



**CENTRE FOR INDUSTRIAL CONSULTANCY AND SPONSORED RESEARCH**  
**INDIAN INSTITUTE OF TECHNOLOGY MADRAS**  
CHENNAI – 600 036

*Advertisement No.: ICSR/PR/Advt.38/2019 Dated: 09.09.2019*

Applications are invited for the following temporary post under the project titled “**Shelf Sea and Shelf Break Processes of the Antarctic Margins and the Production of Dense Shelf Water**”, in the Dept. of Ocean Engineering, IIT Madras.

**Co-ordinator:** Prof. K. Murali, Department of Ocean Engineering, IIT Madras.

**Co-principal investigator:** Prof. Manikandan Mathur, Department of Aerospace Engineering, IIT Madras

**Duration:** Initially for a period of one year, extendable based on performance.

S.No	Post	Qualification and Experience	Pay Range
1	<b>Project Associate</b>	<p><b>Qualification:</b></p> <p style="text-align: center;">B. Tech / B.E / or Master's degree in engineering or Sciences.</p> <p><b>Desirable:</b></p> <ul style="list-style-type: none"><li>✓ Basic programming skills: data analysis, scientific computing. Python would be an added advantage.</li><li>✓ A background in physical oceanography or fluid dynamics would help.</li></ul>	<b>Rs.35,000/-pm</b>

**The last date for submission of online application is 24.09.2019**

**Scientific Project Details:**

The Antarctic Slope Front (ASF) is a dynamic feature, found almost all around the Antarctic continent. It forms between the shelf water masses and the warmer Circumpolar Deep Water (CDW). The ASF regulates the transport of shelf water masses and CDW masses across the continental slope. The on-shelf processes such as sea ice formation and freshwater fluxes are important determining factors responsible for the formation of Dense Shelf Water. Whereas, the on-slope dynamic processes are responsible for the flux of CDW onto the shelf. On the shelf, the shelf water masses and the intruding CDW interact with each other determining the bottom temperature regime of the shelf. In regions which experience heavy intrusion of CDW

and little to no production of DSW, the intruding CDW floods the shelf bottom and gains access to the base of the ice shelves. In regions with large volume of DSW production where the water column becomes completely destratified in the winter and DSW floods the sea bottom, we find that the intruding CDW isopycnals are displaced to the surface by the presence of heavier DSW water masses near the ice shelves. The intruding CDW water masses displaced to the surface then ventilate their heat to the atmosphere and mix with Winter Water and shelf water masses to further contribute to the formation of shelf water masses.

This study proposes to carry out hydrographic observations in transects that cross the continental slope and extend towards the coast, in both, the Prydz Bay and the India Bay, to obtain a snapshot of how the off-shelf water masses interact with the on-shelf water masses to produce the features that are observed in the ASF. From the hydrographic data, the study will analyse the water mass transport and the ocean heat content in the water column on the shelf. The heat transport due to the intrusion of CDW onto the shelf will be quantified and transient phenomena such as eddy heat transport will also be studied during the course of the voyage across the slope. Rosette samples are also proposed to be collected which will enable isotope analysis to identify the meteoric water masses which will help to supplement the freshwater fluxes budget computed using tagged seal CTD data set.

**Note:** A well-performing candidate may be encouraged to apply for a Ph.D. scholarship at IIT Madras to continue the work after termination of the project. The candidate will gain experience at both IIT Madras and at the collaborating institution, National Centre for Polar and Ocean Research, Goa.

**Interested candidates may please contact the project scientist for further details: Aditya Narayanan, email: [adityarn@gmail.com](mailto:adityarn@gmail.com)**

#### **General Instructions to the candidates**

- 1) All the positions are on purely contract basis.
- 2) The completion of the period of contract will not confer any right for further extension, regularization, permanency at the Institute.
- 3) Candidates should apply online only in the website <https://icandsr.iitm.ac.in/recruitment/> - **(Please check the advertisement number Advt.38/2019 displayed and submit the application for the relevant position).**
- 4) Separate application has to be filled for each post.
- 5) The system will accept single application only with the registered login ID (email) for an advertisement, hence the candidate is requested to select the multiple positions (In case, he/she wishes to apply for more than one position) before the submission of application.
- 6) The application cannot be edited, reverted once it is submitted.
- 7) Candidates should not attempt to apply twice for the same post. If multiple applications are received from a candidate for the same post, his/her candidature will liable to be rejected.

- 8) Candidates should follow the prescribed procedure for submission of online application.
- 9) Candidates are advised to fill their correct and active e-mail addresses in the online application as all correspondence will be made by the Institute through e-mail only.
- 10) The candidates applying for any post should ensure that they fulfil all the eligibility conditions for the post. Their admission to any stage of the selection process will be purely provisional subject to confirmation that they satisfy the prescribed eligibility conditions. Mere issue of registration certificate / call letter to the candidate will not imply that his/her candidature has been found eligible.
- 11) After successful online submission of application, a print out of the application form must be obtained and submitted when called for test. It will be required at the time of document verification/test/interview. Hard copy of the application is NOT to be sent to the Institute.
- 12) Candidates must be citizens of India. Persons who have migrated from Pakistan with the intention of permanently settling in India or subjects of Nepal are also eligible, but in their case a certificate of eligibility from the Government of India will be necessary for appointment. Such candidates should apply to the Government of India in the Ministry of Home Affairs for necessary certificate and furnish satisfactory proof of having so applied.
- 13) The prescribed qualifications are minimum and unless specified, they are required for consideration for the post, even if higher qualification has been acquired and the mere fact that a candidate possesses the same will not entitle him/her for being called for interview.
- 14) Relevant experience gained after the minimum qualifying degree will only be taken into consideration. Minimum requirements of qualifications and/or experience can be relaxed in respect of exceptionally outstanding candidates.
- 15) The experience required is relaxable at the discretion of the Institute in the case of candidates belonging to the Scheduled Caste / Scheduled Tribe, if at any stage of selection the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancy reserved for them.
- 16) The Institute reserves the right to restrict the number of candidates for written / skill test / interview to a reasonable limit on the basis of qualifications, level and relevance of experience higher than the minimum prescribed in the advertisement and other academic achievements. The Institute also reserves the right of rejecting any or all the applications without assigning any reasons therefore.
- 17) Calling a candidate for test/interview merely indicates that it is felt that he/she with others may be suitable for the post and conveys no assurance whatsoever that he/she will be recommended or selected or his/her conditions specified in the application will be accepted.
- 18) Candidates will be short-listed for Test/Interview on the basis of the information provided by them in their online applications. They must ensure that such information is true. If at any subsequent stage or at the time of Test/Interview any information given by them or any claim made by them in their online applications is found to be false, their candidature will be liable to be rejected.
- 19) The Institute shall verify the antecedents or documents submitted by a candidate at any time at the time of appointment or during the tenure of the service. In case, it is detected that the documents submitted by the

candidates are fake or the candidate has clandestine antecedents/background and has suppressed the said information, then his services shall be liable to be terminated.

- 20) In case of any inadvertent mistake in the process of selection which may be detected at any stage even after the issue of appointment letter, the Institute reserves the right to modify/ withdraw/ cancel any communication made to the candidates.
- 21) Applicants who are working in **any one of the Project at IIT Madras**, must apply through proper channel otherwise they will be required to produce No-Objection Certificate at the time of document verification/Test/Interview. Candidates without NOC will not be permitted to appear for Test/Interview.
- 22) Candidates may send testimonials from persons intimately acquainted with their work and character. If the applicant is in employment, he/she should submit testimonials from the most recent employer or immediate superior as a referee.
- 23) The Institute has a right to decide the mode of screening and testing the applicant for short listing and selection.
- 24) The Institute solely reserves the right not to fill any advertised position without assigning any reason
- 25) Only shortlisted applicants will be contacted.
- 26) No correspondence whatsoever will be entertained from candidates regarding conduct and result of test/interview and reasons for not being called for interview. Canvassing in any form will be a disqualification.
- 27) The crucial date for determining the eligibility criteria for all candidates in every respect shall be the prescribed closing date for submission of online application.
- 28) The Institute strives to have a workforce which reflects gender balance and women candidates are encouraged to apply.
- 29) Any corrigendum/clarifications on this advertisement, if necessary, shall be uploaded on website and no separate communication will be sent for this purpose.

**30) The last date for submission of online application is 24.09.2019**

- 31) If there is any issue to submit the application please send E-mail to : [recruitment@imail.iitm.ac.in](mailto:recruitment@imail.iitm.ac.in) / [icsrrecruitment@iitm.ac.in](mailto:icsrrecruitment@iitm.ac.in) **Contact: 044- 2257 9778 / 9796** on all working days from **9.00 AM to 05.30 PM (Monday to Friday – except National Holidays)**. (Please note, only technical issues will be accepted – No interim correspondence with reference to the selection process will be considered).
- 32) **Instructions to apply online:-**Eligible applicants would require to register and apply online through <https://icandsr.iitm.ac.in/recruitment/> and submit the application.

**Sd/-**

Senior Manager –HR  
Centre for IC&SR  
IIT Madras