



# COLLABORATIVE PROJECT GUJARAT UNIVERSITY & SAC-ISRO

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## Project Title:

Development of algorithms for carbon and nitrogen-based productivity in Bay of Bengal and Arabian Sea and their role on biogeochemistry

Oceansat-3 Program - 2023-2025

**Post: Project fellow (2 posts)**

**Educational Qualification:**

**M.Sc (Chemistry/Environment Science/ Geology/Geoinformatics) pass out candidates with B+ or Minimum 55%**

**Age limit: Below 28 years**

**Fellowship: Rs. 15,000/- per month (Consolidated)**

**Project Tenure: 2023 to 2025**

**Work place: SAC-ISRO, Ahmedabad / Chemistry Department, Gujarat University, Ahmedabad**

**Expectation:** The candidate should have basic knowledge of water analysis, water sampling, various analytical instruments, knowledge of computer, data analysis, remote sensing etc... and more related to the project.

**Other conditions:** The candidate has to go for collecting the water samples deep into various areas of the Arabian Sea/Bay of Bengal as well as ship cruises trips as planned by the SAC-ISRO for the sample collection and analysis requirements for the project. The candidate has to travel for the collection of samples, do the analysis work at Lab, data analysis, remote sensing data analysis and other project related work including the administrative, purchase and accounting etc...

# Brief Information about the project

## Study area

The study area will be of Arabian Sea and monthly and seasonal analysis will be done. The seasonal analysis will be done by regularly planned field trips using coastal vessels and ship cruises in different types of water in Arabian Sea and also cruise opportunities in Bay of Bengal as well.

## Data requirements

- Geophysical parameters and other levels of satellite data  
Normalized water leaving radiance (Lwn), Remote sensing reflectance (Rrs), Chlorophyll, Sea Surface Temperature (SST), Salinity, Wind speed, Diffuse attenuation coefficient (Kd), Photosynthetic active radiation (PAR), etc.
- Satellite data: Oceansat-3, Oceansats-1/2, Scatsat, other Indian and International missions
- In-situ observations from various campaigns and buoys
- Chemical analysis/parameter to be studied of samples such as Pigments, Suspended matter, Transparency, pH, Salinity, wind speed, Dissolved Oxygen, and nutrients (nitrate, ammonia, phosphate, and silicates), Nutrients, estimation of  $^{13}\text{C}$  and  $^{14}\text{N}$ , carbon components (TOC and nitrogen components (PON and TON) etc.
- Model analysis/forecast datasets

## Methodology

1. Samples will be collected from surface and various depths of the ocean.
2. Study of chemical and bio-physical parameters of collected samples.
3. Sampling of  $^{13}\text{C}$  and  $^{15}\text{N}$  will be done on-site and will be analyzed as per the literature survey with standard protocol by IOCCG, JGOFS, etc.
4. The Samples will be analyzed with the help of an Elemental analyzer and Isotope Ratio Mass Spectrometer, TOC analyzer, etc. Spectrophotometer, fluorometer and HPLC will be used. Radiometer will be operated to obtain water leaving radiance and remote sensing reflectance.
5. Based on the results the data will be fed to satellite data to get information via imaging study.

## Expected results

Primary productivity and new production images and atlases.

The study will bring out the DOC, TOC, CDOM, DON/PON and TN maps and atlases.

OCM 3 data-based and SSTM data-based carbon and nitrogen components products.

Technical papers and reports as joint publications.

Modelled outputs and methods would be used to generate operational products.

## Mode of Selection: Scrutiny of applications received, Written test and Personal Interview.

**Candidates have to send their application with CV to the following two e-mail ids together in a single mail attachment, otherwise their application will not be considered. Application deadline: 16th of August 2023**

## Email IDs for application:

[rksarangi.2022@gmail.com](mailto:rksarangi.2022@gmail.com), [hitesh13chem@rediffmail.com](mailto:hitesh13chem@rediffmail.com)

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