

## SCHOOL OF SCIENCES



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### EDUCATIONAL QUALIFICATIONS

**Ph.D.**(Microbiology), 2018, Maharaja Krishnakumarsinhji Bhavnagar University, Bhavnagar, India

**M.Sc.**(Biotechnology), 2014, Nirma University, Ahmedabad, India

**B.Sc.**(Biotechnology), 2012, Saurashtra University, Rajkot, India

### WORK EXPERIENCE

| Sr No. | Designation            | Year | Institute/University                  |
|--------|------------------------|------|---------------------------------------|
| 1      | Assistant Professor    | 2014 | Indrashil University                  |
| 2      | Senior Research Fellow | 2017 | M K Bhavnagar University              |
| 3      | Junior Research Fellow | 2015 | M K Bhavnagar University              |
| 4      | Junior Research Fellow | 2014 | Indian Institute of Advanced Research |

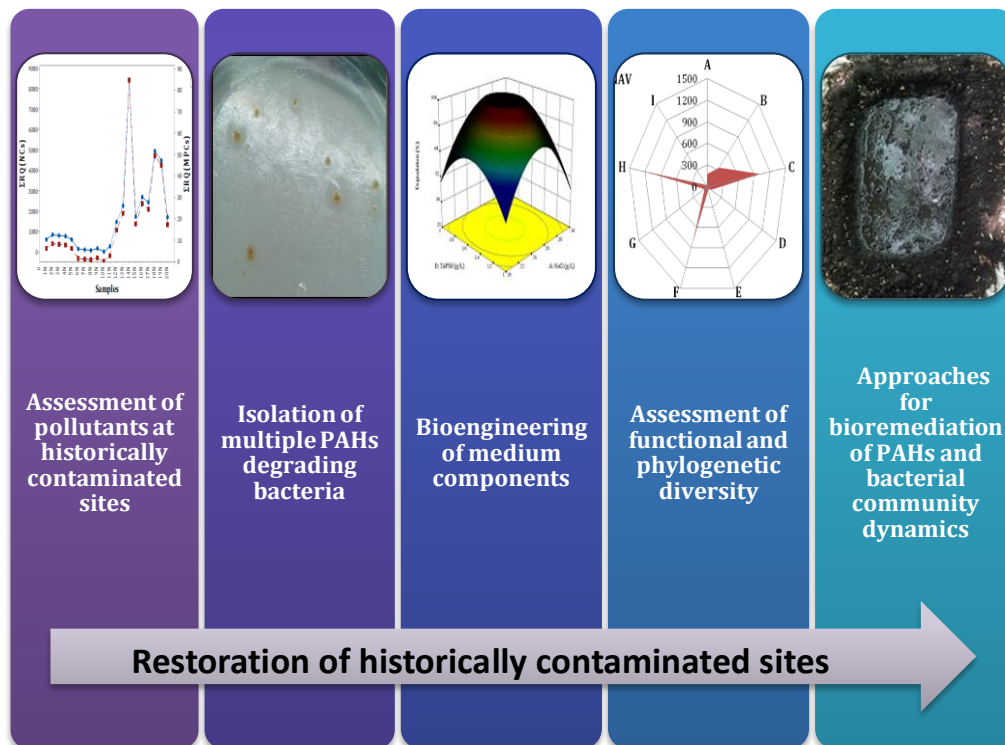
### SUBJECTS TAUGHT

- **UG:** Molecular biology, Environmental science, General microbiology
- **PG :** Microbiology (Diversity and systematics), Ecology and Evolution, Microbial genetics, analytical instrumentation, molecular biology

## RESEARCH AREA

### Environmental microbiology and biotechnology, molecular biology, metagenomics, proteomics

Over the last few decades, with an increasing global awareness about the potential adverse effects of pollutants on public health and environment, remediation and restoration of environment contaminated with hazardous materials have received increasing attention. However, due to lack of knowledge in the field of biodegradation and bioremediation using advanced biological techniques leads to the lack of successful bioremediation techniques. Thus, my current and past research focused on development of bioremediation strategies for pollutants at contaminated sites using conventional and advanced biotechnology tools i.e. rarely used “blue biotechnology” (Fig 1). The research has produced many scientific publications in reputed journals with high impact factors such as ecological indicators (4.490), environmental pollution (5.710), international journal of biomacromolecules (4.784) etc. Furthermore, I am trying to develop nano-bioremediation technology using green synthesized nano particles, which could be a better solution for policy makers and stake holders to restore contaminated sites. Additionally, I am also interested to develop technology for large scale production of industrially important chemicals using marine resources with the help of “blue biotechnology”. It will be helpful to gain interest of entrepreneurs who want to build start-ups.



**Fig 1. Development of strategies for restoration of pollutants at historically polluted sites**

## **CORE GROUP**

**Name:** Miss Payal Patel

**Date of joining:** 9/10/2018

**Topic:** “Studies on bacterial asparaginase and its anti proliferative activity”

## **HONOR/AWARD**

**CSIR Travel award – Full airfare support**

BioMicroworld-2017, VII International Conference on Environmental, Industrial and Applied Microbiology, Madrid, Spain held from 18<sup>th</sup>-20<sup>th</sup> October, 2017.

## **KEY PUBLICATIONS**

### **JOURNALS**

- **Research Articles**

- **Gosai, H.B.,**Sachaniya, B.K., Dudhagara, D.R., Panseriya, H.Z. and Dave, B.P., 2018. Bioengineering for multiple PAHs degradation using process centric and data centric approaches. *Chemometrics and Intelligent Laboratory Systems*, 179, pp.99-108. **(IF-2.780)**
- **Gosai, H.B.,**Sachaniya, B.K., Panseriya, H.Z. and Dave, B.P., 2018. Functional and phylogenetic diversity assessment of microbial communities at Gulf of Kachchh, India: An ecological footprint. *Ecol. Indic.* 93, 65-75. **(IF-4.490)**
- Vala, A.K., Sachaniya, B., Dudhagara, D., Panseriya, H.Z., **Gosai, H.**, Rawal, R. and Dave, B.P., 2018. Characterization of L-asparaginase from marine-derived *Aspergillus niger* AKV-MKBU, its antiproliferative activity and bench scale production using industrial waste. *Int. J. Biol. Macromol.* 108, 41-46. **(IF-4.784)**
- **Gosai, H.B.,**Sachaniya, B.K., Dudhagara, D.R., Rajpara, R.K. and Dave, B.P., 2018. Concentrations, input prediction and probabilistic biological risk assessment of

polycyclic aromatic hydrocarbons (PAHs) along Gujarat coastline. Environ. Geochem. Health 40(2), 653-665. **(IF-3.252)**

- Rajpara, R.K., Dudhagara, D.R., Bhatt, J.K., **Gosai, H.B.** and Dave, B.P., 2017. Polycyclic aromatic hydrocarbons (PAHs) at the Gulf of Kutch, Gujarat, India: Occurrence, source apportionment, and toxicity of PAHs as an emerging issue. Mar. Pollut. Bull. 119(2), 231-238. **(IF-3.782)**
- Dudhagara, D.R., Rajpara, R.K., Bhatt, J.K., **Gosai, H.B.** and Dave, B.P., 2016. Bioengineering for polycyclic aromatic hydrocarbon degradation by *Mycobacterium litorale*: Statistical and artificial neural network (ANN) approach. Chemometr. Intell. Lab. 159, 155-163. **(IF-2.780)**
- Dudhagara, D.R., Rajpara, R.K., Bhatt, J.K., **Gosai, H.B.**, Sachaniya, B.K. and Dave, B.P., 2016. Distribution, sources and ecological risk assessment of PAHs in historically contaminated surface sediments at Bhavnagar coast, Gujarat, India. Environ. Pollut. 213, 338-346. **(IF-5.714)**
- Rajpara, R.K., Dudhagara D.R., Bhatt J.K., **Gosai H.B.** and Dave B.P., 2016. Plackett-Burman design for the screening of media component for anthracene degradation by *Sphingobiummyanoikuyae* strain ANT3D. Int. J. Mar. Biol. Res.1(2), 1-4.
- Rajpara, R.K., Dudhagara, D.R., Bhatt, J.K., Ghevariya, C.M., Domadiya, T.B., **Gosai, H.B.**, Vala, A.K. and Dave, B.P., 2015. Isolation and investigation of biodegradation potential of multiple polycyclic aromatic hydrocarbons (PAHs) degrading marine bacteria near Bhavnagar Coast, India. J. Mar. Biol. Oceanograph. 4(2), 1-6. **(IF-1.130)**

- **Gosai, H.,**Raval, S., Chaudhari, V. and Kothari, V., 2014. Microwave mutagenesis for altered lactic acid production in *Lactobacillus plantarum*, and *Streptococcus mutans*. *Current Trends in Biotechnology and Pharmacy*, 8(4), pp.402-412.
- Chaudhari, V., **Gosai, H.,**Raval, S. and Kothari, V., 2014. Effect of certain natural products and organic solvents on quorum sensing in *Chromobacterium violaceum*. *Asian Pacific journal of tropical medicine*, 7, pp.S204-S211. (IF-1.772)
- Raval, S., Chaudhari, V., **Gosai, H.** and Kothari, V., 2014. Effect of low power microwave radiation on pigment production in bacteria. *Microbiology Research*, 5(1).

#### **BOOKS**

- Kothari, V., **Gosai, H.,** Raval, S. and Chaudhary, V., 2014. Natural products as potential sources of inhibitors of bacterial quorum-sensing. GRIN Verlag, Munich, Germany.
- Kothari, V., **Gosai, H.,**Raval, S. and Chaudhary, V., 2015. Altered production of organic acid and pigments by microbes under influence of microwave radiation: Microwave Mutagenesis. GRIN Verlag, Munich, Germany.

#### **BOOK CHAPTERS**

- Panseriya, H.Z., **Gosai, H.B.,**Sachaniya, B.K., Vala, A.K. and Dave, B.P., 2019. Marine microbial mettle for heavy metal bioremediation: a perception. *Marine Pollution: Current Status, Impacts and Remedies*, 1, pp.409-434.
- Sachaniya, B.K., **Gosai, H.B.,**Panseriya, H.Z., Vala, A.K. and Dave, B.P., 2019. Polycyclic Aromatic Hydrocarbons (PAHs): Occurrence and Bioremediation in the Marine Environment. *Marine Pollution: Current Status, Impacts and Remedies*, 1, pp.435-466.

- Kothari, R.K., Nathani, N.M., Mootapally, C., Rank, J.K., **Gosai, H.B.**, Dave, B.P. and Joshi, C.G., 2018. Comprehensive exploration of the rumen microbial ecosystem with advancements in metagenomics. In: Metagenomics. Nagarajan, M. (Ed.) 215-229. Academic Press, United Kingdom.

## **CONFERENCES**

- **Haren B. Gosai** and Bharti P Dave, “Polycyclic Aromatic Hydrocarbons Bioremediation Approaches at Crude Oil and Coal Contaminated Sites” at International Conference on Advances In Medical and Industrial Biotechnology (ICAMIB-2019), Sathyabhama University, 20th -22 nd March, 2019 **(Oral Presentation)**
- **Haren B. Gosai**, Bhumi K. Sachaniya, Dushyant R. Dudhagara and Bharti P. Dave, “Comparison of conventional methods and artificial neural network in PAHs degradation study – A review” at 2<sup>nd</sup> National Conference on Current Trends in Biological Sciences– CTBS 2017, Sardar Patel University, Vallabhavidyanagar, Gujarat from 20<sup>th</sup>-21<sup>st</sup>, January, 2017. **(Oral presentation)**
- **Haren B. Gosai**, Bhumi K. Sachaniya and Bharti P Dave, “Sediment quality threshold: Determination of sediment quality by multi-computational approaches along Gujarat coast” at 2016 NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference, SciGenome Research Foundation, Cochin, India from 3<sup>rd</sup>-5<sup>th</sup>, October, 2016. **(Poster presentation)**
- **Haren B. Gosai**, Bhumi K. Sachaniya, Dushyant R. Dudhagara, Rahul K. Rajpara and Bharti P. Dave, “Detection of PAHs at contaminated sites along Gujarat coast, their

source and toxicity assessment : As an aid to their biodegradation” at the 56th Annual Conference of the Association of Microbiologists of India (AMI), JNU, New Delhi, India from 7<sup>th</sup>-10<sup>th</sup>, December, 2015. **(Poster presentation)**

- **Haren B. Gosai**, Twinkle Solanki, Manhar Solanki and Dhiraj Naik, “ “Interact to thrive: Plant growth promoting bacteria improves growth performance and alter carbon allocation in seedlings of plantation forest tree *Eucalyptus globulus* subjected to drought and soil type” at ITM university, Gwalior, India. **(Oral Presentation)**
- **Haren B. Gosai**, Vimla Choudhary, Shreya Raval and Vijay Kothari, “Effect of certain natural products and organic solvents on quorum sensing in *Chromobacterium violaceum*” at National Symposium at Indian Institute of Advanced Research, Gandhinagar, India. **(Oral Presentation)**

#### **WORKSHOP/TRAINING**

- Workshop attended on “Marine Ecology of Gujarat Coast” organized by Department of Life Sciences, Maharaja Krishnakumarsinhji Bhavnagar University, Bhavnagar, Gujarat on 28th October, 2015.
- Participated in GSBTM sponsored crash workshop on “National competitive examinations for students of biotechnology and allied life sciences” at Shree M. & N. Virani science college- Rajkot, India