

Curriculum scientifico

Testo italiano

Il responsabile scientifico ha svolto essenzialmente la sua attività di ricerca nel campo della fisica della materia condensata studiando i problemi connessi al comportamento fisico dei sistemi disordinati quali vetri, conduttori ionici amorfi e liquidi glass-forming. I suoi interessi scientifici comprendono varie tecniche sperimentali di indagine, sia strutturali che dinamiche. E' specialista in misure di spettroscopia meccanica nel range di frequenze tra 100 kHz e 300 MHz ed a temperature comprese tra 450 K e 4.2 K. Recentemente ha sviluppato un efficiente laboratorio di spettroscopia dielettrica in cui è possibile effettuare misure di permittività dielettrica in un vasto intervallo di temperature e di frequenze. Infatti, allo scopo di studiare le proprietà dielettriche di materiali solidi e liquidi al variare della frequenza dai mHz a 40 GHz e della temperatura da 450 K a 4.2 K, ha progettato e realizzato vari sistemi di misura, gran parte dei quali di nuova concezione. (vedi <http://ww2.unime.it/microonde/>)

Dal 1998 ha preso parte e partecipa attualmente a progetti finanziati dal MIUR sia in qualità di coordinatore nazionale, sia in qualità di responsabile scientifico di unità di ricerca. E' stata spesso invitata sia come chairperson, sia come speaker in molteplici conferenze internazionali. Collabora attualmente con vari importanti gruppi di ricerca negli Stati Uniti (*Arizona State University e con la Texas University*) ed in Europa. In particolare in Europa collabora con il Centro di eccellenza Europeo *Sonderforschungsbereich SFB* presso l'Università di *Muenster* per lo studio dei vetri conduttori mediante spettroscopia dielettrica, e con il centro di eccellenza "*Glass and time*" del *Danish National Research Foundation, Roskilde, Denmark*.

Testo inglese

Her research activity in the field of condensed matter physics mainly concerns the problems related to the behaviour of disordered systems : glasses, amorphous ionic conductors, glass forming liquids. Her scientific interests cover a broad range of investigation techniques, from structural to dynamical ones. She is a specialist in ultrasonic measurements and she has been able to develop in the recent years an efficient laboratory of dielectric spectroscopy, covering a wide and competitive range of temperatures and frequencies.

In fact in order to investigate the frequency dependence of dielectric properties of solid and liquid materials from mHz to 40GHz as a function of temperature in the range 4.2 K- 450K, she has managed the project and the realization of several experimental equipments, mostly of new conception. (<http://ww2.unime.it/microonde/>)

Since 1998 she took part as project leader or as head of the local research unit in national research projects (PRIN) granted by MIUR.

She is often invited as speaker or chairperson in International Conferences. She has activated and currently holds many collaborations with several well known research groups in USA (*Arizona State University e con la Texas University*); In Europe she collaborates on the *European Centre Sonderforschungsbereich (Muenster University)* to study the dielectric properties of the conducting glasses. She is also coworking with the excellence research center "*Glass and time*" of the *Danish National Research Foundation, Roskilde University, Denmark*.

Elenco dei lavori degli ultimi dieci anni

Author(s): Mandanici, A (Mandanici, Andrea); Huang, W (Huang, Wei); Cutroni, M (Cutroni, Maria); Richert, R (Richert, Ranko)

Title: Dynamics of glass-forming liquids. XII. Dielectric study of primary and secondary relaxations in ethylcyclohexane

Source: JOURNAL OF CHEMICAL PHYSICS, 128 (12): Art. No. 124505 MAR 28 2008

ISSN: 0021-9606

DOI: 10.1063/1.2844797

Author(s): Mandanici, A (Mandanici, Andrea); Cutroni, M (Cutroni, Maria)
Title: Multiple mechanical relaxations in ethylcyclohexane above the glass transition temperature
Source: JOURNAL OF PHYSICAL CHEMISTRY B, 111 (37): 10999-11003 SEP 20 2007
ISSN: 1520-6106
DOI: 10.1021/jp0712021

Author(s): Mandanici, A (Mandanici, Andrea); Cutroni, M (Cutroni, Maria); Triolo, A (Triolo, Alessandro); Rodriguez-Mora, V (Rodriguez-Mora, Virginia); Ramos, MA (Ramos, Miguel A.)
Title: Thermodynamic study of alkyl-cyclohexanes in liquid, glassy, and crystalline states (vol 125, art no 054514, 2006)
Source: JOURNAL OF CHEMICAL PHYSICS, 126 (6): Art. No. 069901 FEB 14 2007
ISSN: 0021-9606
DOI: 10.1063/1.2434952

Author(s): Mandanici, A (Mandanici, A.); Cutroni, M (Cutroni, M.); Raimondo, A (Raimondo, A.); Federico, M (Federico, M.); Rocca, F (Rocca, F.); Armellini, C (Armellini, C.)
Title: Broadband dielectric response of binary borate glasses
Source: PHYSICS AND CHEMISTRY OF GLASSES-EUROPEAN JOURNAL OF GLASS SCIENCE AND TECHNOLOGY PART B, 47 (4): 367-370 AUG 2006
ISSN: 0031-9090

Author(s): Cutroni, M (Cutroni, M.); Mandanici, A (Mandanici, A.); Raimondo, A (Raimondo, A.); Sanson, A (Sanson, A.)
Title: Dynamical response of borate glasses down to low temperatures
Source: PHYSICS AND CHEMISTRY OF GLASSES-EUROPEAN JOURNAL OF GLASS SCIENCE AND TECHNOLOGY PART B, 47 (4): 388-392 AUG 2006
ISSN: 0031-9090

Author(s): Mandanici, A (Mandanici, A.); Shi, X (Shi, X.); Hutcheson, SA (Hutcheson, S. A.); McKenna, GB (McKenna, G. B.); Cutroni, M (Cutroni, M.); Giambo, S (Giambo, S.)
Title: Mechanical response of a simple molecular glass former in the glass transition region (vol 432, pg 299, 2006)
Source: MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, 442 (1-2): 551-551 Sp. Iss. SI DEC 20 2006
ISSN: 0921-5093
DOI: 10.1016/j.msea.2006.04.145

Author(s): Mandanici, A (Mandanici, Andrea); Richert, R (Richert, Ranko); Cutroni, M (Cutroni, Maria); Shi, XF (Shi, Xiangfu); Hutcheson, SA (Hutcheson, Stephen A.); McKenna, GB (McKenna, Gregory B.)

Title: Relaxational features of supercooled and glassy m-toluidine

Source: JOURNAL OF NON-CRYSTALLINE SOLIDS, 352 (42-49): 4729-4734 Sp. Iss. SI NOV 15 2006

ISSN: 0022-3093

DOI: 10.1016/j.jnoncrysol.2006.05.029

Author(s): Triolo, A (Triolo, Alessandro); Mandanici, A (Mandanici, Andrea); Russina, O (Russina, Olga); Rodriguez-Mora, V (Rodriguez-Mora, Virginia); Cutroni, M (Cutroni, Maria); Hardacre, C (Hardacre, Christopher); Nieuwenhuyzen, M (Nieuwenhuyzen, Mark); Bleif, HJ (Bleif, Hans-Jurgen); Keller, L (Keller, Lukas); Ramos, MA (Ramos, Miguel Angel)

Title: Thermodynamics, structure, and dynamics in room temperature ionic liquids: The case of 1-butyl-3-methyl imidazolium hexafluorophosphate ([bmim][PF6])

Source: JOURNAL OF PHYSICAL CHEMISTRY B, 110 (42): 21357-21364 OCT 26 2006

ISSN: 1520-6106

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Title: Thermodynamic study of alkyl-cyclohexanes in liquid, glassy, and crystalline states

Source: JOURNAL OF CHEMICAL PHYSICS, 125 (5): Art. No. 054514 AUG 7 2006

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Author(s): Mandanici, A; Shi, XF; McKenna, GB; Cutroni, M

Title: Slow dynamics of supercooled m-toluidine investigated by mechanical spectroscopy

Source: JOURNAL OF CHEMICAL PHYSICS, 122 (11): Art. No. 114501 MAR 15 2005

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DOI: 10.1063/1.1856919

Author(s): Mandanici, A; Cutroni, M; Richert, R

Title: Dynamics of glassy and liquid m-toluidine investigated by high-resolution dielectric spectroscopy

Source: JOURNAL OF CHEMICAL PHYSICS, 122 (8): Art. No. 084508 FEB 22 2005

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Author(s): Mandanici, A; Karlsson, C; Matic, A; Swenson, J; Cutroni, M; Borjesson, L

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ISSN: 0022-3093

DOI: 10.1016/j.jnoncrysol.2004.08.076

Author(s): Cutroni, M; Mandanici, A

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ISSN: 1478-6443

DOI: 10.1080/14786430310001644260

Author(s): Cutroni, M; Mandanici, A

Title: Electric and mechanical moduli: comparison between relaxation responses in a superionic glass

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Source: SUPERCOOLED LIQUIDS, GLASS TRANSITION AND BULK METALLIC GLASSES, 754: 3-8 2003

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Title: GeO₂-doped silica glasses: an ac conductivity study
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Author(s): Cutroni, M; Mandanici, A; Mustarelli, P; Tomasi, C
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Editors: Messina, A

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Author(s): Mandanici, A; Cutroni, M; Cramer, C; Funke, K; Mustarelli, P; Tomasi, C

Editors: Messina, A

Title: Microwave dielectric spectroscopy and dynamical processes in superionic glasses

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ISSN: 0094-243X

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Author(s): Cutroni, M; Federico, M; Mandanici, A; Mustarelli, P; Tomasi, C

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