

Infrastructure (short name)	CNR-Marine Platforms and Laboratories (CNR-MPL)	
Installation (short name)	CNR Calibration facility Trieste (MPLCAL6)	
Locations	Mediterranean Sea, Trieste (Northern Adriatic)	
Legal name of organization	Consiglio Nazionale delle Ricerche CNR	
Location of organization	Rome, Italy	
Contact	Stefano Cozzi, stefano.cozzi@ts.ismar.cnr.it Institute of Marine Sciences, National Research Council (ISMAR CNR) Trieste Branch Viale Romolo Gessi 2, 34123 Trieste, Italy Phone: +39 040 305312 - Fax: +39 040 308941	
Web site address		

Description
<p>The Laboratory for chemical analysis of CNR-ISMAR in Trieste (MPLCAL6) has been involved for at least three decades in the study of the biogeochemical cycles of the major elements (carbon, nitrogen, phosphorus and silicon) in the marine environment. This research activity has been carried out in the Mediterranean Sea and in Polar regions in the framework of several national and international research projects. An important part of this research is based on the determination of dissolved oxygen (DO), dissolved inorganic nutrients (NO₃, NO₂, NH₄, SiO₂ and PO₄), total/dissolved organic carbon (TOC/DOC) and inorganic carbon chemistry parameters (pH_T, total alkalinity, A_T).</p> <p>Laboratory methods currently available for all the parameters are listed as follows. All the methods are set up for high precision – low blank analyses in order to be suitable for oceanographic purposes. Total alkalinity and pH measures reach the high standard internationally required to calculate and study all the inorganic carbon chemistry parameters (TCO₂, pCO₂, Ω_{Ar}, Ω_{Ca},..). These measurements have been already applied either in eutrophic coastal zones and oligotrophic offshore waters. Ultrapure laboratory water is available for these analyses.</p> <p>DO: automated potentiometric Winkler titration; NO₃, NO₂, NH₄, SiO₂, PO₄: spectrophotometric manual or flow-segmented autoanalyzer methods; TOC/DOC: automated high temperature catalytic oxidation method with NDIR detection; pH: m-cresol purple spectrophotometric method; high precision potentiometric method A_T: open cell potentiometric titration.</p>
Service offered
<p>The laboratory of chemical oceanography in Trieste (MPLCAL6) is accessible for Jerico users for the above mentioned laboratory analyses. The research activity will be carried out by the assistance team of the institute, or by external users under the assistance of this team. Experimental results of the laboratory activity may be also remotely accessed on user demand.</p> <p>Laboratory work can be addressed to validation and assessment of the performances and long term reliability of chemical sensors, by their comparison with analytical laboratory methods applied</p>

to discrete seawater samples. The comparison between sensor performance and reference chemical methods can be done during in situ experiments, using the facilities of our institute available in the Gulf of Trieste, as well as during microcosm incubations in controlled ambient conditions.

Instruments/Sensors

Parameter	Method	Instruments
DO	Winkler titration	Metrohm 798 Titrino
Nutrients	Spectrophotometry	manual analysis, Technicon autoanalyzer, OI-Analytical autoanalyzer
TOC/DOC	HTCO method	Shimadzu TOC V CSH analyzer
pH	Potentiometry Spectrophotometry	Metrohm 809 Titrande Varian Cary-50 Spectrophotometer
A _T	Potentiometric titration	Metrohm 809 Titrande

Special owner rules

During access to the laboratory for experimental activities, the ground rules of CNR for external visitors will be applied.