

Gabriele Giuli

CURRICULUM VITAE ET STUDIORUM

PERSONAL DATA:

[REDACTED]

CURRENT POSITION:

Associate Professor at University of Camerino (UNICAM) from 1/3/2018.

ADDRESS:

School of Science and Technology, Geology division, University of Camerino.

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DEGREES:

- Laurea cum laude in Geology (University of Camerino, 13/4/1994);
- PhD in Crystallography (University of Firenze, 22/5/1998);

GRANTS:

- British Council grant (University of Bristol, UK, 1994);
- PhD at University of Firenze (1994-1997);
- HCM Eu grant at Bayerisches Geoinstitut, Universitat Bayreuth (D), (1994-1997)
- Post Doc. grant in Mineralogy at University of Firenze (1998-1999);
- "Assegno di ricerca" in Mineralogy at University of Camerino (1999-2003);
- Contract Researcher at the University of Camerino (2004-2008);

RESEARCH FUNDS

- Young researcher funds (UNICAM) for:
 - structure and redox of impact glasses (A.A. 2001-2002);
 - aliovalent P-Si substitution mechanism in olivines (A.A. 2002-2003).
- MIUR funds for PhD grants:
 - Si-P substitution in olivines (2008)
 - phosphate olivines used for Li-batteries (2009)
 - V-doped phosphate glasses (2010, 2011)
- FIRB (futuro in ricerca 2008) S-Fe interaction in silicate glasses and melts (PI)
- VIGONI mobility funds (2011-2013) for research activity in Germany (**resp. for Italian party**)
- CNR PNRA funds (2014-2015) for research in Antarctica (**Local resp.**)
- CNR PNRA funds (2017-2019) for research in Antarctica (**Local resp.**)
- FAR funds (Unicam, 2015-2017) for REE behaviour in minerals and glasses (PI)
- main proposer of approved experiments at ESRF (Grenoble, F), ELETTRA (Trieste, I) and SSRL (Stanford, USA)

PERIODS SPENT ABROAD:

- Bristol (UK) at "Dept. of Geology", (1/3/93-31/7/93);
- Bayreuth (D), at "Bayerisches Geoinstitut", (6 months from 1994 to 1997);
- Stanford (USA) at SSRL, University of Stanford (5 months from 1995 to 2003);
- Grenoble (F), at ESRF as visiting scientist (1 month 2006)
- Muenster (D) at Uni-Muenster as visiting scientist (3 weeks, 2013)
- Mission in Antarctica (Zucchelli station) for meteorite search (1.5 months, 2015)
- Dash e Lut desert (Iran); mission for meteorite search (2 weeks, 2017; 1 week, 2018)

PUBLICATIONS

80 PAPERS in ISI journals, ~1400 cites, H=22.

RESEARCH ACTIVITY:

- **Structural role of transition elements and trace elements in minerals, silicate glasses and melts.**
Study of the local structural environment and oxidation state of transition elements in minerals and their synthetic analogues by combining element-specific spectroscopic techniques (such as XAS) and long range structural techniques (X-ray diffraction).
Also the structural environment of Transition elements and REE in silicate glasses are studied in connection with the glass physical properties (viscosity, density, optical properties) and redox/temperature conditions.
- **Synthesis of silicate crystals and glasses at high temperature and/or pressure**
Synthesis of crystalline silicates, oxides, phosphates, and silicate glasses aimed at structural studies or aimed at studying materials with technological applications (Li-ion batteries, lasing glasses, ceramic material).
- **X-ray Absorption Spectroscopy (XANES, EXAFS).**
Methodological studies on the use of XAS for studying redox and structural environment of diluted elements in crystals and glasses by means of pre-edge peaks, theoretical XANES calculations, combination of XANES, EXAFS, and XRD.
Application of XAS to mineralogical and geochemical problems
- **Powder- and single crystal- X-ray Diffraction.**
Structural studies of minerals and their synthetic analogues
- **Structural and geochemical study of impact glasses.**
Study of the Fe redox and water content in glasses formed during hypervelocity impacts aimed at deciphering formation conditions and redox/temperature conditions during melt formation and transport of distal ejecta.

INVITED SEMINARS:

- University of **Bologna**: "Impact glasses" workshop on "amorphous materials" organised by Gruppo Nazionale di Mineralogia (GNM) (21-4-2005)
- University of **Munich (D)**: "Glass structure by X-ray Absorption Spectroscopy" at the Dept. of Geological and Environmental Sciences, (2-5-2005 / 5-5-2005);
- ESRF, **Grenoble (F)**: "Iron oxidation state in impact glass by high-resolution XANES spectroscopy: implications on the formation conditions". Invited talk at the 2006 ESRF User Meeting, ESRF Highlights 2005, 20-21.
- University of **Berlin (D)**: "Micro XANES: crystal orientation effects on the XANES spectra. Possible applications to meteoritic studies". Humboldt Universität, Ottobre 2008.
- University of **Modena and Reggio-Emilia**: "Application of XAS and XES to the study of amorphous materials". Dept. of Material Engineering, April 2009.
- University of **Vienna (A)**: "The structure and properties of silicate melts and glasses: information from XAS and XES". Dept of Lithospheric Research, June 2010.
- invited keynote talk at **IMA 2010** (International Mineralogical Association), Budapest, 2010: "Tektites and microtektites Fe oxidation state and water content".
- Invited keynote talk at **AIC 2012** (Associazione Italiana di Cristallografia), Verona, 2012: "Local vs long range structure: combining information from XAS and XRD. The case of kimzeyite garnet".
- GNM workshop on New minerals: Studio spettroscopico dei minerali amorfi: l'esempio della santabarbarite. Padova, June 17-18 2013.
- Accademia dei Lincei: Tektites and impact glasses: an unexpected way of unraveling silicate glasses structure and physical properties (Rome, I, June 13-14, MINERAL PHASES AND SYNTHETIC ANALOGUES IN EARTH AND MATERIALS SCIENCE).
- Invited speaker at the international school "Physical Properties of Minerals" organised by the National Mineralogical Group (GNM) and Italian Society of Mineralogy and Petrology (SIMP) (Bressanone, I, 12-15 February 2018).

INSTITUTIONAL ACTIVITIES:

- Departmental responsible for internationalization at UNICAM for LM74, L34, L43;
- Responsible of the X-ray Diffraction Laboratory at the Geology Div., UNICAM;
- PhD board (collegio dei docenti) at the School of Science and Technology-Geology div., UNICAM;
- reviewer for VQR;
- Chief Accountant of the Italian Society of Mineralogy and Petrology (SIMP) from 2009 to 2014;
- Review Panel Committee at ESRF, Grenoble, F (from sept 2017 to oct 2020)

ORGANIZATION OF MEETINGS AND SCHOOLS:

- local organising committee and secretary of the National Meeting of the “Società Italiana Luce di Sincrotrone” (SILS) (Camerino, 2004, 2009) ;
- Local organising committee of the International meeting of the XAFS Society “XAFS XIV” (Camerino, 2009);
- International school of Crystallography “AICS2011: Crystallography Beyond Diffraction” Camerino (I), 4-8 July 2011 Organised in Collaboration with Associazione Italiana di Cristallografia (AIC);
- International school of Crystallography “AICS2013: Crystallography Beyond Diffraction” 4-8 September 2013. Organised in Collaboration with Associazione Italiana di Cristallografia (AIC) and Società Italiana di Mineralogia e Petrologia (SIMP);
- Organising committee of the international meeting “5th Natural Silicate glasses” at University of Firenze, 22-24 Aug. 2013.
- Convenor of the Mineralogy session at the 3rd joint AIC-SILS conference (Rome, 25-28 June 2018, I)

REVIEWER ACTIVITY

for ISI journals: American Mineralogist, Geochimica et Cosmochimica Acta, Chemical Geology, Meteoritics and Planetary Sciences, Physics and Chemistry of Minerals, European Journal of Mineralogy, Lythos, Journal of Non Crystalline Solids, Neues Jahrbuch für Mineralogie, Earth and Planetary Science Letters.

PUBLICATIONS LIST (present-1996)

- 80) Chicco J., Verdoya M., Giuli G., Invernizzi C. (2019) Thermophysical properties and mineralogical composition of the Umbria-Marche succession (Central Italy). *Geological Society of America Special Paper* 542, 59-67. doi.org/10.1130/2019.2542(02)
- 79) Maroni F., Bruni P., **Giuli G.**, Brutti S., Croce F. (2019) Electrospun Carbon/Cu_xO nanocomposite material as sustainable and High performance anode for Lithium-ion batteries. *Chemistry Open*, **8**, 781-787. DOI: 10.1002/open.201900174
- 78) Pittarello L., Goderis S., Soens B., McKibbin S.J., **Giuli G.**, Bariselli F., Dias B., Helber B., Lepore G.O., Vanhaecke F., Koeberl C., Magin T.E., Claeys P. (2019) Meteoroid atmospheric entry investigated with plasma flow experiments: Petrography and geochemistry of the recovered material. *Icarus*, **331**, 170-178. 10.1016/j.icarus.2019.04.033
- 77) Rochette P., Bezaeva N.S., Kosterov A., Gattacceca J., Masaitis V.L., Badyukov D.D., **Giuli G.**, Lepore G.O., Beck P. (2019) Magnetic Properties and Redox State of Impact Glasses: A Review and New Case Studies from Siberia. *Geosciences*, **9**, 225. 10.3390/geosciences9050225
- 76) Nazzareni S., Nestola F., Zanon V., Bindi L., Scricciolo E., Petrelli M., Zanatta M., Mariotto G., **Giuli G.** (2019) Discovery of moissanite in a peralkaline syenite from the Azores Islands, *Lithos*, **324-325**, 68-73. Doi: 10.1016/j.lithos.2018.10.036
- 75) Ma Y., Ma Y., **Giuli G.**, Diemant T., Behm R.J., Geiger D., Kaiser U., Ulissi U., Passerini S., Bresser D. (2018) Conversion/alloying lithium-ion anodes- Enhancing the energy density by transition metal doping. *Sustainable Energy Fuels*, in press. doi: 10.1039/C8SE00424B
- 74) Ventura M., Mullaliu A., Ciurdac D.E., Zappoli S., **Giuli G.**, Tonti D., Enciso E., Giorgetti M. (2018) Thin layer films of copper hexacyanoferrate: Structure identification and analytical applications. *Journal of Electroanalytical Chemistry*, **827**, 10-20. doi: 10.1016/j.jelechem.2018.08.044
- 73) Stabile P., Radica F., Bello M., Behrens H., Carroll M.R., Paris E., **Giuli G.** (2018) H₂O solubility in pantelleritic melts: Pressure and alkali effects. *Neues Jahrbuch für Mineralogie, Abhandlungen*, **195**(1), 1-9. doi: 10.1127/njma/2017/0060
- 72) Moretti A., **Giuli G.**, Trapananti A., Passerini S. (2018) Electrochemical and structural investigation of transition metal doped V₂O₅ sono-aerogel cathodes for lithium metal batteries. *Solid State Ionics*, **319**, 46-52. doi: 10.1016/j.ssi.2018.01.040
- 71) Consani S., Balić-Zunić T., Cardinale A.M., Sgroi W., **Giuli G.**, Carbone C. (2018) A novel synthesis routine for woodwardite and its affinity towards light (La, Ce, Nd) and heavy (Gd and Y) rare earth elements. *Materials*, **11**(1), art. n. 130, doi: 10.3390/ma11010130
- 70) **Giuli G.**, Eisenmann T., Bresser D., Trapananti A., Asenbauer J., Mueller F., Passerini S. (2017) Structural and electrochemical characterization of Zn_{1-x}Fe_xO-effect of aliovalent doping on the Li⁺ storage mechanism. *Materials*, **11**(1), art. no. 49. doi: 10.3390/ma11010049
- 69) **Giuli G.** (2017) Tektites and microtektites iron oxidation state and water content. *Rendiconti Lincei*, **28**, 615-621.
- 68) Stabile P., **Giuli G.**, Cicconi M.R., Trapananti A., Paris E., Behrens H. (2017) The effect of oxygen fugacity and Na/(Na+K) ratio on iron speciation in pantelleritic glasses. *Journal of Non Crystalline Solids*, **478**, 65-74.
- 67) Stabile P., Webb S., Knipping J., Behrens H., Paris E., **Giuli G.** (2016) Viscosity of pantelleritic and alkali-silicate melts: Effect of Fe redox state and Na/(Na+K) ratio. *Chemical Geology*, **442**, 73-82. doi: 10.1016/j.chemgeo.2016.09.003
- 66) Witkowska A., **Giuli G.**, Renzi M., Marzorati S., Yiming W., Nobili F., Longhi M. (2016) Fe local structure in Pt-free nitrogen-modified carbon based electrocatalysts: XAFS study. *Journal of Physics: Conference Series*, **712**, 012131. doi:10.1088/1742-6596/712/1/012131
- 65) Renzi M., Mignini P., **Giuli G.**, Marassi R., and Nobili F. (2016) Rotating disk electrode study of Pt/Cs₃HfMo₁₁VO₄₀ composite catalysts for performing and durable PEM fuel cells. *International Journal of Hydrogen Energy*, **41**, 11163-11173 doi:10.1016/j.ijhydene.2016.04.194
- 64) Benzi F., **Giuli G.**, Della Longa S., Paris E. (2016) Vanadium K-edge XANES in vanadium-bearing model compounds: a full multiple scattering study. *J. Synchrotron Rad.*, **23**(4), 947-952. doi:10.1107/S1600577516008134.
- 63) **Giuli G.**, Trapananti A., Mueller F., Bresser D., D'Acapito F., Passerini S. (2015) insights into the effect of iron and cobalt doping on the structure of nanosized ZnO. *Inorganic Chemistry*, **54**, 9393-9400. doi:10.1021/acs.inorgchem.5b00493
- 62) Moretti A., Secchiaroli M., Buchholz D., **Giuli G.**, Marassi R., Passerini S. (2015) Exploring the Low Voltage Behavior of V₂O₅ Aerogel as Intercalation Host for Sodium Ion Battery. *Journal of The Electrochemical Society*, **162** (14) A2723-A2728.
- 61) Cicconi M. R., **Giuli G.**, Ertel-Ingrisch W., Paris E., Dingwell D. B. (2015) The effect of the [Na/(Na+K)] ratio on Fe speciation in phonolitic glasses. *American Mineralogist*, **100**, 1610-1619.
- 60) Secchiaroli M., **Giuli G.**, Fuchs B., Marassi R., Wohlfahrt-Mehrens M. and Dsoke S. (2015) High rate capability Li₃V_{2-x}Ni_x(PO₄)₃/C (x = 0, 0.05, and 0.1) cathodes for Li-ion asymmetric supercapacitors. *Journal of Materials Chemistry A*, **3**, 11807-11816. DOI: 10.1039/c5ta00976f
- 59) Cicconi M.R., Neuville D. R., Tannou I., Baudalet F., Flourey P., Paris E., and **G. Giuli** (2015) Competition between two redox states in silicate melts: an in-situ experiment at the Fe K-edge and Eu L₃-edge. *American Mineralogist*, **100**, 1013-1016.

- 58) Wubulikasimu Y., **Giuli G.**, Moretti A., Nobili F., Fehr K.T., Paris E., Marassi R. (2015) Synthesis and characterization of Zn-doped LiFePO₄ cathode materials for Li-ion battery. *Materials chemistry and physics*, **155**, 191-204
- 57) Arzilli F., Mancini L., Voltolini M., Cicconi M.R., Mohammadi S., **Giuli G.**, Mainprice D., Paris E., Barou F., Carroll M.R. (2015) Near-liquidus growth of feldspar spherulites in trachytic melts: 3D morphologies and implications in crystallization mechanisms. *Lithos*, **216-217**, 93-105.
- 56) Secchiaroli M., Nobili F., Tossici R., **Giuli G.**, Marassi M. (2015) Synthesis and electrochemical characterization of high rate capability Li₃V₂(PO₄)₃/C prepared by using poly(acrylic acid) and D-(+)-glucose as carbon sources, *Journal of Power Sources*, **275**, 792-798. doi:10.1016/j.jpowsour.2014.11.055
- 55) Pratesi G., Caporali S., Loglio F., **Giuli G.**, Dzikova L., Skala R. (2014) Quantitative study of porosity and pore features in Moldavites by means of X-ray micro-CT. *Materials*, **7**, 3319-3336. doi:10.3390/ma7043319
- 54) **Giuli G.**, Cicconi M.R., Eeckhout S.G., Pratesi G., Paris E., Folco L. (2014) Australasian microtektites from Antarctica: XAS determination of the Fe oxidation state. *Meteoritics & Planetary Science*, **49**(4), 696-705.
- 53) Bonadiman C., Nazzareni S., Coltorti M., Comodi P., **Giuli G.**, Faccini B. (2014) Crystal chemistry of amphiboles: implications for oxygen fugacity and water activity in lithospheric mantle beneath Victoria Land, Antarctica. *Contribution to Mineralogy and Petrology*, **167** (3), paper. Nr.984. doi: 10.1007/s00410-014-0984-8
- 52) **Giuli G.**, Cicconi M.R., Eeckhout S.G., Koeberl C., Glass B.P., Pratesi G., Cestelli-Guidi M., Paris E. (2013) North American microtektites are more oxidized than tektites. *American Mineralogist*, **98**, 1930-1937.
- 51) Moretti A., **Giuli G.**, Nobili F., Trapananti A., Aquilanti G., Tossici R., Marassi R. (2013) Structural and electrochemical characterization of Vanadium-doped LiFePO₄ cathodes for lithium-ion batteries. *Journal of the Electrochemical Society*, **160**(6), A940-A949.
- 50) Cicconi M.R., **Giuli G.**, Paris E., Courtial P., Dingwell D.B. (2013) XAS investigation of rare earth elements in sodium disilicate glasses. *Journal of Non-Crystalline Solids*, **362**, 162-168.
- 49) Pratesi A., **Giuli G.**, Cicconi M.R., Della Longa S., Weng T.C., and Ginanneschi M. (2012) Dioxygen oxidation Cu(II) → Cu(III) in the copper complex of cyclo (Lys- d His-βAla-His): A case study by EXAFS and XANES approach. *Inorganic chemistry*, **51**(15), 7969-7976.
- 48) **Giuli G.**, Cicconi M.R., Paris E. (2012) ⁴¹Fe³⁺-O distance in synthetic kimzeyite garnet, Ca₃Zr₂[Fe₂SiO₁₂]. *European Journal of Mineralogy*, **24**, 783-790
- 47) Tabassam L., **Giuli G.**, Moretti A., Nobili F., Marassi R., Minicucci M., Gunnella R., Olivi L., Di Cicco A. (2012) Structural study of LiFePO₄-LiNiPO₄ solid solutions. *Journal of Power Sources*, **213**, 287-295
- 46) Cicconi M.R., **Giuli G.**, Paris E., Ertel-Ingrisch W., Dingwell D. B. (2012) Europium oxidation state and local structure in silicate glasses. *American Mineralogist*, **97**, 918-929.
- 45) **Giuli G.**, Mori R.A., Cicconi M.R., Paris E., Glatzel P., Eeckhout S.G., Scaillet B. (2012) Effect of alkalis on the Fe oxidation state and local environment in peralkaline rhyolitic glasses. *American Mineralogist*, **97**, 468-475.
- 44) Dsoke S., Moretti A., **Giuli G.**, Marassi R. (2011) Rotating disc electrode study of Pt-Co-Cs_{2.5}PW₁₂O₄₀ composite electrodes toward oxygen reduction reaction. *International Journal of Hydrogen Energy*, **36**, 8098-8102. doi:10.1016/j.ijhydene.2011.01.101
- 43) **Giuli G.**, Paris E., Hess K.U., Dingwell D.B., Cicconi M.R., Eeckhout S.G., Fehr K.T., Valenti P. (2011) XAS determination of the Fe local environment and oxidation state in phonolite glasses. *American Mineralogist*, **96**, 631-636.
- 42) Mori R.A., Paris E., **Giuli G.**, Eeckhout S.G., Kavcic M., Zitnik M., Bukar K., Pettersson L.G.M., Glatzel P., (2010) Sulfur-Metal Orbital Hybridization in Sulfur-Bearing Compounds Studied by X-ray Emission Spectroscopy. *Inorganic Chemistry*, **49**(14), 6468-6473.
- 41) Cicconi M. R., **Giuli G.**, Paris E., Dingwell D. B. (2010) Europium structural environment in a sodium disilicate glass by XAS. *Journal of Non-Crystalline Solids* **356**, 1749-1753
- 40) **Giuli G.**, Pratesi G., Eeckhout S.G., Koeberl C., Paris E. (2010) Iron reduction in silicate glass produced during the 1945 nuclear test at the trinity site (Alamogordo, New Mexico, USA). In W.U. Reimold and R. Gibson eds., *Large Meteorite Impacts and Planetary Evolution IV: Geological Society of America Special Paper n. 465*, chapter 32, 653-660. doi: 10.1130/2010.2465(32) ISBN: 978-0-8137-2465-2
- 39) **Giuli G.**, Eeckhout S.G., Cicconi M.R., Koeberl C., Pratesi G., Paris E., (2010) Iron oxidation state and local structure in North-American tektites. In W.U. Reimold and R. Gibson eds., *Large Meteorite Impacts and Planetary Evolution IV: Geological Society of America Special Paper n. 465*, chapter 31, 645-651. doi: 10.1130/2010.2465(31) ISBN: 978-0-8137-2465-2
- 38) Cicconi M.R., **Giuli G.**, Paris E., Ertel-Ingrisch W., Dingwell D.B (2009) Europium structural role in silicate glasses: reduction kinetics at low oxygen fugacity. *Journal of Physics: Conference Series*, **190**, 012179.
- 37) Mori R.A., Paris E., **Giuli G.**, Eeckhout S.G., Kavcic M., Zitnik M., Bucar K., Pettersson L., Glatzel P. (2009) Electronic structure of Sulfur studied by X-ray absorption and emission spectroscopy. *Analytical Chemistry*, **81**, 6516-6525.
- 36) De Resende V., Cordier A., De Grave E., Laurent C., Eeckhout S.G., **Giuli G.**, Peignei A., Da Costa G., Geraldo M., Vandenberghe R. (2008) Presence of metallic Fe nanoclusters in α-(Al,Fe)₂O₃ solid solutions. *Journal of Physical Chemistry C*, **112**, 16256-16263.
- 35) Eeckhout S.G., Gorges B., Barthe L., Pelosi O., Safonova O. and **Giuli G.** (2008) A high-temperature furnace for in situ synchrotron X-ray spectroscopy under controlled atmospheric conditions. *J. Synchrotron Rad.*, **15**, 489-494.
- 34) **Giuli G.**, Eeckhout S.G., Koeberl C., Pratesi G., Paris E. (2008) Yellow impact glass from the K/T boundary at

- Beloc (Haiti): XANES determination of the Fe oxidation state and implications for formation conditions. *Meteoritics And Planetary Sciences*, **43**(5), 981-986.
- 33) Glatzel P., Mirone A., Eeckhout S.G., Sikora M., **Giuli G.** (2008) Orbital hybridization and spin polarization in the resonant 1s photoexcitations of α -Fe₂O₃. *Phys. Rev. B*, **77**, 115133-1 – 115133-7
- 32) **Giuli G.**, Eeckhout S.G., Paris E., Koeberl C., Pratesi G., (2005) Iron oxidation state in impact glasses from the K/T boundary at Beloc, Haiti, by high-resolution XANES spectroscopy. *Meteoritics And Planetary Science*, **40**, 1575-1580.
- 31) **Giuli G.**, Paris E., Wu Z., De Panfilis S., Pratesi G., Cipriani C. (2005) Ag Structural role of Ag in Galena (PbS). A XANES study. *Physica Scripta*, **T115**, 387-389.
- 30) **Giuli G.**, Paris E., Mungall J., Romano C., Dingwell D. (2004) V oxidation state and coordination number in silicate glasses by XAS. *American Mineralogist*, **89**, 1640-1646.
- 29) Wu Z., Mottana A., Marcelli A., Paris E., **Giuli G.**, Cibin G. (2004) X-ray absorption near-edge structure at the Mg and Fe K-edges in olivine minerals. *Physical Review B*, **69**, 104106;
- 28) **Giuli G.**, Paris E., Pratesi G., Koeberl C., Cipriani C. (2003) Iron oxidation state in Fe-rich layer and silica matrix of Libyan Desert Glass: a high resolution XANES study. *Meteoritics And Planetary Science*, **38**, 1181-1186.
- 27) Pratesi G., Cipriani C., **Giuli G.**, Birch W.D. (2002) Santabarbaraita: A new amorphous phosphate mineral. *European Journal of Mineralogy*, **15**, 185-192;
- 26) **Giuli G.**, Pratesi G., Paris E., Cipriani C. (2002) Iron local structure in tektites and impact glasses by extended X-ray absorption fine structure and High resolution X-ray absorption near edge structure spectroscopy. *Geochimica et Cosmochimica Acta*, **66**, 4347-4353.
- 25) Tombolini F., Brigatti M.F., Marcelli A., Cibin G., x Mottana G., **Giuli G.** (2002) Local and average Fe distribution in trioctahedral micas: Analysis of Fe K-edge XANES spectra in the phlogopite-annite and phlogopite-tetra-ferriphlogopite joins on the basis of single-crystal XRD refinements. *European Journal of Mineralogy*, **14**, 1075-1085.
- 24) Tombolini F., Marcelli A., Mottana A., Cibin G., Brigatti M.F., **Giuli G.** (2002) Crystal-chemical study by XANES of trioctahedral micas: The most characteristic layer silicates. *International Journal of Modern Physics-B*, **16**, 1673-1679.
- 23) **Giuli G.**, Paris E., Wu Z., Mottana A., Seifert F. (2002) Fe and Mg local environment in the synthetic enstatite-ferrosilite join: an experimental and theoretical XANES and XRD study. *European Journal of Mineralogy*, **14**, 429-436.
- 22) **Giuli G.**, Paris E., Wu Z., Brigatti M.F., Cibin G., Mottana A., Marcelli A., (2001) Experimental and Theoretical XANES and EXAFS study of tetra-ferriphlogopite. *European Journal of Mineralogy*, **13**, 1099-1108.
- 21) Paris E., **Giuli G.**, Carroll M., Davoli I. (2001) The valence and speciation of sulphur in glasses by X-ray Absorption Spectroscopy. *Canadian Mineralogist*, **39**, 331-339.
- 20) Pratesi G, Capitani D., Cipriani C., **Giuli G.** (2001) Al 29 Si- 27 Al magic angle spinning NMR study of natural silica glass from the Egyptian desert. (Egypt). *Journal of Non Crystalline Solids*, **279**, 88-92.
- 19) **G. Giuli**, Z. Wu, E. Paris, M. Berrettoni, G. Della Ventura, A. Mottana (2000) Nickel distribution and clustering in synthetic Amphiboles: an experimental and theoretical XANES study. *Physical Review B*, **62**, 5473-5477.
- 18) Cipriani C., Corazza M., **Giuli G.**, Moggi Cecchi V., Pratesi G., Rossi P., Vittone E. (2000) Ion beam study of a possible extraterrestrial body signature in Libyan desert glass. *Nuclear instruments and Methods in Physics Research B*, **170**, 187-192.
- 17) **Giuli G.**, Bindi L., Bonazzi P. (2000) Rietveld Refinement of Okayamalite: evidence for the B/Si ordered distribution. *American Mineralogist*, **85**, 1512-1515.
- 16) **Giuli G.**, Pratesi G., Corazza M., Cipriani C. (2000) Aluminium coordination in tektites: a XANES study. *American Mineralogist*, **85**, 1172-1174.
- 15) Brigatti M.F., Lugli C., Cibin G., Marcelli A., **Giuli G.**, Paris E., Mottana A., Wu Z. (2000) Reduction and sorption of chromium by Fe(II)-bearing phyllosilicates: chemical treatments and X-ray absorption spectroscopy (XAS) studies. *Clays and Clay Minerals*, **48**, 272-281.
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- 13) Wu Z., Mottana A., Paris E., **Giuli G.**, Marcelli A., Cibin G. (1999) Order-disorder in olivine minerals by synchrotron X-ray Absorption Near-edge Structure (XANES) spectroscopy at the Mg, Fe and Ca k edges. *INFN Laboratori Nazionali di Frascati*, LNF-99/019 (P);
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TEACHING ACTIVITY

Courses held at:

- **Facoltà di Scienze e Tecnologie, University of Camerino (from 2010: School of Science and Technology)**
 - *ANALISI MINERALOGICA* (20 h) 3-year course in “Monitoraggio geoambientale” dell’Università di Camerino (a.y. 1998-99);
 - *CRISTALLOGRAFIA* (24 h) course “Scienze Geologiche”, Università di Camerino, (a.a. 2001-02.; 2002-03; 2003-04)
 - *CRISTALLOGRAFIA* (24 h) seminar series for for PhD students Dip. Chimica, Università di Camerino, a.y. 2002-03;
 - *MINERALOGIA* course “Scienze Geologiche”, Università di Camerino, (a.y. 2004-05 (56 h) ; 2006-07 (80 h) ; 2006-07 (24 h) ; 2007-08 (48 h); 2008-09 (40 h); 2009-01 (24 h); 2010-11 (48 h); 2011-12 (36 h); 2012-13 (36 h); 2013-14 (32 h); 2014-15 (32 h); 2015-16 (32 h); 2016-17 (32 h))
 - *CRISTALLOGRAFIA* (15 h) course “Tecnologie per l’innovazione”, Università di Camerino, (a.y. 2004-05; 2005-06;2006-07).
 - *MATERIALI PER I BENI CULTURALI* (24 h) course “Tecnologie per il Restauro dei Beni Culturali”, Università di Camerino (a.y. 2004-05; 2005-06; 2006-07; 2007-08).
 - *GEOCHEMISTRY AND PETROGENESIS* 2013-14 (32 h) 2014-15 (28 h)
 - *METODI GEOMINERALOGICI DI INDAGINE* (42 h) course “tecnologie per la diagnostica e il restauro dei beni culturali”, Università di Camerino (a.y. 2010-11; 2011-12; 2012-13; 2013-14; 2014-15; 2015-16; 2016-17)
 - *GEOMATERIALS LABORATORY* (42 h) course “LM74”, Università di Camerino (a.y. 2010-11; 2011-12; 2012-13; 2013-14; 2014-15; 2015-16; 2016-17)
 - *MINERALOGY* (64 h) course L34 2017-18

total teaching burden at Unicam from 2006:

2006-07= 119 h
 2007-08= 72 h
 2008-09= 132 h
 2009-10= 216 h
 2010-11= 197 h
 2011-12= 168 h
 2012-13= 136 h
 2013-14= 151 h
 2014-15= 171 h
 2015-16= 116 h
 2016-17= 116 h
 2017-18= 106 h

- **Scuola di Specializzazione all’insegnamento Secondario (SSIS), University of Macerata:**
 - *DIDATTICA DELLA MINERALOGIA* (20 h) a.y. 1999-2000; 2000;2001;
 - *DIDATTICA DELLA PETROLOGIA* (20 h) a.y. 2001-2002, 2002-2003;
 - *DIDATTICA DELLA GEOGRAFIA ASTRONOMICA* (10 h) a.y. 2003-2004;
 - *DIDATTICA DELLA GEOGRAFIA ASTRONOMICA* (20 h) a.y. 2004-2005;
 - *DIDATTICA DELLA GEOGRAFIA ASTRONOMICA* (30 h) a.y. 2005-2006;

Supervisor of 11 PhD students (10 already defended their thesis, 1 is starting this year) from 2006 on

DIVULGATION ACTIVITIES:

- display “METEORITI E ASTEROIDI”, at the University of Camerino, Camerino (23/11-7/12/2001);
- display “Viaggio nel silicio” at the “polo museale d’Ateneo, University of Camerino (2006-07);
- display “Il colore nei minerali” at the “polo museale d’Ateneo, University of Camerino (2006-07);
- divulgation activity on the XXX italian expedition to Antarctica [Istituto P.M. Ricci (Montecosaro, MC); Scuola Media L.M. Patrizi (Recanati, MC); Scuola media Leonardo da Vinci (Pioraco, MC); Liceo Linguistico G. Leopardi (Cingoli, MC); Liceo Scientifico T. C. Onesti Fermo (FM)]. This activity involved the collaboration of ca. 20 teachers and the participation of ca. 500 students.