Alessandro Croce

PERSONAL DATA

Born in Novi Ligure (Al) on 11.7.1983.

He lives in Novi Ligure.

BIO AND EDUCATION

Born in Novi Ligure on 11th July 1983, Alessandro Croce graduates in "Environmental Science and Territorial Management" in 2006 and, in 2008, in "Study and Management of Natural and Anthropized Environments", at the University of Eastern Piedmont "Amedeo Avogadro", grades 110/110.
During the years 2009- 2010, in the same University, he addressed the research activity to the mineralogical field (Scientific Supervisor: Prof. Caterina Rinaudo), thanks to scholarships.
In 2014, he attains the Ph.D. degree in Environmental Sciences (Internal waters and agro-ecosystems), with a thesis "Study of carcinogenic mineral fibers in biological samples".
Since 2014, he works in the research group of "Environmental Mineralogy", coordinated by Prof. Caterina Rinaudo.

UNIVERSITY CAREER

2014-oggi	Research fellow
2010-2013	Ph.D. student
2009-2010	Scholarship

MAIN FIELDS OF INTEREST

1. Electron Microscopy
2. Micro-Raman spectroscopy
3. Asbestos
4. Histological sections
5. Asbestos-related diseases

CURRENT ISSUES OF RESEARCH

Morphological, chemical and crystallographic characterization of asbestiform minerals in various matrixes.

In the study different techniques: Optical Microscopy, X-Ray Diffraction, Scanning Electron Microscopy with annexed chemical microanalysis, Micro-Raman Spectroscopy are used for an in-depth characterization under the morphological, chemical and mineralogical aspects of minerals grown with fibrous habit. These minerals represent a severe hazard for the human health. Various matrixes containing fibrous minerals are analyzed: air, water, rocks, sediments and biological media.

Count of fibers and asbestos bodies in samples from patients affected by asbestos-related diseases and/or tumors of biliary or of gastroenteric system.

Fibers or "asbestos bodies" incorporated in biological tissues are characterized without digestion of the cell material. Environmental Scanning Electron Microscopy with annexed Scattering Dispersion Spectroscopy (VP-SEM/EDS) and Micro-Raman Spectroscopy are used for the characterization. Both techniques do not require digestion of the biological medium, allowing to be applied directly in the thin sections used for the medical diagnosis.

TOP FIVE PAPERS

1. A. BLOISE, T. CRITELLI, M. CATALANO, C. APOLLARO, D. MIRIELLO, A. CROCE, E. BARRESE, F. LIBERI, E. PILUSO, C. RINAUDO, E. BELLUSO, (2014) Asbestos and other fibrous minerals contained in the serpentinites of the Gimigliano-Mount Reventino Unit (Calabria, S-Italy), Environmental Earth Sciences, **71**/8, 3773-3786.
2. F. QI, G. OKIMOTO, S. JUBE, A. NAPOLITANO, H.I. PASS, R. LACZKO, R. DEMAY, G. KHAN, M. TIIRIKAINEN, C. RINAUDO, A. CROCE, H. YANG, G. GAUDINO, M. CARBONE, (2013) Continuous exposure to chrysotile asbestos can cause transformation of human mesothelial cells via HMGB1 and TNF-α signaling, American Journal of Pathology, **183/5**, 1654-1666.
3. A. CROCE, M. MUSA, M. ALLEGRINA, C. RINAUDO, Y. I. BARIS, A. U. DOGAN, A. POWERS, Z. RIVERA, P. BERTINO, H. YANG, G. GAUDINO, M. CARBONE, (2013) Micro-Raman spectroscopy identifies crocidolite and erionite fibers in tissue sections, Journal of Raman Spectroscopy, **44**, 1440-1445.
4. A. VIANI, A.F. GUALTIERI, S. POLLASTRI, C. RINAUDO, A. CROCE, G. URSO, (2013) Crystal chemistry of the high temperature product of transformation of cement-asbestos, Journal of Hazardous Materials, **248-249**, 69-80.
5. C. RINAUDO, A. CROCE, M. MUSA, E. FORNERO, M. ALLEGRINA, P. TRIVERO, D. BELLIS, D. SFERCH, F.TOFFALORIO, G. VERONESI, G. PELOSI (2010) Study of inorganic particles, fibres and asbestos bodies by VP-SEM/EDS and micro-Raman spectroscopy in thin sections of lung and pleural plaque. Applied Spectroscopy, **64/6**,571-577.