

MARIA FRANCA BRIGATTI

In 1971, Maria Franca Brigatti graduated in Geological Sciences at the University of Modena, where she developed the greatest part of her scientific activity and where she is now serving as full professor of Mineralogy. Soon after graduation, she started her scientific activity, mostly devoted to relate chemical properties of zeolites, and layer silicates to the crystallization environment. The greatest part of this activity was performed at Modena University, where she became researcher, after earning several temporary grants, with the relevant exception of a long training and research stay at the CNRS of Orleans, France. In the meantime, the research activity was enlarged to other topics, such as the crystal chemistry of micas, exchange and adsorption processes between ions in solution and phyllosilicates and crystal chemistry of accessory phases and unusual minerals. These themes are also the ones characterizing her present research. In 1986 she became associated professor of Mineralogy at the Basilicata University, keeping the course of Mineralogy for Chemistry students. In 1990 she moved back to Modena, where she became full professor of Mineralogy in 2000. The scientific activity is well evidenced by more than 170 scientific contributions, mostly reported on international journals and would never have been possible without the engaged support of the research group and benefits obtained from stages at international laboratories such as: i) Stanford University; ii) Beijing University Synchrotron Radiation Laboratory; iii) ESRF facilities. .

Other important dates are:

1995. She is associated editor of Clay Minerals

1998. She is member of the AIPEA nomenclature commission

1999. She is treasurer of AIC (Italian Crystallographic Association), 1999-2003.

2000. She is the Italian representative at the IMA commission for Applied Mineralogy (2000-present time)

2001. She is associated editor for American Mineralogist (2001-2005).

2002. She was elected president of the Italian Mineralogical and Petrographic Society (SIMP) for the years 2002-2004.

2003. She was the chair of Euroclay2003, the European meeting of AIPEA in Modena attended by more than 500 researchers.

2004. She is guest editor for the Applied Clay Science volumes devoted to Euroclay2003

2004. She served MSA in the Committee on Committees.

2004. She is treasurer and council member for European Mineralogical Union (2004-present time)

2005. She was the chair of the meeting Micas@Italy

2005. She is awardee the Brindley Award promoted by Clay Mineral Society to acknowledge distinguished researches on layer silicates.

2006. She is fellow of Mineralogical Society of America

2008. She is awarded by the Italian Government prize for Mineralogical Studies.

2010. She is member of the "Award Committee of Clay Minerals Society".

2011 She organized the EMU School on Layered minerals (Roma, 9-19 July 2011) at the Accademia dei Lincei

2011 She was awarded the "Ragno d'oro" prize by UNICEF.

2011 She is member of the Italian Academy "Accademia Nazionale dei Lincei"

2012 She is Associated Editor for Canadian Mineralogist.

2012 She is the Director of the Chemical and Geological Sciences Department of Modena and Reggio Emilia University.

2012 She is member of the "Senato Accademico" (Modena and Reggio Emilia University)

Scientific Activity

- Crystal chemistry of micas. The aim of these studies is to correlate chemical composition of micas to structural and genetic features. An important deliverable on this field was the realization of a review chapter on *Reviews in Mineralogy and Geochemistry*, including a unique crystal chemical and structural characterization for micas. The main experimental technologies supporting this study, are electronic and ionic microprobe analyses, single crystal X-ray diffraction and X-ray adsorption spectroscopy, when requiring a detailed investigation of cation local ordering.
- Exchange and adsorption processes between ions in solution and phyllosilicates. The interaction of layer silicates with heavy cations in solution and organic matter is of primary theoretical and applicative importance, especially when considering the diffusion of polluting phases in soils. The internationally recognized scientific production on this field was also supported by the introduction of advanced experimental techniques, such as X-ray adsorption spectroscopy.
- Crystal chemistry of accessory phases and unusual minerals.

This activity includes the detailed crystal chemical characterization of: i) pseudobrookite and armacolite, ii) warwickite and chayesite, iii) REE-rich apatite, iv) a rare lizardite- $2H_2$ polytype, v) poppote, a new mineral representing the V end-member of the pumpelliite series, recently discovered in Val Graveglia; vi) rossiantonite, a new mineral from Argentina.

- Statistic investigation on systematic compositional variation, for selected mineral groups or families.

This activity was intended to relate chemical properties of zeolites, and layer silicates to the crystallization environment.

Teaching and Academic activity

The teaching activity of Maria Franca Brigatti, started in 1975, took place almost completely at the University of Modena and Reggio Emilia. A significant exception is provided by the 4 years spent at the University of Basilicata, where she was in charge of the course of Mineralogy for Chemistry students. She is currently in charge of the following courses:

- Mineralogy
- Applied Mineralogy
- Mineralogy and Crystallography
- Mineralogy applied to the control of polluting phases
- Environmental Mineralogy
- Laboratory of Environmental Mineralogy

Moreover she followed and coordinated numerous master and PhD theses. She was involved in the organization of numerous schools, PhD courses and conferences.

She is currently chairman of the course of study on: i) Master of Natural Sciences; iii) Advanced course of studies for specialist in "Environmental Protection".

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