

Is Environmental Underwater Acoustics your area of expertise? If the answer is yes, this post is ideal for you.

The Centre for Maritime Research and Experimentation (CMRE) is looking for a Senior Scientist within the Research Department.

A key player in providing expertise for matters concerning Rapid Environmental Assessment and Maritime Intelligence Surveillance and Reconnaissance missions, with the aim to contribute to address the requirements of the Centre's research activity within CMRE and the NATO Nations.

1 POST CONTEXT

The Centre for Maritime Research and Experimentation (CMRE) is an executive body of the Science and Technology Organization (STO) and is governed by the provisions of the STO Charter. Within the framework of the STO in-house delivery business model, the CMRE organizes and conducts scientific research and technology development and deliver innovative field-tested S&T solutions to address the defence and security needs of the Alliance.

The post is assigned to the Research Department which conducts research oriented towards systems of systems, signal processing, decision support and physical processes. The Scientist will contribute to the Environmental Knowledge and Operational Effectiveness/Maritime Intelligence Surveillance and Reconnaissance (EKOE/MISR) Programme.

The incumbent will be responsible to support the program of work in developing and investigating innovative and cutting edge scientific research in the area of Environmental Underwater Acoustics to perform Rapid Environmental Assessment (REA), and MISR missions.

Emphasis will be placed on the estimation and forecast of the properties of acoustic signals and noise levels based on both observations and physical models and from natural and anthropogenic sources. The real-time characterization of environments of interest through the measurement of acoustic properties in situ during sea going experiments and exercises to support manned and robotic MISR operations will be the emphasis.

The Scientist will be assigned as Scientist Work Package/Team Leader within the EKOE/MISR programme and may also be involved in other projects within the CMRE Program of Work. Under the guidance of the EKOE/MISR Programme Managers and Project Leaders, the incumbent will be responsible to support the Centre's research in REA and MISR.

2 MAIN ACCOUNTABILITIES

The incumbent is responsible for leading and executing CMRE's acoustic research activities supporting the EKOE/MISR Programme. Emphasis will be placed on developing coupled acoustic environmental modelling and data-analysis that increase the

skill of underwater acoustic noise prediction. The area of primary application will be to design, implement and test at sea algorithms exploiting oceanographic and acoustic sensor measurements collected by ships, moorings and unmanned platforms. Familiarity with interfaces between oceanographic sampling, prediction techniques and acoustic performance prediction models for environmental acoustic characterization will be key.

Duties include the following:

- Under the direction of the EKOE/MISR Programme Manager and in collaboration with the accountable project leaders, the incumbent will conduct documented and peer reviewed theoretical and experimental investigations into underwater acoustic propagation, and noise characterization and forecast.
- Keeping himself/herself, his/her management and the directorate informed about activities in the Nations that are relevant to the current and future Alliance Maritime ISR requirements and solutions to maximize the effectiveness and exploitation of CMRE products and knowledge.
- Keep abreast of the latest technical and scientific principles and practices on matters pertaining to his/her component of the EKOE/MISR Programmes of Work as well as potential exploratory research areas and technology watch activities.
- Perform research in the maritime domain pertaining to underwater acoustics, rapid environmental assessment, oceanographic and geophysical sampling, and noise characterization and prediction under the guidance of the EKOE/MISR Programme managers.

The incumbent maybe required to perform other related duties.

3 ESSENTIAL QUALIFICATIONS AND EXPERIENCE

Minimum requirements for this grade:

Minimum 5 years relevant post PhD work experience;

Alternatively: minimum 8 years relevant post MSc work experience.

Experience is required in physical oceanography, underwater acoustics, physics, applied mathematics or related discipline.

- Minimum 5 years postgraduate experience in acoustics research. Experience in at least one of the following areas:
 - Undersea acoustic modeling techniques and associated numerical methods;
 - Distributed, adaptive aperture, active and passive sensor arrays;
 - Underwater noise observations and sampling strategies.
- Extensive knowledge of numerical modeling and data analysis including strong scientific programming using standard software and operating systems such as UNIX, Linux, MATLAB, Python, C/C++, FORTRAN.

- Familiarity with various acoustic propagation 2D and 3D modeling software (i.e. KRAKEN, OASIS, BELLHOP).
- A strong research record as evidenced by peer-reviewed publications.
- Most of the work of the CMRE is conducted in the English Language, and therefore a thorough knowledge of English, both written and spoken, is essential.

4 DESIRABLE QUALIFICATIONS AND EXPERIENCE

- More than 5 years' experience in underwater acoustics.
- Specific expertise in environmental assessment, ambient noise prediction, acoustic uncertainty.
- Knowledge and/or experience in MISR.
- Documented experience in acoustic tomography and inverse methods.
- Recent Scientific publications as first author/documenting results of at-sea experiments for underwater acoustic measurements.
- A publication record of more than 10 publications with 10 or more citations.
- Demonstrated experience in the role of Principal Investigator for scientific projects in the underwater acoustics domain.
- Demonstrated capability to obtain funding for new research activities and satisfying customer requirements and expectations.
- Experience in organizing and leading technical projects.
- Experience in planning and conducting sea trials and operations at sea.
- Experience working in an international organization.

5 COMPETENCIES

The ideal candidate should produce new ideas, approaches or insights, a range of solutions to problems and seek opportunities for organizational improvement. Should be able to adapt to changing circumstances in the working environment and in the business. Makes prompt, clear decisions and takes responsibility for actions and people.

The ideal candidate should show evidence of clear analytical thinking and should rapidly learn and manage knowledge effectively.

Speaks clearly and fluently; expresses opinions, information and key points of an argument clearly; makes presentations and undertakes public speaking with skill and confidence. Writes clearly, succinctly and correctly.

Demonstrates an interest in and understanding of others. Adapts to the team and builds team spirit.

Establishes good relationships with customers and staff; Builds wide and effective networks of contacts inside and outside the organization. Relates well to people at all levels.

6 INTERRELATIONSHIPS

- The post reports to the EKOE Programme Manager/Project Leader and may supervise the work of other team members within the Section.

7 WORK ENVIRONMENT

- The work may be performed in an office, laboratory or workshop environment, or on-board Centre ships.
- Slightly undesirable working conditions may apply. The risk of injury is categorized as: Moderate Risk.
- The nature of this position may require the staff member at times to be called upon to travel for work and/or to work outside normal office hours, both within and outside NATO's boundaries.

8 WHAT DO WE OFFER

- A world-class research facility located in the sea port of La Spezia, Italy supported by two specialised research vessels.
- An exciting place in which to work situated at an ideal location, the port of La Spezia, Italy, enabling synergy with regional and global academic institutes and industry.
- Salary and conditions of employment will be in accordance with the NATO Civilian Personnel Regulations (NCPR), which includes a rewarding salary and a comprehensive system of allowances, supplements and insurances to support families and, in case of expatriated staff, offers an interesting "expatriate" package.
- A generous annual leave and, (where eligible) home leave.
- The successful candidate will be offered a three years' definite duration contract (*based on the nature of the post: which may be renewed for subsequent periods subject to business needs and satisfactory performance*)
- Applicants who are not successful in this competition may be offered an appointment to a post of a similar nature, albeit at the same or a lower grade, provided they meet the necessary requirements.

9 RECRUITMENT PROCESS

- Please note that we can only accept applications from nationals of NATO member countries.
- Applications (including the most relevant publications, the diplomas – stating the highest level of education) for this vacancy are to be submitted using the E-recruitment system.

- Appointment will be subject to receipt of a security clearance (provided by the national Authorities of the selected candidate) and approval of the candidate's medical file by the CMRE Medical Adviser.

10 ADDITIONAL INFORMATION

- CMRE values diverse backgrounds and perspectives and is committed to recruiting and retaining a diverse and talented workforce. We welcome applications of nationals from all Member States and strongly encourage women to apply.
- Selected candidates are expected to be role models of integrity, and to promote good governance through ongoing efforts in their work.

For any queries, please contact CMRE Recruitment Team at: recruitment@cmre.nato.int

To learn more about the CMRE and our work, please visit our website: www.cmre.nato.int