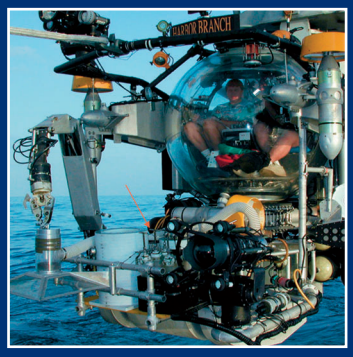
CAPSUM

ENVIRONMENT MONITORING SYSTEMS

METS
Underwater Methane Sensor

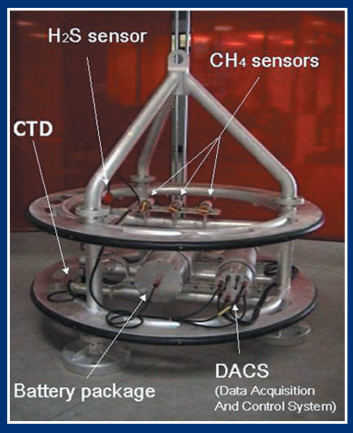
The METS methane sensor for underwater deployment is a versatile and modular platform for a number of applications. Tell us about your application and requirements, we shall then do our best to provide you with the adequate solution.



Naval Research Laboratory

Geomar

University of Bremen



Instituto Nazionale di Geofisica e Vulcanology

1999
Omlin A, Mienert J, Lukas D, Posewang J, Goelz T
"Stability of Oceanic Gas Hydrates at the Barents Sea Continental Slope: Investigations with Deep-Sea Submersibles"
Journal of Conference Abstracts, Vol 4 (1), European Union of Geosciences-EUG 10 Conference, Strasbourg, France, March 28 - April 1 1999

1999
Bussell J, Klinkhammer G, Collier R, Linke P, Appel F, Heeschen K, Suess E, de Angelis M, Masson M, Marx S"Applications of the METS Methane Sensor to the In-situ Detection of Methane Over a Range of Time Scales and Environments"
Fall AGU, San Francisco, USA, Dec. 13-17 1999

2001
Lamontagne R.A., Rose-Pehrsson S.L., Grabowski K.E., Knies D.L.
"Use of the METS Methane Sensor in the Gulf of Mexico"
Oceanography, Vol 14, No. 1

2002
Blandin J, Person R, Strout J.M., Briole P, Etiope G,Masson M, Golightly C.R., Lykousis V, Ferentinos G
"ASSEM: Array of Sensors for Long Term Seabed Monitoring of Geohazards"
Underwater Technology 2002 Conf, April 16-19 2002, Tokyo, Japan, Contribution P014

2002
Nakamura K
"Tidal Bottom Current Modulation of Chemical Environment in the Suyio Hydrothermal Site in the Izu-Ogasawara (Bonin) Arc"
EOS Trans, AGU, 83(47), Fall Meet. Suppl., Abstract V72A-1303, 2002

2002
da Silva M., Pereira I, Sikar E, Matvienko B, Rosa L, dos Santos M, dos Santos E, Lourenco R, Coutinho P
"Methane Concentration Depth Profiles in Hydroelectric Reservoir Water"
Int'al Symposium Reservoir Management in Tropical and Subtropical Regions, Sept. 26, 2002, Iguassu, Brazil

2002
Kim G, Hwang D.-W.
"Tidal Pumping of Groundwater into the Coastal Ocean Revealed from Submarine ^{222}Rn and CH_4 Monitoring"
Geophysical Research Letters, vol. 29, no. 14

2003
Christodoulou D, Papatheodorou G, Ferentinos G, Masson M
"Active seepage in two contrasting pockmark fields in the Patras and Corinth gulfs, Greece"
Geo-Mar Lett., 23:194-199

In press
Marinaro G, Etiope G, Gasparoni F, Calore D, Cenedese S, Furlan F, Masson M, Favali P, J. Blandin
"GMM - A Gas Monitoring Module for Long-Term Detection of Methane Leakage from Seafloor"
Environm.Geology

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www.capsum.com

NEW in 2004 the K-METS

CAPSUM

ENVIRONMENT MONITORING SYSTEMS

To address a wider range of needs, we developed the K-METS, a version suited for mobile deployments.

METS is supported by different CTD-probes (Seabird, FSI, SST)
We can provide a dedicated data logger and battery package, as well as fully terminated specific underwater cable contact us for details.

Specification summary:

K-METS: prototype pressure-proofed at 490 bar, T90 full range currently 1 min, suited for ROVs, AUVs or event detection. Equipped with a removable head, allowing easy replacement and the use of heads with different specifications (range or change from methane to hydrogen detection).

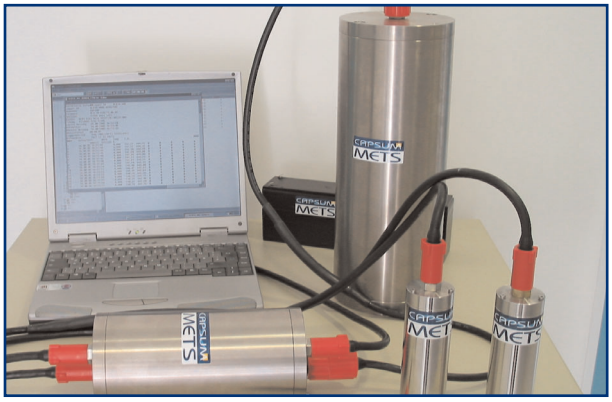
Specification summary:

Classical METS: deployment depth 3500m, T90 full range between 5 and 30 min depending on local turbulence conditions, suited for long term monitoring (bottom landers, underwater observatories, moorings) or low-speed profiling

NEW in 2004 the HYDROS

underwater hydrogen sensor

Scientist Ko-ichi Nakamura from AIST, Japan reports from the first field deployment: "your H2 sensor worked fine during the YK03-09 cruise at hydrothermal sites in the Marianas in November 2003, i.e., reasonable sensitivity and response". Further cruises are planned, for the study of H2 emission in buoyant hydrothermal plumes in Marianas, Okinawa Trough and at the Juan de Fuca Ridge in 2004. Comparative tests with other sensing devices will also be carried out to clear eventual cross-sensitivity problems to other reducing gases. Final validation of the HYDROS is planned by Summer 2004. The current specification offers a detection range of 4 to 100 nmol/l to a working depth of 3500m.



Both devices with standard operational range 50 nM – 10 mM methane concentration and 2-20°C temperature, other ranges possible

With compliments:

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