

# Caterina Rinaudo

## *Curriculum vitae*

### BIO AND EDUCATION

Caterina RINAUDO was graduated *summa cum laude* in Natural Sciences at the University of Turin in 1974.

In 1976 she won competition for a grant of CNR and began her scientific activity at the Institute of Mineralogy, Crystallography and Geochemistry of the University of Turin, now in the Department of the Earth Science.

In 1978 she moved to the “Laboratoire de Minéralogie-Cristallographie” and “Centre de Recherche sur les Mécanismes de la Croissance Crystalline” of the University of Aix-Marseille III, where she initiated a scientific collaboration with Prof. R. Boistelle, Research Director in the French Laboratory. She returned in 1980 to the University of Turin at the Department of Mineralogical and Petrological Sciences, but the collaboration with Prof. R. Boistelle continued during the years.

In 1992 she was awarded a CNR-NATO grant, and moved once again to France, this time to the “Laboratoire de Minéralogie-Cristallographie” at the University Pierre et Marie Curie-ParisVI.

From 1993 she is Professor of Mineralogy at the University of Eastern Piedmont.

### UNIVERSITY CAREER

2006-2016	Full Professor, University of Eastern Piedmont
1993-2006	Associate Professor, University of Turin, after University of Eastern Piedmont
1992-1993	Associate Professor, University of Bari
1980-1992	Researcher, University of Turin
1976-1980	Research grant, University of Turin

### UNIVERSITY POSITIONS

2005-2006	Director of a Master “Ruolo della valutazione di impatto ambientale e dell’analisi di rischio ecologico nella certificazione ambientale”, University of Eastern Piedmont.
2006-2009	President of the Degree Course “Environmental sciences and environment management”, and of the advanced degree “Study and management of natural and anthropized environments”, University of Eastern Piedmont.
2008-2012	President of the Joint Committee Teachers-Students for the Didactics in the

	University of Eastern Piedmont.
2009-2010	Director of Cenisco (Interdepartmental Centre for Studies and Management of the Cultural Heritage).
2008-2013	Delegate of the University of Eastern Piedmont in the Board of Edisu (Regional Board for the Right to the Study).
2012-2013	Director of master "Analysis and management of the hazard for the environment and the human health from containing asbestos wastes, University of Eastern Piedmont.

### SCIENTIFIC POSITIONS

2012-2013	Scientific Director of a course addressed to technicians of the municipalities of the Piedmont Region on the management of the asbestos removal in the area of Casale Monferrato.
2013-2014	Scientific Direction of a course "Asbestos: techniques for identification, laws, hazard analysis and management, help desks in the municipalities".
2013-2016	Member of Technical-Scientific board of ARPA-Piedmont.
2014-2016	Member of Scientific board of "Interdepartmental Centre Scansetti for studies of asbestos and other toxic particulates".

### MAINFIELDS OF INTEREST

1. Asbestiform minerals
2. Asbestos
3. Raman Spectroscopy
4. Electron Microscopy

### CURRENTISSUES 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 phases 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 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 (PV-SEM/EDS) and Micro-Raman Spectroscopy are used for the characterization. Both techniques do not require digestion of the biological matrix, allowing to be applied directly in the thin sections used for the medical diagnosis.

#### CURRENT FUNDED PROJECTS

PROGRAMME	FUNDED PROJECT
CRT 2014	"Is colangiocarcinoma related with environmental or working exposure to asbestos fibers?"
ASL AL	Count of fibers and asbestos bodies in samples from patients affected by asbestos-related diseases and/or tumors of biliary or gastroenteric system. Part of the" Global research project directed to care and preventing for diagnosis and treatment of Mesotelioma"

#### TOP FIVE PAPERS

1. R.Boistelle and C.Rinaudo: "Phase transition and epitaxies between hydrated orthorhombic and anhydrous monoclinic uric acid crystals", Journal of Crystal Growth, 1981, **53**, 1-9.
2. C.Rinaudo, D.Gastaldi and E.Belluso: "Characterization of chrysotile, antigorite and lizardite by FT-Raman Spectroscopy", The Canadian Mineralogist, 2003, **41**, 883-890.
3. C.Rinaudo, E.Belluso and D.Gastaldi: "Assessment of the use of Raman spectroscopy for the determination of amphibole asbestos", Mineralogical Magazine, 2004, **68(3)**, 455-465.
4. C.Groppo, C.Rinaudo, D.Gastaldi, S.Cairo and R.Compagnoni: "Micro-Raman spectroscopy for a quick and reliable identification of serpentine minerals from ultramafics", European Journal of Mineralogy, 2006, **18**, 319-329;
5. C.Rinaudo, A.Croce, M.Musa, E.Fornero, M.Alleggrina, P.Trivero, D.Bellis, D. Sferch, F.Toffalorio, G.Veronesi and G.Pelosi: "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, 2010, **64**, 571-577.