



Live Demo 2023 - Day 1

Wednesday 20 SEPTEMBER 2023- Pavillion 6

FerraraEXPO, Via della Fiera 11, Ferrara (Italy)



07.50 – 10.20 EDT (Eastern Daylight Time)



08.50 – 11.20 BRT (Brazil Standard Time)



13.50 – 16.20 CEST (Central European Summer Time)



17.20 – 19.50 IST (Indian Standard Time)



19.50 – 22.20 CST (China Standard Time)

Opening

13:50 Meeting at the entrance of Pavillion 6 with the Chairs

Marco Falconi (ISPRA), Giovanni Savarese (ARPA Lazio), Paola Grenni (CNR)

14:00 3D-Georadar

Maurizio Porcu (Codevintec)

14:20 Polyethylene Passive Samplers

Guido Bonfedi (ENI), Antonella Vecchio (ISPRA)

14:40 Qualitative and quantitative analysis with LIBS technology

Luca Marta, Chiara Fumagalli, Luca Lorenzi (Smart NDT)

15:00 *Coffee break in field*

15:10 Vapor Pin[®], a device for soil gas sub slab

Laurie Chilcote (Cox-Colvin), Alessia Fortunati (Ecosearch)

15:30 UVOST[®] system

Claudio Carusi (Mares), Eugen Martac (Fugro), Thilo Hartung (Fugro)

15:50 Thearen Non Stationary Flux Chambers

Luca Spinelli (Thearen)

16:10 Gadgets and certificates

16:20 End of the session

Register yourself in the Google form <https://forms.gle/ERb76pNivRvDerut6>



CODEVINTEC

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The Kontur 3D GPR gives the unique combination of surface penetration and high-resolution data. It detects objects, holes or structures below the earth's surface: pipes, cables, pipelines or buried barrels... During the demonstration we'll check the GPR's ability to detect, visualize and locate position and depth of buried objects of various materials, with an high density 3D subsurface imaging.

Relevant technical specifications of the 3D GPR will be shown:

- achieving optimal resolution at all depths, thanks to the Step-frequency technology
- high-resolution subsurface imagery in 3D
- extremely high work rate
- new handy cart for surveys in little spaces, churches, castles...

The key advantages are: saving time compared to conventional GPRs, avoid explosion hazards, avoid pre-excavations, accuracy in locating objects, and ease of use.



rewind

remediation & waste into development

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The passive sampling technique using low density polyethylene sheets is a monitoring methodology, developed in cooperation with Eni research, the University of Rome Tor Vergata and the Massachusetts Institute of Technology, that makes it possible to assess the leaching of contaminants from soil to groundwater and their volatilisation from soil to surface use, based on the use of films of polyethylene (LDPE). This makes it possible to quantify the distribution of organic contaminants in sediments and soils and volatile organic compounds in soil gas, with the



aim of identifying more targeted environmental interventions. The passive sampling is also being studied within the scope of the agreement between Unione Energie per la Mobilità (the former Petroleum Union), and ISPRA-SNPA, aimed at developing innovative reclamation and sampling methods. The objective is to test and validate its applicability as a simple and alternative tool to traditional monitoring systems.



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Z-903 analyzer represents the latest innovation in LIBS portable spectroscopy with an extended spectrometer range from 190 nm out to 950 nm, which allow to detect whole elements from H to U.

SciAps LIBS technology exploit a 1064 nm IR laser in order to create plasma on the surface of the sample in a small area. In this way the sample emits UV and visible electromagnetic radiation which is detected by one of the 3 detectors inside the analyzer. The resulting spectra is a powerful tool to discover the presence of elements in ppm, but also to customize calibration curves to obtain precise quantitative analysis directly on the field.

Z-903 technology is widely used for mineral and soil exploration, including lithium in both hard rocks and brines. It is also used for forensic, authentication, archeology and oil/gas exploration due to the wide elemental range.



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The Vapor Pin® Sampling Device provides a leak proof conduit for measurement and/or collection of samples in support of site characterization, sub-slab soil-gas sampling (long or short term), depressurization studies/testing, stray gas evaluations, pressure, temperature, pilot testing and mitigation progress monitoring and many more. The new Vapor Pin® Insert is used to facilitate the collection of soil gas samples and pressure measurements beneath engineered vapor intrusion barriers.

Measuring soil gas sub slab has several advantages compared to other measurements when it comes to assessing soil gas contamination.

Directly reflects indoor air quality: Soil gas sub slab measurements provide a direct indication of the potential for soil gas intrusion into indoor spaces. Since soil gases, such as radon, can migrate from the ground into buildings through cracks and openings in the foundation.

Proximity to potential sources: Measuring soil gas sub slab allows for sampling in close proximity to potential sources of soil gas contamination, such as underground storage tanks.

Early detection: Monitoring soil gas sub slab can help in the early detection of soil gas intrusion issues. By regularly measuring soil gases beneath the foundation, any changes or increases in gas concentrations can be identified promptly, allowing for timely mitigation measures to be implemented to protect indoor air quality.





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The Ultra-Violet Optical Screening Tool (UVOST) technology developed by Fugro is an advanced method for characterizing contaminated soil and groundwater. This tool uses ultraviolet light to identify and evaluate the presence of petroleum hydrocarbons, such as gasoline, diesel and lubricating oils, in soil and groundwater.

The operation of the UVOST system is based on fluorescence induced by ultraviolet light. A probe is used that emits UV light on a specific wavelength into the soil or monitoring well. When the light hits the hydrocarbons present, they emit fluorescence that is detected and measured by the probe. UVOST technology offers many advantages over traditional chemical sampling and analysis methods. It is a noninvasive method that enables real-time results, reducing investigation time and cost. In addition, it can provide detailed mapping of hydrocarbon concentrations in the soil, enabling more accurate assessment of contamination and better remediation planning. Overall, Fugro's UVOST technology is providing rapid and accurate data that help make informed decisions for the management and remediation of areas affected by the presence of hydrocarbons.



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THEAREN together with the Polytechnic University of Milan has designed a dynamic flow chamber that overcomes the limitations and criticality of "old-fashioned" flow chambers by enabling quantitative sampling and analysis. With the innovations introduced by THEAREN, the flow chamber has become quantitative.

- Ensures controlled and validated fluid dynamics due to the carrier blowing modes and windbreak system, which ensure complete mixing and avoid air intrusion from the wind
- Ensures complete chemical inertness due to the structure made entirely of PTFE
- Ensures complete thermal inertia even under extreme conditions due to the thickness of the opaque surfaces

