

PERSONAL INFORMATION

Daniele Chiriu



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Sex Male | Date of birth 23/07/1978 | Nationality Italian

WORK EXPERIENCE

20/03/2013–Present

**Assistant Professor, Group of Optical Spectroscopy**

University of Cagliari - Dept. of Physics, Cagliari (Italy)

**Optics, Optoelectronics, Materials Science, Applied Physics**

Development of experimental setup with optic equipment for materials characterization.

Development of new materials for optical and optoelectronic applications by sol-gel and hydrothermal technique. Development of innovative materials and methods for Dosimetry (OSL, POSL), Radon detection, Radioactivity in building, Digital X-Ray radiography. Development of new phosphors for LED lighting free of Critical Raw Materials (Group of Optical Spectroscopy is the coordinator of EIP EU Commitment RESET “Raw Elements Substitution in Electronic & optoelectronic Technologies”-<http://reset.dsf.unica.it>)

Unit Project Leader “Time through colours: study of cultural heritage artefacts by means of not destructive techniques” – Funded by Italian Ministry of University and Research – total budget 1Meuro. The activities have been performed in collaboration with the University of Rome “La Sapienza”, University of Perugia and the Ashmolean Museum of Oxford.

**Teaching experience:**

2013-2014 Physics for biologists – University of Cagliari

2014-2015 Physics for biologists – University of Cagliari

2015-2016 Physics for biologists; Applied physics for cultural heritage – University of Cagliari

2016-2017 Physics for chemistry; Applied physics for cultural heritage – University of Cagliari

**MSc. Students:**

“Raman Study on Pompeii Potteries: The Role of Calcium Hydroxide on the Surface Treatment” degree thesis, Carlo Sias (2014)

06/02/2015–Present

**Co-founder**

E-laboRad s.r.l. spin-off University of Cagliari, Cagliari (Italy)

R&D of innovative materials and methods for Dosimetry (OSL, POSL), Radon detection, Radioactivity in building, Digital X-Ray radiography.

01/02/2012–31/12/2014

**Chief Technology Office**

Electrical and Lighting Systems soc. Coop., Cagliari (Italy)

LED Lighting design for industries, street and domestic applications. Customer assistance.  
Administrative managing.

01/01/2011–20/03/2013 **Assistant of Electrolytic Tankhouse Superintendent**

Portovesme s.r.l. (Glencore group), Portoscuso (Italy)

ASSISTANT of Electrolytic Tankhouse SUPERINTENDENT; in charge of the Electrolytic Tankhouse and induction furnaces production and administration (**budget per year 17 Meuro**). This was an assistant head of the department position, reporting to Superintendent (Head of department). Administrative functions included co-ordinating a workforce of about 100 staff in multi-disciplinary activities of process engineering, maintenance and operations.

CRITICAL ACCOUNTABILITIES:

- Organise and control operations in an efficient and cost effective manner in order to meet production targets within agreed budgets.
- Initiate and implement short and medium term production and maintenance strategies in order to ensure that improvements are continuously made in both operations and maintenance.
- Control the operating standards, procedures, and practices to ensure products of the desired quality and specifications are made.
- Maintain safe working conditions and practices in compliance with Statutory and Domestic regulations.

INTERNAL AUDITOR for the UNI EN ISO 9001:2008 and ISO 14000.

01/01/2010–31/12/2010 **Research and process Engineering**

Portovesme s.r.l. (Glencore group), Portoscuso (Italy)

Principal field of interest:

Filtration of Calcium sulphate in electrolytic zinc solution. Surface study and related corrosion problems about aluminium cathodes by means of SEM microscope. Cement copper treatment in electrolytic tankhouse.

- Carry out laboratory and plant test work (in agreement with Superintendent) to evaluate new reagents, equipment, and procedure for improving plant performance and present accurate technical reports.

01/01/2008–31/12/2009 **R&D - Process Engineering - Customer assistance**

Saes Opto Materials s.r.l. (member of Saes Getters group), Tortoli, OG (Italy)

Senior Researcher, process engineering and customer assistance about:

- Crystal Growth and Laser Technology. From the Product development to the final Production Line.
- Crystal for Optoelectronic, Gamma ray detectors, TLD dosimetry, OSL dosimetry, X-Ray Digital Imaging, laser materials, LIDAR.
- Industrial Growth process, wafering, cleaning, inspection and quality control.
- Solid State Laser Design and Characterization.
- R&D and process engineering on crystal growth process for Alexandrite, LYSO-YSO:Ce, LYSO-YSO:Tb, LuYAP:Ce, YbAP:Ce, Nd:YAG, Er:YAG, Re-codoped YAG optical quality crystals for laser and scintillating applications: From the furnace technology, raw material selection, post-growth process.
- R&D and process engineering on crystal growth process for Mixed Garnet optical quality crystals for LIDAR and space applications.
- R&D in collaborations with SAES Getters S.p.a. and University of Cagliari about Laser and Scintillator Crystal Growth process and new applications of crystalline oxides.

01/01/2008–01/04/2008 **Junior Researcher**

Sardegna Ricerche (Research Public Agency), loc. Piscinamanna Pula, CA (Italy)

SEM imaging and optical characterization on white LED systems: GaN LED with Ce:YAG phosphors. Testing about Packaging failure.

01/05/2007–31/12/2007

### Master on Renewable Energy – Tutor

Sardegna Ricerche (Research Public Agency), loc. Piscinamanna Pula, CA (Italy)

Didactic planning, lecture assistance and experimental setup about: photovoltaic systems, eolic systems, thermodynamic solar systems, fuel cells.

## EDUCATION AND TRAINING

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01/10/2003-15/02/2007

### PhD Physics – University of Cagliari

The development of new solid-state lasers, especially those operating between 0.9 and 3.0  $\mu\text{m}$ , has renewed general interest in the optical properties of rare-earth ions ( $\text{Re}^{3+}$ ) in crystalline oxides with garnet structure.

At this purpose, the aim of this study concerns the optical and structural characterization of crystalline oxides for laser application, with the prospective of enhancing efficiency and tunability of solid state lasers, and the experimentation of new materials able to meet specific technological purposes.

Among the principal laser active media, the Neodymium-doped Yttrium Aluminum Garnet (Nd:YAG) is one of the most important available laser systems for research and technological applications. Although its optical characteristics are well known, it has gained new general interest in the perspective of enhancing its efficiency by using different transition metals as sensitizer ions.

The development of new laser materials, with mixed structure, for example, is devoted to the remote sensing of the atmosphere. Light detection and ranging (LIDAR) or differential absorption lidar (DIAL) techniques can be applied to determine molecular constituent concentrations present in the atmosphere, such as water vapor.

The possibility of tuning the laser emission to investigate the desired molecule easily explains the growing interest in the optical characterization of mixed garnet materials. In this scenery mixed garnet host materials, like  $\text{Y}_3\text{Al}_5\text{O}_{12}$  (YAG),  $\text{Y}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$  (YSGG),  $\text{Gd}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$  (GSGG) and  $\text{Y}_3\text{Sc}_2\text{Al}_3\text{O}_{12}$  (YSAG), doped with lanthanides allow the so-called compositional tuning.

In this work we studied the optical and structural properties of two different materials with garnet structure: yttrium aluminum garnet ( $\text{Y}_3\text{Al}_5\text{O}_{12}$  -YAG) doped with  $\text{Fe}^{3+}$  ions, and the mixed structure  $\text{Y}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$  (YSGG) -  $\text{Y}_3\text{Al}_5\text{O}_{12}$  (YAG) doped with Neodymium.

- 2005-2006: realization and study of “High Efficient Laser Pump Sources for Lidar applications” (project H.E.L.P.S. ESA ITT AO/1-4691/04/NL/CP) in collaboration with Scimex s.r.l., ESA (European Space Agency), CESI (Milan- Italy) and Galileo Avionica (Italy).
  - 2005-2006: program for the production and characterization of new laser crystals based on mixed-garnet materials in collaboration with Scimex s.r.l., ESA (European Space Agency), CESI (Milan- Italy) and Galileo Avionica (Italy).
  - 2004-2005: stage on Czochralski method for the growth of Laser single crystals at Scimex s.r.l.
  - 2004 (November) and 2005 (November): Training and measurement session on YAG crystals, porous silica samples and rare earth doped ternary compounds under Synchrotron excitation (Hasylab – DESY – Hamburg).
  - 2004: “Training on Environmental Scanning Electron Microscope (ESEM)” – FEI Company at LIMINA Labs –University of Cagliari
- TRAINING AND RESEARCH PROJECT

22/07/2003

### MSc Degree in Physics – 110/110 cum Laude

Experimental Thesis: “Characterization of  $\text{Y}_3\text{Al}_5\text{O}_{12}$  as matrix of Nd:YAG lasers”; the study was performed by using experimental technique like XRD, Raman spectroscopy, PL and time resolved PL. in collaboration with the Scimex s.r.l. Tortoli, (OG)

## PERSONAL SKILLS

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- Communication skills** ▪ Good communication skills gained through my experience as CTO and responsible of production.
- Organisational / managerial skills** ▪ Leadership (direct responsibility for a team of 50 people in Portovesme s.r.l.)
- Job-related skills** ▪ Good command of quality control processes (quality auditor), good capabilities in the development of research results in production process.  
 ▪ Good experience in material science especially in synthesis and development of new growing methods.  
 ▪ Good experience in materials characterization: SEM/EDS, RAMAN spectroscopy, UVVIS Absortion and reflectance, Photoluminescence (PL) and Time Resolved PL, XRD, Interferometry, Scintillation measurements.  
 ▪ Good experience in materials growth: Czochralski, Sol-Gel, Hydrothermal  
 ▪ Good experience in Dosimetry: OSL and POSL
- Computer skills** ▪ Good command of Microsoft Office™ tools, data analysis (Origin, Kaleidagraph, Peakfit) and chemical simulation (Gaussian 09)
- Other skills** ▪ Interferometry; optical polishing; music (piano); free climbing
- Driving licence** ▪ B

## ADDITIONAL INFORMATION

- Publications**
1. "Emphasis and colour technology in ancient Mesopotamian mid-third millennium B.C. cuneiform tablets" D. Chiriu, P. C. Ricci, C. M. Carbonaro, D. Nadali, A. Polcaro, P. Collins in press (2016)
  2. "Raman characterization of XIV-XVI centuries Sardinian documents: inks, papers and parchments" D. Chiriu, P.C. Ricci, G. Cappellini in press (2016)
  3. "New phosphors with strongly reduced content of critical raw materials for lighting applications" Daniele Chiriu · Luigi Stagi · Carlo Maria Carbonaro · Pier Carlo Ricci, *Physica Status Solidi C* (2016)
  4. "Are organic compounds good candidates to substitute rare earth materials in fluorescent applications?" Carlo Maria Carbonaro · Daniele Chiriu · Pier Carlo Ricci, *Physica Status Solidi C* (2016)
  5. "Strength and weakness of rare earths based phosphors: Strategies to replace critical raw materials" Daniele Chiriu · Luigi Stagi · Carlo Maria Carbonaro · Pier Carlo Ricci, *Physica Status Solidi C* (2016)
  6. "Structural and optical properties of carbon nitride polymorphs" Luigi Stagi · Daniele Chiriu · Carlo Maria Carbonaro · Riccardo Corpino · Pier Carlo Ricci, *Diamond & Related Materials* 68 (2016) 84–92
  7. "High efficient fluorescent stable colloidal sealed dye-doped mesostructured silica nanoparticles", Carlo M Carbonaro; Federica Orrù; Pier C Ricci; Andrea Ardu; Riccardo Corpino; Daniele Chiriu; Fabrizio Angius; Andrea Mura; Carla Cannas, *Microporous & Mesoporous Materials* 225 (2016)
  8. "Did ancient Sumerian people use an oil as a primer for decorative painting? A Raman spectroscopy investigation of ancient Mesopotamian potteries." D. Chiriu, P. C. Ricci, C. M. Carbonaro, D. Nadali, A. Polcaro in press *Arch. and Antr. Sciences* (2016)
  9. "A facile strategy for new organic White LED hybrid devices: design, features and engineering", Alberto Luridiana, GianLuca Pretta, Daniele Chiriu, Carlo Maria Carbonaro, Riccardo Corpino, Francesco Secci, Angelo Frongia, Luigi Stagi and Pier Carlo Ricci, *RSC Advances* 6(26) (2016)
  10. "Energy transfer mechanism between Ce and Tb ions in sol-gel synthesized YSO

- crystals" D. Chiriu, L. Stagi, C. M. Carbonaro, R. Corpino, P. C. Ricci, Mater. Chem. Phys. 171, 201-207 (2016)
11. "Towards the development of new phosphors with reduced content of rare earth elements: Structural and optical characterization of Ce:Tb: Al<sub>2</sub>SiO<sub>5</sub>." D. Chiriu, L. Stagi, C. M. Carbonaro, R. Corpino, M.F. Casula, P. C. Ricci, Material Research Bulletin Vol 77, 15-22 (2016)
  12. "Luminescence enhancement by energy transfer in melamine-Y<sub>2</sub>O<sub>3</sub>:Tb<sup>3+</sup> nanohybrids", Luigi Stagi, Daniele Chiriu, Andrea Ardu, Carla Cannas, Carlo M. Carbonaro and Pier Carlo Ricci, J. Appl. Phys. 118, 125502 (2015)
  13. "Drying oil detected in mid-third Millennium B.C. Mesopotamian clay artifacts: Raman spectroscopy and DFT simulations study" D. Chiriu, P. C. Ricci, C. M. Carbonaro, D. Nadali, A. Polcaro, MICROCHEMICAL JOURNAL. 124 (2016) 386-395
  14. "X-ray induced color change on dense yttria samples obtained by spark plasma sintering" Attia, Mohammed A. A.; Garroni, Sebastiano; Chiriu, Daniele; et al. CHEMICAL PHYSICS LETTERS Volume: 618 Pages: 108-113 Published: JAN 2 2015
  15. "Selective reading of stored information in RE doped aluminium perovskites" Chiriu, D.; Carbonaro, C. M.; Corpino, R.; et al. CRYSTAL RESEARCH AND TECHNOLOGY Volume: 50 Issue: 1 Pages: 43-48 Published: JAN 2015
  16. "Light induced TiO<sub>2</sub> phase transformation: Correlation with luminescent surface defects" Stagi, Luigi; Carbonaro, Carlo Maria; Corpino, Riccardo; et al. PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS Volume: 252 Issue: 1 Pages: 124-129 Published: JAN 2015
  17. "Raman Study on Pompeii Potteries: The Role of Calcium Hydroxide on the Surface Treatment" Chiriu, Daniele; Ricci, Pier Carlo; Polcaro, Andrea; et al. JOURNAL OF SPECTROSCOPY Pages: 1-10 Published: 2014
  18. "Structure Solution of NaYO<sub>2</sub> Compound Prepared by Soft Chemistry from X-Ray Diffraction Powder Data" Stagi, Luigi; Ricci, P. Carlo; Chiriu, Daniele; Conference: 10th European Symposium on Electrochemical Engineering Location: Chia, ITALY Book Series: Chemical Engineering Transactions Volume: 41 Pages: 409-414 Published: 2014
  19. "On The Origin Of Blue And UV Emission Bands In Mesoporous Silica" Carbonaro, Carlo M.; Corpino, Riccardo; Ricci, Pier Carlo; et al Conference: 10th International Symposium on SiO<sub>2</sub>, Advanced Dielectrics and Related Devices FUNDAMENTALS AND APPLICATIONS IN SILICA AND ADVANCED DIELECTRICS (SIO2014) Book Series: AIP Conference Proceedings Volume: 1624 Pages: 15-22 Published: 2014
  20. "Fluorescence Properties of Dye Doped Mesoporous Silica" Carbonaro, Carlo M.; Corpino, Riccardo; Ricci, Pier Carlo; et al Conference: 10th International Symposium on SiO<sub>2</sub>, Advanced Dielectrics and Related Devices FUNDAMENTALS AND APPLICATIONS IN SILICA AND ADVANCED DIELECTRICS (SIO2014) Book Series: AIP Conference Proceedings Volume: 1624 Pages: 23-30 Published: 2014
  21. "Synthesis and Characterization of Tunable Coumarin-Linked Glasses as New Class of Organic/Inorganic Phosphors" Luridiana, Alberto; Pretta, Gianluca; Secci, Francesco; et al. FUNDAMENTALS AND APPLICATIONS IN SILICA AND ADVANCED DIELECTRICS (SIO2014) Book Series: AIP Conference Proceedings Volume: 1624 Pages: 81-86 Published: 2014
  22. "Surface Effects and Phase Stability in Metal Oxides Nanoparticles Under Visible Irradiation" Ricci, P. C.; Carbonaro, C. M.; Corpino, R.; et al. FUNDAMENTALS AND APPLICATIONS IN SILICA AND ADVANCED DIELECTRICS (SIO2014) Book Series: AIP Conference Proceedings Volume: 1624 Pages: 104-110 Published: 2014
  23. "Effects of Protic and Aprotic Solvents in Mesoporous Silica: Tuning the UV-Vis Emission Properties by Means of Surface Activation" Carbonaro, Carlo M.; Corpino, Riccardo; Ricci, Pier Carlo; et al. JOURNAL OF PHYSICAL CHEMISTRY C Volume: 118 Issue: 45 Pages: 26219-26226 Published: NOV 13 2014
  24. "Sensitivity to oxygen environments of mesoporous silica samples with different porosities", Carbonaro C.M., Corpino R., Ricci P.C., Chiriu D., Journal of Non-

- Crystalline Solids Vol. 45, pages 60-65 (2014)
25. "Structurally defective cerium doped lutetium–yttrium oxyorthosilicates for optically stimulated luminescence imaging devices" Carlo Ricci, Carlo Maria Carbonaro, Daniele Chiriu and Alberto Anedda, *J. Mater. Chem.*, 21 (45), pp. 18425-18430 (2011)
  26. "Optical properties of pure Ytterbium Aluminium perovskites" *Optical Materials Vol. 33, Issue 7, Pages 1000-1003 May 2011* – P.C. Ricci, A. Casu, D. Chiriu, C. Corpino, C.M. Carbonaro, M. Marceddu, M. Salis, A. Anedda (2011)
  27. "Pressure effects in lutetium yttrium oxyorthosilicate single crystals" Pier Carlo Ricci, Daniele Chiriu, Carlo Maria Carbonaro, Serge Desgreniers, Emery Fortin and Alberto Anedda – *J. Raman Spectroscopy Vol. 39, 1268-1275* (2008)
  28. "Ce<sup>3+</sup>-doped lutetium yttrium orthosilicate crystals: Structural characterization" Pier Carlo Ricci, Carlo Maria Carbonaro, Daniele Chiriu, Riccardo Corpino, Nicola Faedda, Marco Marceddu and Alberto Anedda – *Materials Science and Engineering: B, 146, 2-6* (2008)
  29. "Structural characterization of Lu<sub>1.8</sub> Y<sub>0.2</sub>SiO<sub>5</sub> crystals" D. Chiriu, N. Faedda, A. Geddo Lehmann, P.C. Ricci, A. Anedda, E. Fortin, S. Desgreniers, *Physical Review B Vol. 76, 054112* (2007)
  30. "Photoluminescence characterization of sol-gel prepared low density silica samples", C. M. Carbonaro, D. Chiriu, R. Corpino, P.C. Ricci, and A. Anedda, *Journal of Non-Crystalline Solids Vol. 353, 550* (2007).
  31. "Electron-phonon coupling in Iron doped Yttrium Aluminum Garnet" A. Anedda, C.M. Carbonaro, D. Chiriu, R. Corpino, M. Marceddu, P.C. Ricci - *Physical Review B Vol. 74, 245108* (2006)
  32. "Photoluminescence of Ce and Pr codoped Calcium Thiogallate" A. Anedda, C.M. Carbonaro, D. Chiriu, R. Corpino, M. Marceddu, P.C. Ricci, A.N. Georgobiani, B.G. Tagiev, O.B. Tagiev, S.A. Abushev and I. M. Tiginyanu –*Physica Status Solidi (C) – Vol. 3(8), 2717* (2006)
  33. "Donor-Acceptor pairs and excitons recombinations in AgGaS<sub>2</sub>" M. Marceddu, A. Anedda, C.M. Carbonaro, D. Chiriu, R. Corpino and P.C. Ricci - *Applied Surface Science – Vol. 253, 300* (2006)
  34. "Vibrational Properties of mixed (Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>)<sub>x</sub>-(Y<sub>3</sub>Sc<sub>2</sub>Ga<sub>3</sub>O<sub>12</sub>)<sub>1-x</sub> crystals" D.Chiriu, P.C. Ricci, C.M. Carbonaro, A. Anedda, M. Aburish-Hmidat, A. Grosu, PG. Lorrai and E. Fortin –*Journal of Applied Physics Vol. 100 (3), 33101* (2006)
  35. "Compositional tuning of photoluminescence properties in Nd-doped YAG-YSGG structures" A. Anedda, C.M. Carbonaro, D. Chiriu, P.C. Ricci, M. Aburish-Hmidat, M. Guerini, P.G. Lorrai and E. Fortin – *IEEE Journal of Quantum Electronics 42 (6), 563* (2006)
  36. "Photo-electrochemical formation of porous GaP", P.C. Ricci, A. Anedda, C.M. Carbonaro, D. Chiriu, F. Clemente, R. Corpino, *Physica Status Solidi (C) 9, 3365* (2005).

#### Conferences

##### **E-MRS 2014 Spring meeting, Lille, France.**

Invited Speaker: "Smart labels from secondary CRM waste" Chiriu D.,  
 Poster: "Carbon-dots embedded in mesoporous silica for solid state applications": Carlo Maria Carbonaro, Pier Carlo Ricci, Riccardo Corpino, Daniele Chiriu, Luigi Stagi, Maria Francesca Casula, Danilo Loche

Poster: "New phosphors with reduced content of rare earth elements: Ce:Tb: Al<sub>2</sub>SiO<sub>5</sub>": D. Chiriu, L. Stagi, C.M. Carbonaro, R. Corpino, M. F. Casula, P.C. Ricci,

##### **FISMAT 2015, PALERMO, ITALY.**

Oral presentation: "RARE EARTH DOPED Y<sub>2</sub>SiO<sub>5</sub> CHARACTERIZATION FOR OPTICALLY STIMULATED LUMINESCENCE DOSIMETRY APPLICATIONS" CHIRIU D.

##### **TECHNART 2015, CATANIA, ITALY.**

POSTER: "RAMAN SPECTROSCOPY INVESTIGATION OF ANCIENT MESOPOTAMIAN POTTERIES: STUDY ON DECORATIVE PAINTING" CHIRIU D., RICCI P.C., CARBONARO C.M., NADALI D., POLCARO A..

**10TH EUROPEAN SYMPOSIUM ON ELECTROCHEMICAL ENGINEERING, CHIA (CA) – ITALY**

POSTER: "STRUCTURE SOLUTION OF NAYO<sub>2</sub> COMPOUND PREPARED BY SOFT CHEMISTRY FROM X-RAY DIFFRACTION POWDER DATA" STAGI L., RICCI P.C., CHIRIU D., NAPOLITANO E., ENZO S.

**10TH SYMPOSIUM SiO<sub>2</sub>, ADVANCED DIELECTRICS & RELATED DEVICES, CAGLIARI – ITALY**

POSTER: "INVESTIGATING UV AND BLUE EMISSIONS IN MESOPOROUS SILICA BY MEANS OF INTERACTION WITH DIFFERENT SOLVENTS"

POSTER: "FLUORESCENCE PROPERTIES OF DYE DOPED HEXAGONAL ORDERED MESOPOROUS SILICA NANOPARTICLES"

POSTER: "ENERGY TRANSFER BETWEEN CE END TB IONS IN SOL-GEL SYNTHESIZED YSO CRYSTALS "

POSTER: "SYNTHESIS AND CHARACTERIZATION OF TUNABLE COUMARIN- LINKED GLASSES AS NEW CLASS OF ORGANIC/INORGANIC PHOSPHORS"

**E-MRS 2014 Spring meeting, Lille, France.**

Oral session: "Energy transfer between Ce end Tb ions in sol-gel synthesized YSO crystals" Chiriu D., Ricci P.C., Carbonaro C.M., Corpino R., Stagi L.

Poster: "Selective read of stored information in RE doped aluminium perovskites" Chiriu D., Ricci P.C., Carbonaro C.M., Corpino R., Stagi L.

**E-MRS 2007 Spring meeting, Strasbourg, France.**

Oral session: "Ce<sup>3+</sup>-doped lutetium yttrium orthosilicate crystals: Structural characterization" P. C. Ricci, C.M. Carbonaro, D. Chiriu, R. Corpino, N. Faedda, M. Marceddu and A. Anedda

**SiO<sub>2</sub>, Advanced Dielectrics & Related Devices- Mondello (Palermo), Italy.**

Poster: "Photoluminescence characterization of sol-gel prepared low density silica samples, C. M. Carbonaro, D. Chiriu, R. Corpino, P.C. Ricci, and A. Anedda

**ICTMC 15 Kyoto JAPAN 2006**

Poster: "Photoluminescence of Ce and Pr codoped Calcium Thiogallate" A. Anedda, C.M. Carbonaro, D. Chiriu, R. Corpino, M. Marceddu, P.C. Ricci, A.N. Georgobiani, B.G. Tagiev, O.B. Tagiev, S.A. Abushev and I. M. Tiginyanu

**E-MRS 2005 Spring meeting, Strasbourg, France**

Poster: "Donor-Acceptor pairs and excitons recombinations in AgGaS<sub>2</sub>" M. Marceddu, A. Anedda, C.M. Carbonaro, D. Chiriu, R. Corpino and P.C. Ricci

Poster: "Quality Characterization of Nd:YAG rods by means of synchrotron radiation" D.Chiriu, A. Anedda, C.M. Carbonaro, R.Corpino, M.Marceddu and P.C.Ricci.

Patent

**International Patent** n° WO2009/118317 - PCT/EP2009/053461 "Doped rare earth orthosilicates used as optical devices for recording information" SAES GETTERS S.p.A. and UNIVERSITÀ DEGLI STUDI DI CAGLIARI –: A. Anedda, D.Chiriu, P.C.Ricci

Memberships

Staff of EIP EU Commitment RESET " Raw Elements Substitution in Electronic & optoelectronic Technologies"

Awards

FIRB "Young Researchers" research grant (2012): Ministry of Education, Universities and Research (MIUR)

"Bio Plug-In" 2015 "Smart Label for low temperature environment control (food and medicines)": National order of biologists