



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE: 4612

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia dell'Università degli Studi di Milano**

Scientist- in - charge: **Prof. Fabrizio Adani**

[Dr. Prabuddha Gupta]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	GUPTA
Name	PRABUDDHA
Date of birth	20th December, 1982

PRESENT OCCUPATION

Appointment	Structure
Assistant Professor, Department of Microbiology, Marwadi University, Rajkot, India July 2017 – Till current date	Roles and responsibility <ul style="list-style-type: none">• Develop and implement innovative instructional methods for UG and PG courses.• Develop professional logistics to improvise student performance.• Guide, lead and mentor students in research projects.• Evaluate, monitor and mentor student academic progress.• Create, innovate and implement career-enhancement programs and activities.• Engage in scholarly activities, and/or creative endeavors which contribute to the academic mission of the University.• Participate in departmental and college activities.• Serve and support functional activities of departmental committees, independent study activities, and off-campus learning such as practicum and internships.• Assess, review and evaluate student activities and progress.• Assist and support senior professors in their day-to-day tasks and functions.



EDUCATION AND TRAINING

Degree	Course of studies	University	Year of achievement of the degree
PhD	PhD. in Energy and Environment Convergence	Catholic Kwandong University, Gangneung, South Korea	18 th August, 2016
Master	M.Sc in Botany (Plant Physiology and Biochemistry)	Department of Botany, The Institute of Science, University of Mumbai Mumbai, India	25 th June, 2008
Bachelor	B.Sc in Botany	Ramnarian Ruia College, University of Mumbai Mumbai, India	31 st , May 2006
Other	Diploma in molecular microbiology	Ramnarian Ruia College, University of Mumbai Mumbai, India	2005

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
2014	Member of Korean society of Environmental Engineers Conference	Seoul, South Korea

FOREIGN LANGUAGES

Languages	Level of knowledge
English	Intermediate
Hindi	Native
Korean	Limited

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
November, 2014	Excellent paper presentation award: "Mixotrophic cultivation of microalgae using glycerol, and its effect on nutrient removal from municipal wastewater" presented at the Korean society of Environmental Engineers Conference (KSIEC), 12th-14th Nov, 2014, Daegu, South Korea.
May, 2016	Excellent poster presentation: "Low cost bio-sorption of heavy metals by microalgae <i>C. vulgaris</i> " presented at the Korean society of Environmental Engineers Conference (KSIEC), 2nd-4th May, 2016, Yeosu, South Korea.



TRAINING OR RESEARCH ACTIVITY

<p>Description of activity</p> <p>PhD Thesis: Phycoremediation of organic and inorganic pollutants by mixotrophic microalgal cultivation: Sustainable biomass and biofuel production.</p> <p>Producing biodiesel from microalgae cultivated in wastewater is a promising concept to make microalgal biodiesel production more sustainable. My research was focused with an aim to develop methodologies to use nutrient source from wastewater for algae growth and utilize the biomass for various applications. The significance of my research contributions are interconnected by the following points.</p> <ul style="list-style-type: none"> • First aim one was to evaluate the general design considerations pertaining to photobioreactor systems, and discusses the current challenges in production of low-cost biomass. • Secondly, we explored the possible role of microalgal based wastewater treatment and examine the current progress, key challenges, limitations and future prospects with special emphasis on strategies involved in harvesting, boosting biomass and lipid yield by utilizing mixotrophic conditions. • Subsequently, my research focused mainly to evaluate the efficiency of the integration of microalgal cultivation with municipal wastewater treatment. It focused to use cultivation strategy employing mixotrophic cultivation using waste organic carbon (glucose, acetate, and glycerol) as a goal to increase the quality of algal biomass and reduce the overall treatment cost. Moreover, the nutrient removal ability, biomass productivity, lipid, biodiesel yield, and potential for scale-up were investigated under autotrophic and mixotrophic conditions for <i>Chlorella vulgaris</i> and <i>Nannochloropsis oculata</i>. • Furthermore, the de-oiled biomass obtained from cultivation was employed as low cost sustainable magnetic bio-sorbent of removal of toxic heavy metals Cd(II) and Pb (II) from wastewater with benefits for easy separation and reuse in real wastewater treatment. <p>Thus, my research activities were primarily focused on sustainable microalgal biomass production with benefits of phycoremediation and bioenergy production (biofuel from microalgae).</p>

PROJECT ACTIVITY

Year	Project
2010 to 2011	<p>Worked as Project Assistant-II in project entitled Biofuel from marine microalgae from June 2010 - September 2011 at CSIR-Central Salt and Marine Chemicals Research Institute, Bhavnagar, India</p> <p>Following is the glimpse of my work carried out in CSMCRI, Bhavnagar.</p> <ul style="list-style-type: none"> • Ecological data and algal specimen collection along Gujarat coast • Identification, Screening and Isolation of potential lipid yielding strains along coast of Gujarat • Maintenance, culturing and preservation of various axenic microalgae strains (Cyanobacteria, Chlorophytes, Rhodophytes, and Diatoms etc.) • Phylogenetic species recognition using 16s and 18s rRNA techniques • Assisting in mass cultivation of microalgae, microalgae growth pattern studies, lipid extraction and biodiesel production of algal biomass. • Preparation of SOPs and reports



PATENTS

Patent
NA

CONGRESSES AND SEMINARS

Date	Title	Place
30th April-2nd May, 2014	Oral presentation: "Production of biodiesel by microalgal mats" presented at the Korean society of Environmental Engineers Conference (KSIEC)	2014, Jeju, South Korea.
5th-8th Oct, 2014	Oral presentation: "Enhancing efficiency of constructed wetlands by using biochar" presented at, 2nd International conference on contaminated land, ecological assessment and remediation (CLEAR-2014)	Chuncheon, South Korea.
16th-18th Oct, 2014	Poster presentation: "Mixotrophic cultivation of micro algae using glycerol, and its effect on nutrient removal from municipal waste water" presented at BIT's 3rd Annual International Congress of Algae-2016 (AICA-2014)	Dalian, China.
12th-14th Nov, 2014	Oral presentation: "Mixotrophic cultivation of microalgae using glycerol, and its effect on nutrient removal from municipal wastewater" presented at the Korean society of Environmental Engineers Conference (KSIEC)	Daegu, South Korea
29th April-1st May, 2015,	Oral presentation: "Harvesting of <i>Chlorella vulgaris</i> by using chitosan as bioflocculant" presented at the Korean society of Environmental Engineers Conference (KSIEC),	Busan, South Korea.
2nd-5th July 2015	Oral presentation: "Harvesting of <i>Chlorella vulgaris</i> by using chitosan as bioflocculant" presented at the 10th Asia Pacific Conference on Sustainable Energy & Environmental Technologies (APCSEET-2014)	University of Seoul, South Korea.
4th-6th Nov, 2015	Oral presentation: "Mixotrophic cultivation of <i>Chlorella vulgaris</i> in wastewater for nutrient removal and production of hydrocarbons" presented at the Korean society of Environmental Engineers Conference (KSIEC)	Jeju, South Korea.
2nd-4th May, 2016	Poster presentation: "Low cost bio-sorption of heavy metals by microalgae <i>C. vulgaris</i> " presented at the Korean society of Environmental Engineers Conference (KSIEC)	Yeosu, South Korea.

PUBLICATIONS

Research Articles
<ul style="list-style-type: none">• Gupta PL, Rajput M, Oza T, Trivedi U, Sanghvi G* (2019) Eminence of Microbial Products in Cosmetic Industry. Nat. Prod. Bioprospect, 9: 4, 267–278.• Gupta PL, Choi H-J, Pawar RR, Jung S-P, Lee S-M (2016) Enhanced biomass production through optimization of carbon source and utilization of wastewater as a nutrient source. J Environ Manage 184, Part 3:585–595.• Gupta PL, Lee S-M, Choi H-J (2016) Integration of microalgal cultivation system for wastewater remediation and sustainable biomass production. World J Microbiol Biotechnol 32:139.



- **Gupta PL**, Choi H-J, Lee S-M (2016) Enhanced nutrient removal from municipal wastewater assisted by mixotrophic microalgal cultivation using glycerol. *Environ Sci Pollut Res* 23:10114–10123.
- **Gupta PL**, Lee S-M, Choi H-J (2015) A mini review: photobioreactors for large scale algal cultivation. *World J Microbiol Biotechnol* 31:1409–1417.
- **Gupta P**, Ann T, Lee S-M (2015) Use of biochar to enhance constructed wetland performance in wastewater reclamation. *Environ Eng Res* 21:36–44.
- Pawar RR, **Gupta P**, Lalhmunsiam, Bajaj HC, Lee S-M (2016) Al-intercalated acid activated bentonite beads for the removal of aqueous phosphate. *Sci Total Environ* 572:1222–1230.
- Lalhmunsiam, **Gupta PL**, Jung H, Tiwari D, Kong S-H, Lee S-M (2017) Insight into the mechanism of Cd(II) and Pb(II) removal by sustainable magnetic biosorbent precursor to *Chlorella vulgaris*. *J Taiwan Inst Chem Eng.*71:206–213.
- Kang H, Jeong J, **Gupta PL**, Jung SP (2017) Effects of brush-anode configurations on performance and electrochemistry of microbial fuel cells. *Int J Hydrog Energy.* 42:27693–27700.
- Pawar RR, Lalhmunsiam, **Gupta PL**, Sawant SY, Shahmoradi B, Lee S-M (2018) Porous synthetic hectorite clay-alginate composite beads for effective adsorption of methylene blue dye from aqueous solution. *Int J Biol Macromol.* 114:1315-1324.
- Lalhmunsiam, **Gupta PL**, Pawar RR, Lee S-M (2015) Use of Algal Biomass in the Remediation of Aqueous waste Contaminated with Cadmium. *Science and technology journal* 3(1): 14-20.
- Tea-woong A, **Gupta PL**, Choi C-H, Lee S-M, (2015) Effects of bio-catalytic media for nutrient removal in wetland using water plant. *KSWST Jour. Wat. Treat.* 23(1):75-81.

Books chapters

- Anti-ageing and skin lightening microbial products, in *Bioprospecting of microorganism based industrial molecules*, Wiley, Accepted, In press.
- Chapter 3: Biofuel Production Methods, Challenges and Opportunities for Sustainable Development, Green Innovation, Sustainable Development, and Circular Economy, CRC Press (Taylor & Francis), Accepted, In press, <https://doi.org/10.1201/9781003011255>, e-ISBN: 9781003011255.
- Heavy Metal Removal by Nanobiotechnology in “Nanobiotechnology: Microbes and plant assisted synthesis of nanoparticles, mechanisms and applications; Nanotechnology in Medicine and Biology”, Elsevier, Accepted, In press
- Microbial strain engineering in “Engineering of Microbial Biosynthetic pathways”, Springer, Accepted, In press, <https://doi.org/10.1007/978-981-15-2604-6>, ISBN: 978-981-15-2603-9.

Congress proceedings

“Enhancing efficiency of constructed wetlands by using biochar” presented at, 2nd International conference on contaminated land, ecological assessment and remediation (CLEAR-2014), Chuncheon, South Korea

“Mixotrophic cultivation of microalgae using glycerol, and its effect on nutrient removal from municipal wastewater” presented at the Korean society of Environmental Engineers Conference (KSIEC), Daegu, South Korea

“Harvesting of *Chlorella vulgaris* by using chitosan as bioflocculant” presented at the 10th Asia Pacific Conference on Sustainable Energy & Environmental Technologies (APCSEET-2014), University of Seoul, South Korea.



Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: **Kalyan, India**

SIGNATURE

A handwritten signature in black ink, appearing to read 'Prabuddha Gupta', with a long horizontal stroke extending to the right.

Dr. Prabuddha Gupta