COLLABORATIVE PROJECT
GUJARAT UNIVERSITY & SAC-ISRO

Project Title:

Development of algorithms for carbon and nitrogen-based productivity in the Bay of Bengal and Arabian Sea and their role in biogeochemistry
Oceansat-3 Program - 2022-2025

Post: Project fellow (2 posts)

Last Date of Application is 17-07-2023

Educational Qualification:

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

Age limit: Below 28 years

Fellowship: Rs. 15,000/- per month

Project Tenure: 2022 to 2025

Workplace: 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 computers, 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…

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

Candidates have to send application cv in pdf format to the following emails ids at the same time:

Contact Email IDs: rksarangi.2022@gmail.com **,** hitesh13chem@rediffmail.com

Brief Information about the project

Study area

The study area will be of the 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 the Arabian Sea and also cruise opportunities in the 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 13C and 14N, carbon components (TOC and nitrogen components (PON and TON) etc.
- Model analysis/forecast datasets

Methodology

    1. Samples will be collected from the various depths of the ocean.

    2. Study of chemical and bio-physical parameters of collected samples.

I.   Sampling of 13^C and 15^N will be done on-site and will be analyzed as per the literature survey with standard protocol by IOCCG, JGOFS, etc.

II.   The Samples will be analyzed with the help of an Elemental analyzer and Isotope Ratio Mass Spectrometer TOC analyzer. Spectrophotometer, fluorometer and HPLC will be used. Radiometer will be operated to obtain water-leaving radiance and remote sensing reflectance.

III.   Based on the results the data will be fed to satellite data to get information via imaging study.

Expected results

Primary productivity and new product 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.

Online application will be accepted via the Link –

https://forms.gle/TqTEpurdHFL59wfi8