

SERGIO BRUTTI – curriculum vitae

Part I – General Information

Full Name	Sergio Brutti
Date of Birth	02/02/1976
Place of Birth	Roma (RM) Italia
Citizenship	Italian
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Spoken Languages	Italian; English

Part II – Education

Type	Year	Institution	Notes (degree, experience, ...)
University Graduation	2000	Università di Roma La Sapienza	Laurea in Chimica, ordinamento quinquennale, obtained in 5 years (legal expected duration), final mark 110/110 e lode
PhD	2004	Università di Roma La Sapienza	Dottorato in Scienze Chimiche; Visiting Scientist at the University of Tokyo Japan (may-june 2003)

Part III – Academic Appointments

Start	End	Institution	Position
Nov 2003	Oct 2004	Università di Roma La Sapienza	Junior Post-doc (co.co.co) – 12 months
Nov 2004	May 2005	University of Oxford (UK)	Visiting Scientist Fellowship funded by the University of Rome La Sapienza - 7 months
July 2005	Oct 2005	Università di Roma Tre	Junior Post-doc (co.co.co) – 4 months
June 2006	Jan 2007	Università di Roma Tre	Senior Post-doc (assegno di ricerca) – 8 months
Feb 2007	Jan 2009	Università di Roma La Sapienza	Senior Post-doc (assegno di ricerca) – 24 months
Feb 2009	June 2009	University of Thessaloniki (Greece)	Senior Post-doc (fellowship) – 5 months
July 2009	June 2011	Università di Roma La Sapienza	Senior Post-doc (borsa di studio post-doc) – 24 months (shared position with the - University of St Andrew-UK)
July 2011	Dec 2011	Università di Roma La Sapienza	Senior Post-doc (assegno di ricerca) – 6 months
Dec 2011	Dec 2014	Università della Basilicata	Permanent Researcher (ricercatore a tempo indeterminato) non confermato - 36 mesi
Dec 2014	Dec.2018	Università della Basilicata	Permanent Researcher (ricercatore a tempo indeterminato) confermato – 48 mesi
Dec.2018	Current position	Università di Roma La Sapienza	Permanent Researcher (ricercatore a tempo indeterminato) confermato – 1 mese

Part IIIb – Other Appointments

Year	Appointment
2012	Member of the PhD board: Università degli Studi della BASILICATA; Title: "SCIENZE CHIMICHE/CHEMICAL SCIENCES" Starting academic year: 2012 - Cycle: XXVIII
2013	Member of the PhD board: Università degli Studi della BASILICATA; Title: "SCIENZE" Starting academic year: 2013 - Cycle: XXIX
2016-2017	Member of the PhD board: Università degli Studi di SALERNO (consorzio con l'Università della Basilicata) Titolo: "CHIMICA" Starting academic year: 2016/17 - Cycle: XXXII Starting academic year: 2017/18 – Cycle XXXIII
Feb. 2015	Member of the Italian National PhD Evaluation Committee: Università degli Studi di Verona; Title: “Nanotecnologie e nanomateriali per applicazioni” afferente alla scuola di dottorato di scienze ingegneria medicina, a.y. 2015
Dec. 2015	Member of the Italian National PhD Evaluation Committee: Università degli Studi della CALABRIA; Title: “Scienza e tecnica – Bernardino Telesio” Indirizzo: “Mesofasi e Materiali Molecolari” Cycle XVIII
May- June 2015	Invited Professor: Université d’Evry Val d’Essonne (France); Local Contact: Riccardo Spezia; LAMBE-CNRS
May-June 2017	Visiting Researcher: Chalmers University of Technology; Local Contact: Prof. Aleksandar Matic; Head of Division Condensed Matter Physics
2012-2013-2014	Referee (valutatore) for the Ministero dell’Istruzione dell’Università e della Ricerca (MIUR – Italian Administration) in the frame of the calls: PRIN 2012; FIRB 2013; SIR 2014.
2016	Referee of the Irish Research Council in the frame of the Ireland Postdoctoral Fellowship Scheme 2016.
2016-2017	Reviewer of the Austrian Science Fund (FWF) in the frame of the Erwing Schroedinger Grant calls 2016-2017
2016-2017	Quality Control Manager (Responsabile Assicurazione della Qualità) of the Dept. Science, University of Basilicata
Dec 2014	Abilitazione Scientifica Nazionale 03/A2 (Modelli e Metodologie per le Scienze Chimiche) – seconda fascia
Apr 2017	Abilitazione Scientifica Nazionale 03/A2 (Modelli e Metodologie per le Scienze Chimiche) – prima fascia
Apr 2017	Abilitazione Scientifica Nazionale 03/B1 (Fondamenti delle Scienze Chimiche e sistemi inorganici) – seconda fascia
Apr 2017	Abilitazione Scientifica Nazionale 03/B2 (Fondamenti chimici delle tecnologie) – seconda fascia
Nov 2017	Abilitazione Scientifica Nazionale 03/B1 (Fondamenti delle Scienze Chimiche e sistemi inorganici) – prima fascia

Part IV – Teaching Experience

Academic Year	Semester	Institution	Lecture/Course
2002/2003	I	Università di Roma La Sapienza	Chimica Generale ed Inorganica (0 CFU)*
2007/2008	II	Università di Roma La Sapienza	Chimica Fisica I (0 CFU)*
2011/2012	II	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2011/2012	II	Università della Basilicata	Didattica e Laboratorio di Chimica Fisica (2 CFU)***
2012/2013	II	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2013/2014	I	Università della Basilicata	Advanced Physical Chemistry, 1 st module (5 CFU)****
2013/2014	II	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2014/2015	I	Università della Basilicata	Advanced Physical Chemistry, 1 st module (5 CFU)****
2014/2015	II	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2015/2016	I	Università della Basilicata	Physical Chemistry of Materials (6 CFU)****
2015/2016	II	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2016/2017	I	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2016/2017	II	Università della Basilicata	Physical Chemistry of Materials (6 CFU)****
2017/2018	I	Università della Basilicata	Informatics for Chemistry (5 CFU)**
2017/2018	I	Università della Basilicata	Physical Chemistry of Materials (6 CFU)****
2018/2019	I	Università di Roma La Sapienza	General and Inorganic Chemistry (0 CFU)*****

* Attività di supporto agli studenti (tutoraggio) in corsi tenuti da docenti della Facoltà di Scienze MFN, corso di laurea triennale in Chimica (Supervisors Proff. E.Bottari e C.Galli)

** Affidamento Didattico/titolare del corso, Corso di Laurea Triennale in Chimica, tipologia di corso a.a.: altre attività non attribuite a nessun SSD;

*** Affidamento Didattico/titolare del corso, Corso di Tirocinio Formativo Attivo (TFA) classe A013, SSD CHIM/02;

**** Affidamento Didattico/titolare del corso, Corso di Laurea Magistrale in Scienze Chimiche, SSD CHIM/02;

***** Presidente della Commissione d'Esame, Corso di Laurea Triennale in Scienze Biologiche, SSD CHIM/03

Part V – Society memberships, awards and honors

Year	Title
2010	Premio Ordine dei Chimici-Luam per il miglior poster in Chimica Fisica – Convegno Giovani Chimici, Università di Roma La Sapienza, 16-17 luglio 2010
2010	Premio della Società Chimica Italiana “I giovani e la chimica 2010”
2012-2018	Associate Member (Research Associate) of the Istituto dei Sistemi Complessi – Consiglio Nazionale delle Ricerche (ISC-CNR)
2004-2019	Member of the Italian Society of Chemistry (SCI) From January 2016 member of the “Board of Directors of the Basilicata Section”
2010-2018	Member of the American Chemical Society (ACS)
2012-2019	Member of the Electrochemical Society (ECS)
2014-2019	Member of the International Society of Electrochemical (ISE)
2017	Finanziamento alla ricerca di base riservato ai ricercatori universitari e professori associati universitari - FFARB – MIUR
2019	Member of the INSTM consortium

Part V - Funding Information [grants as PI-principal investigators / I-investigator] 2012-2014

Year	Title	Program	Grant Value	Details
2012	Idruri quali anodi ad alta capacità per batterie litio ione	FIRB Futuro in Ricerca 2010 (60 months)	418 000 Euro (budget CNR-ISC unit)	Principal investigator (PI) of the CNR-ISC unit
2013	Membrane nanocomposite avanzate ed elettrocatalizzatori innovativi per celle a combustibile ad elettrolita polimerico a lunga durata, NAMED-PEM	PRIN 2010-2011 (36 months)	130 000 Euro (budget Univr unit)	Investigator (I) in the Univr unit
2013	SmartBasilicata	Smart Cities and Communities and Social Innovation - PON “R&C” 2007-2013 (60 months)	40 000 Euro (budget of the OR2.3.5 sub-activity)	Investigator (I) in the OR2.3.5 subactivity unit
2012	Materiali per Batterie Li-ione	Ricerca di Interesse Locale (RIL 2012) Università della Basilicata (undefined duration)	2 000 Euro	Principal investigator (PI)
2013	Materiali innovativi per Batterie Li-ione	Ricerca di Interesse Locale (RIL 2013) Università della Basilicata (undefined duration)	3 000 Euro	Principal investigator (PI)
2015	Materiali innovativi per Batterie Li-aria”	Ricerca di Interesse Locale (RIL 2015) Università della Basilicata (undefined duration)	3 500 Euro	Principal investigator (PI)
2013	Synthesis of a composite material based onLiCoPO ₄ and its application innovative secondary lithium cells	Area Science Park/Basilicata Innovazione (20 months)	56 000 Euro	Principal investigator (PI)
2014	Performances and failure analysis of a Na-ion cell	Area Science Park/Basilicata Innovazione (14 months)	20 000 Euro	Principal investigator (PI)

Part V - Funding Information [grants as PI-principal investigators / I-investigator] 2015-2019

Year	Title	Program	Grant Value	Details
2015	Assessment of the conditioning cycle of a Na-ion cell	Area Science Park/Basilicata Innovazione (2 months)	10 000 Euro	Principal investigator (PI)
2015	Characterization of full Li-ion cells and analysis of via-gas phase degradation mechanisms	SAES Getters Spa – Research Contract (19 months)	45 000 Euro	Principal investigator (PI)
2017	Contratto di prestazione attività di formazione	SAES Getters Spa (6 months)	3 300 Euro	Principal investigator (PI)
2017	PAR2017 “Metallic lithium as negative electrode material for secondary Li-ion and post-lithium batteries”	ENEA-MISE (12 months)	15 000 Euro	Principal investigator (PI)
2018	Contratto di prestazione attività di formazione	SAES Getters Spa (6 months)	3 300 Euro	Principal investigator (PI)
2018	PAR2018 “Artificial SEI-layer on lithium electrodes”	ENEA-MISE (3 months)	16 000 Euro	Principal investigator (PI)
2019	H2020 “Si-DRIVE”	European Union (39 months)	350 000 Euro (budget of the CNR unit)	Investigator (I) in the CNR unit

Part Vb – Other Research Grants as PI (without budget)

Year	Title	Granting Institution and program	Resources
2007	Electronic and dynamic properties of MgB ₂ and related composition-modulated superstructures	Caspar Consortium - Bando B 2007	Computational Resources
2009	DFT modelling of metallic nanoparticles for lithium intercalation	Caspar Consortium - Standard HPC Grant 2009	Computational Resources
2010	Thermodynamic modelling by first principles calculations of metallic substitution in the TiO ₂ lattice	Caspar Consortium - Standard HPC Grant 2010	Computational Resources
2012	First principles study of metallic and hydride-based clusters	CINECA - ISCRA class C projects	Computational Resources
2013	Diffraction study of the self-discharge phenomena of LiCoPO ₄ in rechargeable lithium cells	MCX beamline – Elettra synchrotron	Beamtime; project number 20130017
2014	In situ diffraction study of the HCR of NaAlH ₄ in lithium cells	MCX beamline – Elettra synchrotron	Beamtime; project number 20140458
2015	In situ diffraction study of sodium alanates in lithium cells	MCX beamline – Elettra synchrotron	Beamtime; project number 20150410
2017	Electrochemical lithium de-intercalation/intercalation in Li(Co _{1/3} Fe _{1/3} Mn _{1/3})PO ₄ cathodes by ex-situ XRD	MCX beamline – Elettra synchrotron	Beamtime; project number 20165060
2017	Investigation on Cr ³⁺ doped NiCo ₂ O ₄ @Ni foam cathodes for Li-O ₂ cells by ex-situ and in-situ XRD	MCX beamline – Elettra synchrotron	Beamtime; project number 20170198
2018	Pathways to singlet oxygen release in aprotic Li-O ₂ environments	CINECA ISCRA class C projects	Computational Resources

Part VI – Research Activities

Keywords	Brief description
Reaction Thermodynamics Energy Storage Materials Crystal Chemistry Advanced Materials X-ray diffraction Computational thermodynamics	<p>My research interests fall in the field of solid state chemistry and thermodynamics with the final aim to develop knowledge-based advanced materials for advanced technological applications. In particular my research approach integrates vertically the investigation of materials for energy applications exploiting a variety of techniques and complementary-strategies:</p> <p>(a) advanced inorganic synthesis;</p> <p>(b) physical-chemistry experimental characterization of the materials structural, thermodynamic and morphological properties (X-ray diffraction, scanning electron microscopy, transmission electron microscopy, atomic force microscopy, Raman spectroscopy, infrared spectroscopy, X-ray photoemission spectroscopy, X-ray absorption spectroscopies; Nitrogen adsorption; thermal analysis, calorimetric analysis);</p> <p>(c) functional characterization of materials (and processes) in energy storage devices (electrochemical techniques; in operando electrochemical/spectroscopic or electrochemical/diffraction investigation; ex situ investigation on post mortem materials, internal pressure investigation in electrochemical cells) at lab-scale or beyond (Li-batteries, Na-batteries, Li-O₂ batteries, supercapacitors; microbatteries; pouch-cells);</p> <p>(d) computational modelling by density functional theory (DFT) of solids to derive phase stabilities and predicts transformations in high temperature materials and electrochemical systems;</p> <p>(e) computational modelling by DFT or hybrid-DFT of molecules in gas phase or simulated solvents to derive thermodynamic stabilities and to predict the reactivity of organic solvents and salts for non aqueous electrolytes in electrochemical devices.</p>

Part VII – Summary of Scientific Achievements

Product type	Number	Database	Start	End
Papers (international) ISI (total)	89	Scopus & (*)	2001	2019
Papers (international) ISI (last 10 years)	64	Scopus & (*)	2009	2019
Papers (international) not-ISI	1	(*)	2017	2017
Conference Proceedings	5	(*)	2003	2015
Book chapters	2	(*)	2013	2019
Erratum	3	Scopus	2012	2019

Hirsch (H) Index	24
15-years H index	19
Total Citations	1772
Average Citation per Product	19.0
Total Impact Factor	357.16
Average Impact Factor	3.84

Details: 10 years 2009-2019; 15 years 2004-2019; total Impact factor calculated from data obtained using the Journal of Citation Reports database; Citation retrieved from Scopus (10 february 2019); Average Citation per Product and Average Impact Factor calculated in respect to the number of products quoted in the Scopus Database (i.e. 93); (*) personal database.