

Europass Curriculum Vitae

Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Fax(es)

Email(s)

Nationality(-ies)

Date of birth

Gender

Occupational field

Work experience

2010 - 2018

October-December 2018

February 2018

Faculty Associate

2009 -

March - November 2008

Project

Faculty Associate

2004 - 2009

Project

Co-workers-

2003 - 2004

Project

Supervisor

Co-workers

2000 - 2002

Project

Supervisor

Co-worker

Satta, Alessandra

CNR-IOM Cagliari

Istituto Officina dei Materiali

c/o Department of Physics, University of Cagliari,

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satta@iom.cnr.it (alessandra.satta@cnr.it)

Italian

Cagliari, 15/01/1966

Female

Research associate at CNR-IOM Cagliari

In charge of the unit of Cagliari of the Istituto Officina dei Materiali in the Consiglio Nazionale delle Ricerche (CNR-IOM Cagliari).

Visiting Scientist at the Department of Physics of University of North Texas (UNT), TX, USA.

Visiting Scientist at UNT under a Short Term Mobility program. Project: Novel approach in the study of cadmium yellow pigments degradation.

prof. Marco Buongiorno Nardelli

Researcher (permanent staff) at CNR-IOM Cagliari

Fulbright Research Scholarship at the Department of Chemistry of the Princeton University, Princeton (NJ), USA

Biom mineralization of Calcium Carbonate: a first principles study.

prof. Annabella Selloni

Tenure-track research fellow at CNR-INFM SLACS.

Numerical Simulations in Solid State Physics.

prof. Paolo Ruggerone, Cagliari, Italy, Dr. Giovanni De Giudici, Cagliari, Italy

Post-doc (research associate) at the CNR-IMM, Bologna, Italy.

Theoretical study of point defects in heavily doped silicon.

dr. Giorgio Lulli, IMM-CNR, Bologna, Italy.

prof. Luciano Colombo, University of Cagliari, Italy

Post-doc at INFM (National Institute for Condensed Matter Physics, Cagliari, Italy

Multiscale simulations of complex systems

prof. Luciano Colombo, University of Cagliari, Italy.

prof. Fabrizio Cleri, IEMN, CNRS Université de Lille, France

1998 - 2000 Project Supervisor Co-workers	Post-doc at the Department of Physics, University of Cagliari, Italy Theoretical study from first principles on <i>i</i>) water/rock interactions at PbS cleavage surface; <i>ii</i>) self-diffusion of point defects in transition metals. prof. Franco Meloni, University of Cagliari, Italy. prof. Stefano de Gironcoli, SISSA, Trieste, Italy; prof. Pierpaolo Zuddas, LGE - IPGP, France; dr. Giovanni De Giudici, LGE, IPGP, France; dr. François Willaime, SRMP - CEA-Paris-Saclay, France.
1998 Project Co-workers	Post-doc at the Laboratoire de Geochimie des Eaux (LGE) - Institut de Physique du Globe de Paris (IPGP), Paris, France. Application of first principles methods in mineral surfaces reactivity. prof. Stefano de Gironcoli, SISSA, Trieste, Italy; prof. Pierpaolo Zuddas and dr. Giovanni De Giudici, LGE - IPGP, Paris, France.
1996 - 1998 Project Supervisor Co-workers	Post-doc at the SRMP CEA/Saclay, France; Self-diffusion of vacancies in bcc transition metals from first principles dr. François Willaime, SRMP, France. prof. Stefano de Gironcoli, SISSA, Trieste, Italy

Education and training

1996 Dissertation Title Advisors	PhD in Physics: University of Cagliari, Italy. Electronic and structural properties of nitrides (AlN, GaN and InN) and band offset at AlN/GaN (10 $\bar{1}$ 0) and (0001) interfaces. prof. Franco Meloni, prof. V. Fiorentini, University of Cagliari, Italy.
1992 Dissertation Title Advisors	Laurea (Diploma) in Physics (Summa cum Laude): University of Cagliari. Ultrasoft Pseudopotentials: a Car-Parrinello study on Fluorine. prof. Franco Meloni, University of Cagliari, Italy.
1991 Project Advisors	Stage at the Institut Romand de Recherche Numérique en Physique des Matériaux (IRRMA) - Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Swiss First principles methods in condensed matter physics: Ab initio molecular dynamics (Car-Parrinello) prof. A. Baldereschi, prof. Alfredo Pasquarello, EPFL, Lausanne, Swiss

Personal skills and competences

Mother tongue(s)	Italian
Other language(s)	Fluent English, fluent french
Operating Systems	UNIX/LINUX - MAC OS X in PC/Workstation/HPC).

Teaching

Academic Year 2014/15 16 hours/2 credits	Adjunct Professor of Solid State Physics within the <i>Tirocinio Formativo Attivo (TFA)</i> - A038 - University of Cagliari
Academic Year 2013/14 16 hours/2 credits	Adjunct Professor of Solid State Physics within the <i>Percorsi Abilitanti Speciali (PAS)</i> - A038 - University of Cagliari
AYs 2011/12, 2010/11 (40 hours/4 credits) x 2	Adjunct Professor of Fundamentals of Computer Science, Department of Physics, University of Cagliari.
AYs 2007/08 - 2003/04 (60 hours/6 credits) x 5	Adjunct Professor of General Physics, Department of Geoengineering and Environmental Technologies (DIGITA), University of Cagliari.

Divulagation and Dissemination

2017-2018

Series of conferences on the Role of Science in Art Conservation presented in primary, secondary, high schools and various science events (e.g. Notte Europea dei Ricercatori, Cagliari, Festival Scienza, Cagliari).

12/2018

Invited seminar at Center for Scientific Studies in the Arts, Northwestern University and the Art Institute of Chicago: *Towards modelling the degradation of pigments: cadmium yellow as a case study*

Advisoring

2013 - 2016

PhD Thesis Advisor of Laura Giacometti, Department of Physics, University of Cagliari

Project

Computational Physics and Chemistry meet Cultural Heritage: discoloring of yellow-CdS

2012 - 2015

Post Doctoral Supervisor of Danilo Addari

Project

Heavy metals contamination: a theoretical method of the adsorption of metal ions on biomineral surfaces

2014

Post Lauream contract Supervisor of Carla Cutrano

Project

Modeling of the solvation mechanism of heavy metals by means of first principles calculations.

Honors and Awards

2009-2012

Qualification of Expert on Condensed Matter Physics, Faculty of Engineering, University of Cagliari, Italy. (Studio della Materia in FIS/03)

2007

Awarded a Fulbright Research Scholarship for eight-months research activity on *Biominalization of calcium carbonate: a first principle study*, at Princeton University (NJ, USA).

2002

First prize for "The best presentation in condensed matter physics", National congress of the Italian Physical society, 2002.

2000-2004

Qualification for Assistant Professor in the Section 28, Condensed Matter, from the National Council of Universities of France.

Administration and Projects

Projects

2014-2017

RAS Regione Autonoma della Sardegna, Programma Master and Back - Interazione tra superfici di biominerali - rilevanti nel degrado dei beni architettonici ed ambientali - e l'ambiente: assorbimento di acqua, CO₂ e molecole organiche.

2013-2016

Principal Investigator

Banco di Sardegna Foundation - Use of calcium carbonate to sequester lead and cadmium in aqueous environment.

2012-2015

Principal Investigator

AUSI (Associazione Universitaria per il Sulcis Iglesiente, Monteponi, Italy) - Heavy metals contamination: a theoretical method of the adsorption of metal ions on biomineral surfaces.

2012

Principal Investigator

Banco di Sardegna Foundation - Heavy metals adsorption: a theoretical study on biomineralization.

Organization of international workshops and schools

2015

Co-organizer of the 7th International Theoretical Biophysics Symposium, Cagliari, Italy, 2015.

Partecipation to International Conferences

- 2018 Gordon Research Conference, Barcelona, Spain. Invited Talk: *Towards modelling the degradation of pigments: cadmium yellow as a case study.*
- 2017 TECHNART 2017, Bilbao, Spain. Oral presentation: *Role of defects in the reactivity of Cd-yellow*
- 2016 Gordon Research Conference and Seminar, Newry (ME) USA 2014. Poster: *Degradation of Cd-yellow pigment: an ab initio study of defects and adsorption of oxygen and water on CdS;*
- 2016 MRS - Fall Meeting, Boston, USA 2014. Oral presentation: *Degradation of Cd-yellow pigment: an ab initio study of defects and adsorption of O₂ and H₂O on CdS;* Poster: *Influence of HCOO⁻ on Calcite Growth from First Principles;*
- 2014 MRS - Fall Meeting, Boston, USA 2014. Posters: *I - HCOOH on Hydrated Calcite from first principles; II - The coprecipitation of hydrated Cd(II) on stepped calcite surfaces: an Ab Initio study*
- 2014 Gordon Research Conference and Seminar, Newry (ME) USA 2014. Poster: *Degradation of Cd-yellow Paints: ab initio study of the adsorption of oxygen and water on (10.0) CdS surface*
- 2013 25th Annual Workshop on "Recent Developments in Electronic Structure Theory", 2013, The College of William and Mary (VA), USA; 2 Posters presentation: *I - Coprecipitation of Cd(II) aqua-ion on calcite surface: a first principles study; II - Carboxyl groups on hydrated calcite from first principles.*
- 2012 European Materials Research Society (EMRS), 2012, Warsaw, Poland. Poster presentation: *Coprecipitation of Cd(II) aqua-ion on calcite surface from first principles.*

Publications (selected)

Laura Giacometti, Austin Nevin, Daniela Comelli, Gianluca Valentini, Marco Buongiorno Nardelli, and Alessandra Satta.
Role of cadmium vacancies in the degradation of cadmium yellow pigments.
AIP Advances, 8(6):065202, 2018

Laura Giacometti and Alessandra Satta.
Reactivity of cd-yellow pigments: Role of surface defects.
Microchemical Journal, 137:502 – 508, 2018

L. Giacometti and A. Satta.
Degradation of Cd-yellow paints: Ab initio study of native defects in {10.0} surface CdS.
Microchemical Journal, 126:214–219, 2016

Danilo Addari and Alessandra Satta.
Influence of HCOO⁻ on Calcite Growth from First-Principles.
J. Phys. Chem. C, 119(34):19780–19788, 2015

Laura Giacometti and Alessandra Satta.
Degradation of cd-yellow paints: ab initio study of the adsorption of oxygen and water on 10.0 cds surface.
Journal of Physics: Conference Series, 566(1):012021, 2014

Quanto dichiarato nel presente curriculum vitae corrisponde al vero ai sensi degli artt. 46 e 47 del D.P.R. 445/2000. Il D.Lgs. 30/6/2003, n. 196 "Codice in materia di protezione dei dati personali" regola il trattamento dei dati personali, con particolare riferimento alla riservatezza, all'identità personale e al diritto di protezione dei dati personali; l'interessato deve essere previamente informato del trattamento. La norma in considerazione intende come "trattamento" qualunque operazione o complesso di operazioni concernenti la raccolta, la registrazione, l'organizzazione, la conservazione, la consultazione, l'elaborazione, la modifica, la selezione, l'estrazione, il raffronto, l'utilizzo, l'interconnessione, il blocco, la comunicazione, la diffusione, la cancellazione e la distruzione di dati, anche se non registrati in una banca dati. In relazione a quanto riportato, autorizzo il CNR al trattamento dei dati contenuti nel presente curriculum vitae e nella documentazione della quale fa parte integrante, sollevandolo da ogni responsabilità e autorizzandolo alla pubblicazione, nel sito web del CNR, della relazione inerente alle proprie ricerche svolte durante il soggiorno finanziato dal CNR nell'ambito del Programma STM. Inoltre acconsento all'aggiornamento delle informazioni intranet che mi riguardano sia relative le pubblicazioni sia alle ricerche svolte. The Undersigned hereby authorises the CNR to utilize and store the personal sensitive data contained in the attached Curriculum Vitae for the purposes of the Programme and within the framework of the Data protection Act No. 196, dates 30 June 2003 as promulgated by the Italian Government.

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X Si, Acconsento