



## NATIONAL INSTITUTE OF OCEANOGRAPHY

Council of Scientific & Industrial Research (CSIR)  
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### Advt No. P21/07

The Director, NIO is interested in filling up of a Ph.D position available in the National Institute of Oceanography, Dona Paula, Goa (India), in collaboration with Newcastle University (UK) funded by UK-India Education and Research Initiative (UKIERI), for the duration of the project (3 Years) under the Project **CLP 1916**. The project deals with the following:

#### **“Problems associated with the evaluation of Ballast Water Treatment systems.”**

The problem regarding marine invasive species in ballast water has resulted in significant ecological, economic, and public health impacts. Invasions result from the establishment of species beyond their historical geographic range, and have been a focus of increasing attention from scientists and policy-makers, because the observed rate of new invasions in recent time has increased exponentially for coastal habitats worldwide. Internationally agreed standards for the control and management of ships' ballast water have been set by the International Maritime Organisation (IMO), but a universal solution to the problem is yet to be identified. A wide range of approaches for the evaluation of ballast water treatment systems is in existence, but these hold inherent logistical problems, and employ such diverse treatment conditions and response measurements that cross-comparison is difficult. The challenge is to develop a tractable standardised evaluation procedure of “treatment success”, that can be routinely employed at manageable cost, and that encompasses the necessary spectrum of variables.

This project aims to identify the necessary methodology for the statistical and biological assessment of defining “treatment success” in any ballast water treatment system (BWT) under development. A component of this will incorporate a practicable definition of organism “viability” post-treatment, for a range of planktonic organisms including phytoplankton, zooplankton and bacteria.

#### **Only Candidates satisfying the following requirements may apply:**

The candidate should have M.Sc in Marine Biology/Marine Science/ Life Sciences or a related discipline with a good academic record and cleared CSIR-NET examination. The position provides for full tuition fee support as a full-time Ph.D student at Newcastle University in UK, stay allowance in UK (£689 per month), travel expenses, research expenditure, conference and meeting attending costs. Upon successful and satisfactory completion of the research programme based on Newcastle University's regulations, Ph.D degree will be awarded by Newcastle University.

**Desirable** : Understanding of biological oceanography, and the key processes involved in survivorship, reproductive success, and lifecycle stages of marine phytoplankton and zooplankton groups. Competence in statistical analysis of biological systems and biological modelling is essential, although further training in these will be provided.

**Age** : Not exceeding 28 years as on **31.08.2007** relaxable by five years for SC/ST and three years for OBC candidates.

Candidates should specifically note that the applications received after the closing date for any reason whatsoever (such as envelopes wrongly addressed, delivered elsewhere, postal delay etc.) will not be entertained. No representation in this regard will be considered.

Incomplete applications in any respect, will be summarily rejected.

**Applications in plain paper duly supported by attested copies of testimonials in support of educational qualifications, CSIR NET Certificate, date of birth, caste certificate, experience, etc., should reach the Administrative Officer, National Institute of Oceanography, Dona Paula, Goa – 403 004 with the advertisement No. indicated on the cover on or before 31.08.2007.**

The above position is purely temporary and only for citizen of India. Candidate selected shall **not** be treated as employee of NIO/CSIR and shall have **no** right implicit or explicit for his/her absorption in NIO/CSIR as regular employee.

**Sd/- Section Officer**