



Assessorato all'Università e Ricerca Scientifica,
Innovazione Tecnologica e Nuova Economia,
Sistemi Informativi e Statistica



INTERNAZIONALIZZAZIONE DEI Centri Regionali di Competenza



INNOVA – Regional Competence Centre for the Development and Transfer of Innovations in Cultural and Environmental Heritage

The activities carried out by INNOVA are focused in three macro-areas of the cultural and environmental heritage sector: diagnostics, conservation and renewal, promotion and use.

The Principal Outputs

Advanced Diagnostics Plurithematic Laboratory

The laboratory is capable of gathering morphological and compositional information on a wide range of materials in a varied states of conservation, thanks to the advanced instrumentation with which it is equipped (ESEM-EDS integrated microscope with detector and superconductor, scanning magnetic microscope with SQUID superconductor sensor, integrated system consisting of Fourier Transform Infrared Spectrometer (FTIR) and FTIR microscope, multi-functional wide-angle X-ray scattering diffractometric system(WAXS)).

In particular, this is only the fourth scanning magnetic microscope (SQUID) installed in the world (research laboratory in Korea, research laboratory in United States, United States Armed Forces) and the first in Europe. The possible sectors that may benefit from this highly innovative piece of equipment are still the subject of international in-depth examination.

Radiocarbon Dating Systems

For this purpose INNOVA has created an advanced research structure, *CIRCE Center for Isotopic Research on the Cultural and Environmental heritage*, whose flagship is the Ultrasensitive Mass Spectrometry system, based on the 3MV terminal tandem accelerator, for detecting the presence of uranium and plutonium isotopes in the subsurface and for the IRMS analysis technique. The mass spectrometry of stable isotopes of nature's most common elements is a powerful means of investigation extensively used in a wide spectrum of the sciences applied to cultural and environmental heritage. The great advantage of the ultrasensitive mass accelerator technique lies in being able to carry out the measurement, using just a few milligrams of the material, without damaging or destroying the find. In addition the measurements are taken in just a few minutes.

Analysis of Damaged and Poorly Represented DNA

Today it is possible to analyse damaged and poorly represented DNA thanks to the PCR (Polymerase Chain Reaction) technique which allows for the exponential and faithful increase of the copies of the DNA fragment examined, even when starting from a single molecule. This technique is usually applied to DNA extracted from fossils used in paleontological, historical and genetic studies. This experience and competence, developed under "extreme" genetic conditions, have allowed INNOVA's researchers to apply the methods developed for ancient remains to other sectors that work with damaged DNA. For example, they are used in the agricultural and food industry to guarantee food quality and safety, for example of meat, and for establishing threshold level values of GMOs, in forensic medicine, and in the leather industry.

Structure

INNOVA's strength lies in having created a network of excellence of integrated competences (human resources and instrumentation) in the field of applied research in Cultural and Environmental Heritage, in the high level of innovation of its output and in the integrated systems offered that, with regards to the wide range of applications of the products and services supplied, are hardly rivalled domestically or internationally.

INNOVA's services are a benchmark for all Cultural and Environmental Heritage sector operators, including those that presently manage technology developed by third parties.

The Competence Centre performs assistance work for the development of technological innovations, guaranteeing a direct link to the economic fabric and in particular to SMEs and

external organizations interested in integrating the results of the research developed, in maximising the use of the products of the research carried out and in the transfer of new target or cross-sectional technologies.

INNOVA backs enterprises interested in the field of research and technological transfer, identifying possible cross-sectional applications of its integrated services.

INNOVA puts together, integrates and strengthens groups made from more than 320 researchers in all the technico-scientific fields involved in the development and transfer of innovations in Cultural and Environmental Heritage.

Potential Market

The beneficiaries of INNOVA's activities are: Local Bodies, Supervisory Bodies, Museums, Regional and National Parks, Enterprises involved in the field of research and technological transfer in Cultural and Environmental Heritage.

Commissioning Bodies/Clients

ANCE – AFM Edilizia; University of Florence; INGV; SITARC; University of Rome La Sapienza; University of Siena; University of Palermo; University of Trento; University of Pisa; University of Calabria; Universidad del Pais Vasco Spain; Gesarke Spain; GEA ARQUEÓLOGOS Spain; ÁREA S.COOP. MAD Spain; ONDARE BABESA SL Spain; Mondadori Electa S.p.A.; PSAE Supervisory Body of Calabria; Municipality Monte Procida; Municipality of Cave; University of Perugia; Regional Administration for Cultural and Environmental Heritage of Basilicata; SUDGEST; INFN; SiReNA; CNA; Supervisory Body for Archeological Heritage of Salerno, Avellino, Benevento; Geokarst Eng.; Municipality of San Giorgio a Cremano; Municipality of Modena; Monti Picentini Mountain Community; IRIDE; Cilento Vallo di Diano National Park; Regional Administration for Cultural and Environmental Heritage of Campania; Compagnia di San Paolo Art Foundation; Bagnolifutura S.p.A; ICVB.

Technological contact

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