First Class.

Research Interests

- Synthetic ecology yand biology for bioremediation, biofuel and byproducts
- Microalgae-bacteria interactions, Quorum sensing and metabolomics
- Biogeochemistry and aquatic eco-physiology
- Toxicology and environmental cleanup

Award/ Fellowship/Assistantship/ Qualifications

- University of Michigan–DoE funded Postdoc
- Brain Korea 21 -Postdoctoral fellowship(2016-2018)
- UGC-National Eligibility Test, 2009
- SRF (DST, India), 2009-2010
- Research fellow (CSIR-NMITLI-MoES, India), 2010-2013
- Project Assistant- III (CSIR), 2013-2015.
- Peking University Postdoctoral fellowship*
- FCT-PORTUGAL-CCMAR Postdoc fellowship*

*Selected, could not join

Research Experience

**Working as Assistant Professor at CURAJ since Aug., 2019

Tenure and position	*Institute/ Agency*	*Theme of the Project*
April 2019 to July 2019 Research Fellow (Postdoc)	University of Michigan, Ann Arbor, Michigan, USA.	Biofuels from ecologically designed polycultures
May 2016 to April 2018 Postdoctoral fellow	Hanyang University, Seoul, South Korea.	Involved in 3 projects: **M**olecular ecology of harmful algal blooms **E**ffects of DOM generated by *Tetraselmis* cultivation on microbial food web and, **P**hycospheric ecology for biofuel
June 2010- July 2015 Research scholar (Project JRF and Project SRF, PA III)	CSIR-CSMCRI, Bhavnagar, Gujarat, India.	**B**iofuel from marine microalgae (CSIR- MoES -NMITLI, INDIA). *Worked on environmental assessment of biofuel, effects of CO_2 on fatty acids, biorefinery and carbon sequestration.* **P**otash Technology to empower the nation (CSIR, INDIA). *Worked on bioleaching of potassium from feldspar by halophilic microbes*
Sept. 2009- June 2010 Senior Research Fellow	Anand Agricultural University, Gujarat, India.	**E**ffects of air pollution on crop growth (DST, INDIA). *Worked on trace gas emission trends and their micrometeorological impacts on crop growth*

Research Project (As a Principal Investigator)

Tenure and position	*Institute/ Agency*	*Theme of the Project & Funding agency*
Principal Investigator (**Assistant Professor, SES, CURAJ**)	DST-SERB-SRG	Theme- (Quorum sensing in synthetic ecology inspired models) - 28.60 Lakh INR
	UGC- BSR	Theme- (Ecotoxicology of Lanthanides in Macrophytes and algae) – 10 Lakh INR
	SERB-Special Call	Theme- Ozone and Heatwaves on arid grasses and conservation strategies- 27 Lakh INR appx.

Research Guidance (at present)

Ph.D. – 2 (Undergoing), Masters – 3 undergoing (6 accomplished), Undergraduate- 3 (3 accomplished)

Teaching Experience

July 2015- March 2016, Assistant Professor	N V Patel College of Pure and Applied Sciences affiliated to Sardar Patel University, Vallabh Vidyanagar, India.	**T**aught Environmental and Earth System Science **C**onvener for the University Examination in the subject Environmental Science (2016) **C**o-coordinator for Carbon Footprint Club, NVPAS (2015-2016)
August 2019- Present, Assistant Professor	School of Earth Sciences, Central University of Rajasthan, Ajmer, India.	Teaching following courses: • Ecology and Environment • Global Environmental Issues • Instrumentation for Environmental Monitoring and Analysis • Aquatic and Chemical Ecology • Wastewater Treatment • Environmental Biotechnology and Microbiology • Research Methodology • Advances in analytical techniques and Instrumentation Other duties: Lab In-charge, M.Sc.,Programme admission and Examination

Patents:

1. Mishra, S.C.P. et al. (Including **Patidar, S.K.**) 2014. Engine worthy fatty acid methyl ester (biodiesel) from naturally occurring marine microalgal mats and marine microalgae cultured in open salt pans together withvalueaddition of co-products.
   - **European Patent EP2718453 B1 (Patent Granted), PCT/IN2012/000372.**
   - Spain Patent ES2530947T3 (Patent Granted.
   - Russia Patent RU2603748C2 (PatentGranted).
   - Chinese Patent CN103842514B (Patent Granted).
   - Japanese Patent JP6002756B2 (Patent Granted).
   - U.S. Patent Application 14/119,065. (Published).
2. Mishra, S., Bhattacharya, S., Jain, D., Bachani, P., **Patidar, S.K.**, Chattejee S., 2016. A process for the preparation of a potassic ores using halophilic bacteria. **Indian Patent Application number 1445/DEL/2015, Published)**

Publications:

1. Parveen, S.[1], & **Patidar, S. K.***[1] (2022). Revisiting algal lipids and cellular stress-causing strategies for ameliorating the productivity of suitable lipids of microalgae for biofuel applications. Sustainable Energy & Fuels.6, 3907-3925. [1]equally contributed
2. **Patidar, S.K*.**, Kim S.H., Kim J.H., Park J.S., Park B.S., Han M.S***** (2018). *Pelagibaca bermudensis* promotes biofuel competence of *Tetraselmis striata* in a broad range of abiotic stressors: dynamics of quorum sensing precursors and strategic improvement in lipid productivity. *Biotechnology for Biofuels*.11, 102-117.
3. **Patidar, S.K.**, Mitra, M., George, B., Soundarya, R., & Mishra, S. (2014). Potential of *Monoraphidium minutum* for carbon sequestration and lipid production in response to varying growth mode. *Bioresource Technology*, *172*, 32-40.
4. **Patidar, S.K.**, Mishra, S. K., Bhattacharya, S., Mitra, M., Goel, S., & Mishra, S. (2015). Naturally floating microalgal mat for insitu bioremediation and potential for biofuel production. *Algal Research*, *9*, 275-282.
5. **Patidar, S.K.**, Chokshi, K., George, B., Bhattacharya, S. & Mishra, S. (2015). Dominance of cyanobacterial and cryptophytic assemblage correlated to CDOM at heavy metal contamination sites of Gujarat, India. *Environmental Monitoring and Assessment, 187*, 4118.
6. **Patidar, S.K.,** Mitra, M., Goel, S., & Mishra, S. (2016). Effect of carbon supply mode on biomass and lipid in CSMCRI's *Chlorella variabilis* (ATCC 12198). *Biomass and Bioenergy*, *86*, 1-10.

7. Mitra, M., **Patidar, S.K.**, George B. & Mishra, S. (2015). A euryhaline *Nannochloropsis gaditana* with potential for nutraceuticals (EPA) and biodiesel. *Algal Research*, *8,* 161-167

8. Mitra, M., **Patidar, S.K.**, & Mishra, S. (2015). Integrated process of two stage cultivation of *Nannochloropsis* sp. for nutraceutically valuable eicosapentaenoic acid and biodiesel. *Bioresource Technology*, *193,* 363-369.

9. Mitra, M., Shah, F., Bharadwaj, S. V., **Patidar, S.K.**, & Mishra, S. (2016). Cultivation of *Nannochloropsis oceanica* biomass rich in eicosapentaenoic acid utilizing wastewater as nutrient resource. *Bioresource Technology*, *218,* 1178-1186.

10. Pancha, I., Chokshi, K., Maurya, R., Trivedi, K., **Patidar, S.K.,** Ghosh, A., & Mishra, S. (2015). Salinity induced oxidative stress enhanced biofuel production potential of microalgae *Scenedesmus* sp. CCNM 1077. *Bioresource Technology*, *189*, 341-348. I

11. Sahu, A., Pancha, I., Jain, D., Paliwal, C., Ghosh, T., **Patidar, S.**, Bhattacharya S. & Mishra, S. (2013). Fatty acids as biomarkers of microalgae. *Phytochemistry, 89,* 53-58.

12. Mishra, S.K., Shrivastav, A., Maurya, R.R., **Patidar, S.K.**, Haldar, S., & Mishra, S. (2012). Effect of light quality on the C-phycoerythrin production in marine cyanobacteria *Pseudanabaena* sp. isolated from Gujarat coast, India. *Protein Expression and Purification*,*81*(1), 5-10.

13. Bhattacharya, S., Maurya, R., Mishra, S. K., Ghosh, T., **Patidar, S.K.**, Paliwal, C., Chokshi, K., Pancha I. & Mishra, S. (2016). Solar driven mass cultivation and the extraction of lipids from *Chlorella variabilis*: A case study. *Algal Research*, *14*, 137-142.

14. Bhattacharya, S., Bachani, P., Jain, D., **Patidar, S.K.**, & Mishra, S. (2016). Extraction of potassium from K-feldspar throughpotassium solubilization in the halophilic *Acinetobacter soli* (MTCC 5918) isolated from the experimental salt farm. *International Journal of Mineral Processing*, *152,* 53-57.

15. Bachani, P., Bhattacharya, S., Jain, D., **Patidar, S.K.**, Soundarya, R., Tirkey, S. R., & Mishra, S. (2016). Bioprospecting of halotolerant bacterial isolates for potassium recovery from K - Feldspar. *Chemical Engineering & Technology*, *39*(9), 1645-1652.

16. Karande, B.I., Pandey, V., Shekh, A.M., Guled, P.M., **Patidar, S.**D. (2012). Quantifica t io n pollution level (PM10) using Sunphotometer AOT. *Journal of Agrometeorology* 14: special issue.372-377

17. Karande, B.I., Shekh, A.M., Pandey, V., **Patidar, S.**D., Guled, P.M., Kumar A. (2012). Trends of air pollutants in urban and rural agricultural area and their impact on crops growth. *Journal of Agrometeorology* 14: special issue. 80-86

18. Kim J.H., Park B.S., Wang P., **Patidar, S.K.**, Han, M. S. (2016). Development of a qPCR assay for tracking the ecological niches genetic sub-populations within *Pseudo-nitzschia pungens* (Bacillariophyceae). *Harmful algae*. 63, 68-78

19. Park J., Park B.S., Wang P., **Patidar, S.K.**, Kim S.H., Kim J.H., Han, M.S. (2017). Phycospheric native bacteria *Pelagibaca bermudensis* and *Stappia* sp. ameliorate biomass productivity of *Tetraselmis striata* (KCTC1432BP) in co-cultivation system through mutualistic interactio ns. *Frontiers in Plant Science.* 8, 289.

20. Joo, J., Kaung, Z., Wang, P., Park B.S., **Patidar, S.K.**, Han, M.S. (2017). Ecological assessment within a mesocosm of an algaecidal naphthoquinone derivate for the mitigation of *Stephanodiscus*. *Environmental Pollution*. 229, 735-745.

21. Kim J.H., Park B.S., Wang P., **Patidar, S.K.**, Han, M.S. (2018). Revealing the distinct habitat ranges and hybrid zone of genetic sub-populations within *Pseudo-nitzschia pungens* (Bacillariophyceae) in the West Pacific area. *Harmful algae.* 73, 72-83.

22. Heon-woo Lee, Joo, J., Park B.S., Choi H. J, **Patidar, S.K.**, Han, M.S. (2018). Cyanobacteria- specific algicidal mechanism of bioinspired naphthoquinone derivative, NQ 2-0. *Scientific Reports.* 8:11595.

Book Chapter:

23. **Patidar, S.K.**, Mishra S., (2017). Carbon Sequestration by Microalgae: A green approach for climate change mitigation. Reference Module in Earth systems and Environmental Science. Encyclopedia of sustainable energy, pp 477–483.

Conference papers:

1. **Patidar, S.**, Pandey V, Shekh A.M., Karande B.I., and Guled P.M., 2010. Aerosol optical thickness, water vapour and particulate matter interrelationships in polluted and nonpolluted sites. International conference on "Global warming: Agriculture, sustainable development and public leadership", Ahemdabad, India.
2. **Patidar, S.K.**, Mishra S, Han M.S., 2016. Isolation and screening of microalgae for carbon sequestration and its lipid content from polluted West coast of India. International conference on "Life science and Bioengineering (LSBE)", Kyoto,Japan.
3. **Patidar, S.K.**, Kim S.H., Kim J.H., Park J.S., Park B.S., Han, M.S., 2017. *Pelagibaca bermudensis* promotes biofuel potential of *Tetraselmis striata* in broad range of abiotic stressors in addition to the release of the HHQ and PQS. "International phycological congress", Szczecin,Poland.
4. **Patidar, S.K.**, Kim J.H., Kim S.H., Joo J.H., Kim J.H., Han M.S., 2018. Implications of quorumsensing precursors in the co-cultivation biofuel production systems. International conference on "Ecologyand Resilience Infrastructure", Kyung Hee University, South Korea.
5. **Patidar, S.K.**, Kim S.H., Kim J.H., Park B.S., Han, M.S. Development of robust co-cultivationmodel for *Tetraselmis striata* biomass feedstocks: Possible involvement of quinolones instead oflactones during interactions. International Seminar on "H-HABs", KIOST, SouthKorea.
6. **Patidar, S.K.,** Algae for food, energy, and sustainable environmental solutions. Invited lecture at Poornima University, Jaipur, India.
7. **Patidar, S. K.,** 2022. "Potential of HHQ and PQS on algal Lipids and Physcopheric ecology. Annual Congress on Biofuels and Bioenergy". Paris, France.
8. **Patidar S.K.**, 2023. "Potential of HHQ and PQS on algal Lipids". National Seminar on "EMERGING TRENDS IN BIOLOGICAL SCIENCES: A NORTH EAST INDIA PERSPECTIVE". NEHU, Shillong, India.

Membership of scientific societies:

- Association of Agrometeorologists
- World Society of Sustainable Energy and Technology
- International Euglena Network
- INPST, Austria
- Association of Microbiologists

Reviewer:

- Environmental Science and Pollution Research (Springer)
- Journal of Basic Microbiology (Wiley)
- Bioresource Technology Reports (Elsevier)
- Life (MDPI)
- Frontiers (many journals)
- Plant Physiology and Biochemistry (Elsevier)
- Biotechnology for Biofuels (Springer-Nature)
- **Guest Editor**: Frontiers in Marine Science for special issue "Algae for energy, food and environmental solutions.

References:

- **Dr. Sandhya Mishra**, Ph.D., *Emeritus Scientist*,
  Former Head, Microalgae Group, Department of Biotechnology and Phycology, Central Salt & Marine Chemicals Research Institute (CSIR-CSMCRI), Gijubhai Badheka Marg, Bhavnagar, Gujarat 364002.Tel.: +91278-2567760 Ext. 6160. Email: smishra@csmcri.res.in
- **Er. Sangita Goel**, *Senior Scientist*,
  Air Pollution Division, National Environmental Engineering Research Institute, Nagpur (CSIR-NEERI), Maharashtra.
  Tel.:+919712-2249885-89 Ext.311 Email: s_goel@neeri.res.in
- **Prof. Myung-Soo Han**, *Professor*,
  517, Department of Life Science, College of Natural Sciences, Hanyang University, 222 Wangsimni-ro, Seongdong-gu, Seoul.
  Mobile: +82-2-2220-0956. Email ID: hanms@hanyang.ac.kr