

CURRICULUM VITAE (last update January 2025)

Giacomo Cao

Professor of Chemical
Engineering: March 2001 - present

Address: Department of Mechanical, Chemical and Materials Engineering
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A. Personal Information:

Date of Birth: September 22, 1960
Place of Birth: Cagliari, Italy
Nationality: Italian
Family Status: Married with one child
Languages: Italian (mother tongue), English (mastery level)

B. Education and Qualifications:

University of Cagliari, Italy Nov. 1979 - Feb. 1986
Awarded: Dottore in Ingegneria Chimica [(110/110) cum laude]
(equivalent to a first class honours master degree in Chemical Engineering)
Thesis' title: Reduction Kinetics of Hydrometallurgical Residuals with
Carbon Monoxide - Hydrogen Mixtures

University of Bologna, Italy Jan. 1987 - Sep. 1990
Awarded: Dottore di Ricerca in Ingegneria Chimica
(equivalent to Ph. D. in Chemical Engineering)
Thesis' title: Parametric Sensitivity in Reacting Systems

C. Professional Experiences:

Separate list is available.

D. Fellowships, Honors and Recognitions:

Separate list is available.

E. Membership of Professional Societies:

Italian Chemical Society
American Society of Combustion Synthesis
The Combustion Institute
Italian Association of Chemical Engineering

Membership of Professional Societies - continued

University Group of Chemical Engineering Researchers
American Institution of Chemical Engineers
American Nano Society
Italian Association of Aeronautics and Astronautics

F. Research Interests:

Gas-Liquid Reactions and Reactors Engineering
Self-Propagating High-Temperature Reactions
Adsorption and Ion Exchange
Synthesis of Advanced Materials by SHS, FACS, BM and SPS
Mechanochemical Reactions and Reactors
Contaminated Sites Remediation
Toxic Wastes Inertization and Recycling
Tissue Engineering
Microalgae Technologies
Toxicology of Nanoparticles and Chemicals using hMSCs
ISRU and ISFR processes for space exploration
Astrobiology

G. Participation to financed research projects:

Separate list is available

H. Teaching Experiences:

Dynamics, Control and Instrumentation of Chemical Processes	1990-1991
Principles of Chemical Engineering	1991-1992
Principles of Environmental Chemical Engineering	1992-2001
Applied Chemical Kinetics	1994-2000
Applied Chemical Kinetics and Transport Phenomena for University Second Degree	2001-2002
Applied Chemical Kinetics for University First Degree	1999-2000
Industrial Chemistry	1996-1997 1998-1999
Metallurgy	1997-1999
Principles of Environmental Chemical	

Teaching Experiences – continued

Engineering for University Diploma and First Degree in Environmental Engineering	1994-2014
Transport Phenomena for University Second Degree in Environmental Engineering	2002-2006
Biomaterials for University First Degree in Biomedical Eng.	2005
Transport Phenomena in Biomedical Systems for University First Degree in Biomedical Engineering	2005
Bio-chemical Engineering (A) for University First Degree in Biomedical Engineering	2006 - 2019
Bio-chemical Engineering (B) for University First Degree in Biomedical Engineering	2006 - 2013
Transport Phenomena for University First Degree in Chemical Engineering	2014 - 2021
Introduction to Chemical Engineering for University First Degree in Chemical Engineering	2019 – 2021
Transport Phenomena for University First Degree in Environmental Engineering	2023 – present
Process Fundamentals for University First Degree in Industrial technologies for energy and digital transition	2023 - present

I. Seminar, Symposium and Conference Organization:

Separate list is available

J. Dissertations Directed:

Separate list is available.

K. Ph.D. Dissertations Directed:

Separate list is available.

L. Research Associates Supervised:

Separate list is available.

M. Publications:

Separate list is available.

N. Books (author or editor):

Separate list is available.

O. Patents:

Separate list is available.

P. Presentations at Conferences and Symposia:

Separate list is available.

Q. Invited Seminars, Conferences and Educational Articles:

Separate list is available.

R. References:

References can be obtained from:

Prof. Giorgio Carta
Department of Chemical Engineering
University of Virginia
Charlottesville, VA 22903, USA

Prof. Vladimir Hlavacek
Department of Chemical Engineering
SUNY/Buffalo
Amherst Campus, Furnas Hall 1003
Buffalo, N.Y. 14260, USA

Prof. Massimo Morbidelli
Dipartimento di Chimica Fisica Applicata
Politecnico di Milano
Piazza Leonardo da Vinci 32, 20100 Milano, Italy

Prof. Zuhair A. Munir
Department of Chemical Engineering and Materials Science
University of California
Davis, CA 95616-5294

Professional Experiences

ENICHEM Fellowship, Dipartimento di Ingegneria Chimica e Materiali, Universita' di Cagliari, Italy	Jul. 1986 - Jun. 1987
Ph.D. Student, Dipartimento di Ingegneria Chimica e Materiali, Universita' di Cagliari, Italy	Apr. 1987 - Dec. 1989
Visiting Scholar, Department of Chemical Engineering, University of Notre Dame, USA	Jan. 1988 - May. 1988
Consulting for Raffinerie Metalli Capra, Italy	Jun. 1988 - June 1989
Assistant Professor Dipartimento di Ingegneria Chimica e Materiali, Universita' di Cagliari, Italy	Mar. 1990 - Oct. 1992
Visiting Scholar, Department of Chemical Engineering, University of Notre Dame, USA	Jan. 1991 - Mar. 1991 Jun. 1991 - Sep. 1991
Visiting Scholar, Department of Chemical Engineering, University of Notre Dame, USA	Feb. 1992, Jun. 1992, Sept. 1992, Nov. 1992
AIChE Journal, Fluid Phase Equilibria, Solid State Sci., Afr. J. Bio., The Chem. Eng. Journal, Chem. Papers, Nano Mat. Nano Tech, Ind. Eng. Chem. Research, J. Pet. Tech. Alt. Fuels, J. Mat. Sci. Mat. Med., Annali di Chimica, Trans. Inst. Chem. Eng., Desalination, IchemE, J. Mat. Science, Chem. Eng. Sci., Chemosphere, Arch. Env. Prot. All. Comp., J. Mat. Synth.. Process., Waste Management, J. Mat. Res., Env. Chem. Lett., Mat. Chem. Phys., Macromolecules, Int. J. Chem. React. Eng., Env. Sci. Tech., Materials Chemistry and Physics, Mat. Sci. Eng., Macr. Mat. Eng., Chem. Eng. Trans J., J. Hazardous Materials, J. Chem. Eng. Data, J. Bio. Mat. Bioen., Scripta Materialia, J. Am. Ceram. Soc., J. Mat. Proc. Tech, Tissue Eng., Chem. Eng. Proc., Env. Tech., British J. App. Sci. Tech., Mat. Lett., Comp. Sci. Tech, J. Env. Qual., J. Zhejiang Univ., Algal R., Cer. Int., Prog. En. Comb. Sci., Mat. Char., Eur. Phys. J., Adv. Eng. Mat., Pow. Met., Bioresource Tech., J. Asian Cer. Soc., Indian J. Eng. Mat. Sc., Life Sciences, Materials Rec. Pat. Eng., Afr. J. Microb. Res., J. Astronautical Sciences, Korean J. Chem Eng., Brazilian J. Chem. Eng., Energies, J. Chem Eng. Croatia	

Professional Experiences – continued

Reviewer	Sept 1992 – present
Member of the Commission for the establishment of the Environmental Engineering Diploma Curriculum at the Università' di Cagliari, Italy	Sept. 1992 - May. 1993
Secretary of the Chemical Engineering Degree (Laurea) Council, Università' di Cagliari, Italy	Nov. 1992 - Sept. 1996
Visiting Scholar, Department of Chemical Engineering, University of Notre Dame, USA	Feb. 1993
Research Associate, Department of Chemical Engineering, University of Notre Dame, USA	Jul. 1993 - Nov. 1993
Member of the Scientific Council of the Interuniversity Research Centre on Disordered Systems and Fractals in Chemical Engineering	May 1993 - present
Chemical Engineering PhD Council	June 1993 – June 1999
Member of the Commission for the Modification of the Environmental Engineering Degree (Laurea) Curriculum at the Università' di Cagliari, Italy	Mar. 1995 - Sept. 1995
Responsible, European Network Materials Science I.C.P.	Jun. 1995 - Feb. 1997
Consulting for Masnata Chimici, Italy	1995
Consulting for NUOVA COMSAL S.p.A., Italy	1995
University of Cagliari Representative in the Interuniversity Consortium "Chemistry for the Environment"	Sept. 1994 – Dec. 2009
Coordinator, Sardinian Branch of Italian Association of Chemical Engineering	Nov. 1995 – Nov. 2015
Chairman, Interdepartmental Centre of Environmental Science and	

Professional Experiences – continued

Engineering (CINSA)	Jun. 1996 – Oct. 2004 Oct. 2010 – July 2017
Member of the Committee for the selection of Research Associates, Università di Cagliari, Italy	Jun. 1995, Apr. 1997
Consulting for Progemisa SpA, Italy	1996
Consulting for HYDROCONTROL, Italy	1996
Co-Chairman at one session of the IV Int. Conference on Environmental Issues and Waste Management in Energy and Mineral Production, SWEMP '96	July 1996
Director, Cagliari Branch of the Interuniversity Consortium "Chemistry for the Environment"	July 2001 – Dec. 2009
Member of the Committee of Chem. Eng. PhD Final Examination	Dec. 1996
University of Cagliari Representative in the Interuniversity Research Center of Metallurgy (CIRM)	May 1997 – present
Metallurgical Engineering PhD Council	June 1997 - Sept. 2006
Consulting for Crystal Research Corporation, USA	1997
Guest Editor for Chemical Engineering Communication	1998
Chemical Processes and Materials Area Leader at Center for Advanced Studies in Sardinia (CRS4), Italy	June 1998 – Jan. 2007
Consulting for Saeda Sarda Abrasivi ed Affini, Italy	Jan. 1999 – Jan. 2000
Member of the Committee for Chem. Eng. PhD Admission	January 1999
Reviewer for Senior Lecturship promotion at the University College of London	January 1999

Professional Experiences – continued

Member of the Founding Committee of International Combustion Synthesis Research Association	Feb. 1999
Research Consultant for CNR/TEMPE	Feb. 1999 – 2000
Chairman of the Session “Separation Technology” at the IV Italian Conference on Chemical and Process Engineering, Florence	May 1999
Member of the International Advisory Committee of the V Int. Symposium on SHS, Moscow	August 1999
Co-Chairman of the Session “Effect of Electric and Electromagnetic Field at the V Int. Symposium on SHS, Moscow	August 1999
Research associate (E. Medda) supervisor	Sept. 1999 – Feb. 2000
Supervisor of project by sponsored by Provincia di Cagliari, Assessorato Ambiente, Italy	Sept. 1999- June 2003
Supervisor of the project involving Istituto P. Calamandrei, Italy	Oct. 1999- June 2000
Coordinator of the Centro Studi sulle Reazioni Autopropaganti (CESRA)	November 1999 - present
Member of the International Scientific Council of the International Journal of SHS	January 2000 - present
Member of the International Advisory Committee of SHS-2001	February 2000
Founding Member of Cleaner Production Centre (CPC) Italia	April 2000
DOW Chemical Company Consultant Chemical Recycling of PET: hydrolysis and glycolysis processes	May 2000 – Sept. 2000
Member of the Committee for Research Associate (Assegnista) Admission	June 2000

Professional Experiences – continued

Member of the International Advisory Committee of the Fourth International Workshop on Materials Processing at High Gravity	June 2000
Member of the Board of Directors of Consorzio PROMEA as Consorzio INCA representative	June 2000 – June 2012
Coordinator of the International PhD program in Environmental Science and Engineering	July 2000 – Sept. 2010
Coordinator of the International Agreement to jointly award of the International PhD program in Environmental Science and Engineering	July 2000 – March 2015
Comune di Genova Consultant through the Consorzio INCA	Oct. 2000 – Oct. 2001
Member of the Committee for Research Associate (Assegnista) Admission	November 2000
Member of the Committee for Metall. Eng. PhD Admission (Cagliari)	December 2000
Member of the Board of Directors of Consorzio La Chimica per l'Ambiente (INCA)	Jan. 2001 – March 2009
Associate Professor Dipartimento di Ingegneria Chimica e Materiali, Università di Cagliari, Italy	Nov. 1992 - Feb. 2001
President of the Scientific Forum of of Cleaner Production Centre (CPC) Italia	April 2001 – present
Expert for the evaluation of projects submitted to the Italian Space Agency	April 2001 – present
Chairman of the Session “Separation” at The International Conference Icheap-5	May 2001
Chairman of the Session “Effect of gravity on materials synthesis and processing” at EUROMAT 2001	June 2001

Professional Experiences – continued

Founding Member of the Interdepartmental Centre Metals in Medicine	June 2001
Member of the National Committee for Associate Professor promotion	June 2001 – October 2001
MURST COFIN 2001 Referee	September 2001
President of the Admission Committee for PhD in Environmental Science and Engineering (Cagliari)	October 2001
Co-Chairman at the International Workshop on “Mechanochemical Processes for the Environment”	February 2002
Member of the International Advisory Committee of VII International Symposium on SHS	May 2002
Member of the Scientific Committee of The International Conference ICheaP-6	June 2002
Member of the Research Board of Advisors of the American Biographical Institute	July 2002
Member of the Scientific Board of the Summer School on Contaminated Sites	Sept. 2002
Member of the Board of Experts for Italian Law Decree 297/1999	August 2002 - present
Member of the Editor’s Office of the Book Conception of SHS development	August 2002
Co-Chairman at VII International Conference on Environmental Issues and Waste Management in Energy and Mineral Production, SWEMP ’02	Sept. 2002
Chairman at the Japan-Italy Joint Symposium on Nanostructured Materials for Structural Applications and Nanodevices	Nov. 2002
Member of the Council of Founders of SHS Association (World Academy of Ceramics)	Dec. 2002

Professional Experiences – continued

Reviewer for MIUR/COFIN/2003 projects	Apr. 2003
Chairman of the Session “Production and properties of materials” at The International Conference Icheap-6	May 2003
President of the Admission Committee for PhD in Environmental Science and Engineering (Cagliari)	May 2003
INTAS project Evaluator	July 2003
Member of the organizing committee of VI Convegno INCA 2003	Oct. 2003
Member of the Editorial Committee for Chemical Engineering for Foxwell&Davis Italy	Sept. 2003
Member of the Committee for Chem. Eng. PhD Evaluation (Bologna)	Oct. 2003
Member of the Scientific Committee, Convegno Ingegneria e Chimica per l’Ambiente	Nov. 2003
Co-Chairman of the Section of materials synthesis and related properties of Convegno GRICU 2004	Nov. 2003
Member of the International Panel of the 7 th World Congress of Chemical Engineering	Nov. 2003
President of the Admission Committee for PhD in Environmental Science and Engineering (Cagliari)	Jan. 2004
Member of the Committee for Metallurgical Engineering PhD Evaluation (Torino)	Feb. 2004
Scientific advisor for PRRIITT Regione Emilia-Romagna	March 2004
Chairman for the Session Materials Synthesis and Processing at ISCRE 18	May 2004
Member of the Scientific Committee of AIDIC-ICHEAP7	June 2004
Member of the University of Cagliari Committee for CIVR evaluation	June 2004

Professional Experiences – continued

Invitation to submit a research project on innovative technology for the treatment of wastes containing dioxins and/or furans by The Dow Chemical Company (USA)	Sept. 2004
Research project evaluator for INTAS	Oct. 2004
Vice-Chairman of the Interdepartmental Centre for environmental science and technology (CINSA)	Nov. 2004 – Sept. 2010
National expert for CIVR evaluation	Nov. 2004
Member of the LINCE Laboratory (INSTM)	Dec. 2004
Scientific Advisor for Special Session on SHS CIMTEC 2006	Dec. 2004
Scientific Advisor for Ministry of Production, Italy	Dec. 2004 - present
Invited talk at the V Int. Symp. on SPS, USA	Jan. 2005
Member of the Committee of Int. Env. Sci. Eng. PhD Final Examination (Cagliari)	Feb. 2005
Member of the Committee of Metallurgical Eng. PhD Final Examination (Torino)	Mar. 2005
Research project evaluator for US ARMY	Mar. 2005
CIVR Reviewer	May 2005
Member of the Program Committee of the International Conference “Non-Isothermal Phenomena and Processes”	May 2005
Member of the Scientific Committee of the COSMOLAB Consortium	June 2005 – Dec. 2009
President of the Scientific Committee of C.O.S.M.O. Spaceland	July 2005 – May 2006
Member of the Committee for Assistant Professor Admission	November 2005 – Feb. 2006
Member of the Committee for Associate	

Professional Experiences – continued

Professor Evaluation	November 2005 – May 2006
Member of the Programme Committee of The First Mediterranean Congress Chemical Engineering for Environment	December 2005 – Dec. 2006
Testimonial for Banco di Sardegna (reimbursement given to Cancer Research Ass.)	January 2006 – June 2007
Member of the Scientific Committee of VIII INCA Consortium Congress	March 2006
Member of the International Scientific Committee of ICheaP-8	June 2006
Member of the International Advisory Committee of SHS – 2007	June 2006
Chairman of the MCCEE Session “Remediation of Contaminated sites – Phys. Chem. Tech.”	September 2006
Scientific reviewer for Piedmont Region	Oct. 2006
Invitation to appoint candidates to the 2008 International Ceramic Prize	November 2006
President of the Admission Committee for PhD in Environmental Science and Engineering (Cagliari)	Dec. 2006 - Dec. 2010
Piedmont Region projects reviewer	February 2007
CEO of Innovative Materials Srl	Feb. 2007 – July 2015
Process Engineering and Combustion Area Leader at Center for Advanced Studies in Sardinia (CRS4), Italy	Feb. 2007 – Oct. 2010
Member of the advisory Committee 2 nd International Congress on Ceramics	March 2007
CNR-DET Cagliari Unit Responsible	March 2007 – March 2009
MAP project Reviewer	September 2007
MIUR project Reviewer	November 2007 - present

Professional Experiences – continued

Provincia di Cagliari (Italy) Consultant for Dioxins formation and fate	Sept. 2007 – Dec. 2007
Member of the scientific committee of SORISER	December 2007 - present
Thematic Area Coordinator GRICU Symposium	January 2008
European Science Foundation peer reviewer	April 2008 – present
Member of the international scientific committee for the International Conference ICheaP-9	July 2008
Regione Sardegna – Technical Committee Member Lg 7/2007	July 2008
Member of the Organizing Committee of SHS Session at CIMTEC-2010	October 2008
Estonia research projects evaluator	October 2008
PhD thesis evaluator for Aligarh Muslim University (India)	November 2008
Member of the breast surgery specialization school (University of Cagliari)	January 2009 - present
Member of the PhD final evaluation at Turin Polytechnic	January 2009
Member of the Editorial Board of the Open Tissue Engineering & Regenerative Medicine Journal	March 2009 - present
Innocentive solver	June 2009 - present
CEO of Dense Nanostructured Materials Srl	July 2009 – April 2015
Evaluator of scientific projects submitted by Companies to Campania Region, Italy	July 2009
SUN University (Italy) project reviewer	August 2009
Member of the Advisory Board of the 12 th Int Ceramics Congress, CIMTEC 2010	September 2009
European Commission ex-post evaluator of NMP (F6)	September 2009

Professional Experiences – continued

Georgia National Science Foundation reviewer	October 2009
Member of the national committee for full professor promotion (INGIND24)	Jan. 2010–Sept. 2010
Member of the Editorial Advisory Board of the Open Atmospheric Science Journal	Mar. 2010 – Ju. 2019
Member of the International Committee of ICheaP-11	May 2010
Referee of Research Projects for Padua University, Italy	June 2010
Member of the UNICA committee for Assegnista di Ricerca	June 2010
Evaluator of RIDITT projects for Italian Ministry of Economic Development	July 2010
Evaluator of REACH projects for Italian Ministry of Economic Development	July 2010
Expert invited by Samarco (Brasil)	August 2010
Member of the International Advisory Board of SHS 2011	Sept. 2010
Member of the University of Cagliari Board of Directors	Oct. 2010–June 2012
Coordinator of the PhD program in Biomedical Engineering	Oct. 2010- Mar. 2016
Project evaluator for Canada Foundation for Innovation	Jan 2011
Bioengineering Program Leader at Center for Advanced Studies in Sardinia (CRS4), Italy	Nov. 2010 – Feb.2013 Aug. 2013–July 2015
Member of the PhD defense committee in chemical engineering, Padua University, Italy	February 2011
Member of the PhD defense committee in chemical eng., Turin Polytechnic, Italy	February 2011
Member of the Board of Directors of Consorzio La Chimica per l'Ambiente (INCA)	Ju. 2011-Ap. 2014
Padua University (Italy) project reviewer	September 2011
Member of the Scientific Committee of “La Chimica	

Professional Experiences – continued

in Sardegna nell'anno della Chimica"	Sept. 2011- Oct. 2011
Member of the Editorial Board of ISRN Chemical Engineering	Nov. 2011 – Feb. 2014
Member of the International Advisory Board of Nonisothermal Phenomena and Processes Int. Conference	November 2011
President of the committee for COSMIC funding	Jan. 2012 – Oct. 2018
Reviewer of the International Scientific Committee of BOSICON	February 2012
Reviewer for the Romanian National Research Council	May 2012
Member of the IChEaP-11 International Scientific Committee	June 2012
Coordinator of the PhD program in Innovation Science and Technologies	June 2012 – August 2015
Member of the National Committee for Assistant Professor promotion at the University of Rome	July 2012
Member of the Int. Advisory Board of SHS 2013	August 2012
Reviewer for Progetto Bandiera "La Fabbrica del Futuro"	October 2012
Member of the Editorial Board of Advances in Environmental Research (AER) – An Int. Journal	Nov. 2012 – Dec. 2013
Member of the organizing Committee of CMSE2013	November 2012
Advisory Board Member of the 5 th Annual Congress of Regenerative Medicine & Stem Cell-2012	December 2012
Vice-Coordinator of the Regional Committee to promote the Sardinian Aerospace District	Dec. 2012 – Sept. 2013
Member of the Int. Advisory Board of the Special Session "SHS Ceramics" at CIMTEC 2014	January 2013
Organizing Committee Member of the Int. Conference Tissue Science-2013	Mach 2013 – Dec. 2013
Member of the Review and Technical Program Committee for CMSE 2013 (II Global Conference on Mat. Sci. Eng.)	May 2013

Professional Experiences – continued

Coordinator of the International Agreement to jointly award the International PhD in Innovation Science and Technology	July 2013 – Mar. 2016
Member of the International Advisory Committee for AEST 2014 “Int. Conf. on Adv. Envi. Sci. & Tech.”	August 2013 – Oct. 2013
Member of the Editorial Board of Journal of Biomaterials and Biomedical Engineering	August 2013 – present
Chairman of the Board of Directors of Distretto Aerospaziale Sardegna (DASS) A separate list of the main goals reached is available at the end of the document	October 2013 – present
European Editor-in-Chief of Advances in Environmental Research (AER) – An International Journal	Jan. 2014 – present
Member of the national committee for assistant professor confirmation (INGIND24)	Feb. 2014 – present
Member of the Editorial Board of International Scholarly Research Notices	March 2014 - present
Member of the Reviewers’ Board of Global Conf. on Polymer and Composite Materials (PCM 2014)	March 2014 – May 2014
Chairman Session at National Congress, Space Renaissance Italia	May 2014
Editorial Board Member Global Journal of Energy Technology Research Updates	May 2014 – present
Member of the committee for three-years-assistant-professor recruitment at the University of Cagliari (INGIND24)	May 2014 – July 2014
Member of the Reviewers’ Board of The Global Conference on Materials Science and Engineering (CMSE 2014)	June 2014
Member of the Reviewers’ Board of The 3rd International Conference on Biomedical Engineering and Biotechnology (ICBEB 2014)	June 2014
Member of the committee for the admission to Professional Chemical Engineers of Cagliari Province	June 2014
Member of the national committee for associate	

Professional Experiences – continued

professor confirmation (INGIND24 - Genova)	June 2014 – July 2014
Member of the national committee for full professor recruiting (INGIND24 - Cagliari)	June 2014 – July 2014
Member of the national committee for associate professor recruiting (INGIND27 - Cagliari)	June 2014 – July 2014
Member of the Editorial Board of Journal of Chemical Engineering Research Updates	July 2014 – present
Member of the International Committee of ICheaP-12	August 2014 – May 2015
Member of the national committee for associate professor recruiting (INGIND24 - Salerno)	August 2014 – Sept. 2014
Member of the Editorial Board of AIMS Bioengineering	August 2014 – present
Member of the Committee for PhD in Innovation Science and Technology admission (Cagliari)	September 2014
Member of the Advisory Board of SINTERCER PROPOSAL No. 316232 - VII FRAMEWORK PROG.	Oct. 2014 – Dec. 2016
Member of the Organizing Committee of the Conference Tissue – Science 2015	Oct. 2014 – July 2015
ICheaP-12 Papers' Reviewer	Oct. 2014 – Dec. 2014
Co-Editor-in-Chief of Journal of Chemical Engineering Research Updates (JCERU)	Oct. 2014 – present
Referee of Research Projects for Padua University, Italy	Oct. 2014
Member of the Editorial Board of Jacobs Journal of Drug Metabolism and Toxicology	Nov. 2014 – present
Member of the Editorial Board of Stem Cell and Translational Investigation	Nov. 2104 – present
PhD Student Assessor, Tshwane University of Technology (South Africa)	Nov. 2014 – Mar. 2015
Organizing Committee Member of Tissue Preservation and Biobanking-2015	Nov. 2014 – July 2015
Member of the national committee for associate	

Professional Experiences – continued

professor recruiting (INGIND25 - Cagliari)	December 2014
Expert invited by Shota Rustaveli National Science Foundation (Georgia) for scientific projects evaluation	March 2015
Member of the national committee for associate professor recruiting (INGIND24 - Cagliari)	April 2015 – June 2015
Member of the Organizing Committee of the Conference “LA NASCENTE INDUSTRIA DEL VOLO SPAZIALE CIVILE”	April 2015
Member of the Scientific Committee of the International Conference “Space, not war 2016”	April 2015
Expert for the Incomera project	April 2015 – Sept. 2018
Member of the Scientific Committee of Space Renaissance Italia	June 2015 – present
Chairman of the Department of Mechanical, Chemical and Materials Engineering	July 2015 – June 2021
Member of the national committee for associate professor recruiting (INGIND24 - Cagliari)	July – Sept. 2015
Referee of Research Projects for Padua University, Italy	Sept. - Oct. 2015
Member of the Groups of Expert of Evaluation of the Italian Agency for the Evaluation of Universities and Research Institutions (ANVUR)	Sept. 2015 – Feb. 2017
Organizing committee member for Regenerative Medicine-2016	Sept. 2015
Expert Peer Reviewer for Italian Scientific Evaluation (MIUR)	Sept. 2015 - present
Member of the national committee for assistant professor (B-type) recruiting (INGIND22 - Cagliari)	Nov. 2015 – Dec. 2015
Management Committee Member to COST Action CA15102 (CRM-Extreme)	Jan. 2016 – Mar. 2021
Member of the Scientific Committee of SOTACARBO, Italy	Feb. 2016 – Nov. 2018

Professional Experiences – continued

Member of Advisory Board of Third International Conference NPP-2016	Feb. 2016 – Nov. 2016
Responsible of ISRU/ISFR activities foreseen in the ERAS project proposed by the Italian Mars Society	Feb. 2016 - present
Reviewer for the Romanian National Plan for Research, Development and Innovation for the period 2015-2020	Apr. 2016 - present
Organizing Committee Member of the 8 th International Conference on Tissue Science and Regenerative Medicine-2017	Nov. 2016 – Sept- 2017
Reviewer for ICheaP13 International Scientific Committee	Dec. 2016 – May 2017
Coordinator of the Committee for Assegnista selection at the University of Cagliari	Dec. 2016 – Jan. 2017
Member of the Editorial Board of Nanomedicine and Nanotechnology (GBPC Group ePublishing House)	Jan. 2017 – present
Member of the Scientific Advisory Board of the World Congress of Regenerative Medicine & Stem Cell	Jan. 2017 – Dec. 2018
Member of International Advisory Board of the Focused Session CB-10 "SHS Ceramics" of the International Ceramics Congress at CIMTEC 2018	Feb. 2017 – Jun. 2018
Editor-in-Chief of Advanced in Materials Research	Mar. 2017 – Au. 2017
Member of the Editorial Board of the Journal Drug Designing & Development	Mar. 2017 – present
Member of the Editorial Board of Biosciences Biotechnology Research Asia	Mar. 2017 – present
Member of the national committee for assistant professor (B-type) recruiting (INGIND24 – Rome – La Sapienza)	Mar. 2017 – June 2017
Member of the National Organizing Committee of 25 th International Symposium on Chemical Reaction Engineering (ISCRE)	May 2017 – May 2018
Elected Advisor by the AIDIC Assembly	June 2017 - present
Member of the Editorial Board of the Journal	

Professional Experiences – continued

Technologies	June 2017 – present
Member of the Organizing and Scientific Committees of the International Workshop on SPS, Cagliari, Italy, 2018	July 2017 – May 2018
Member of the Organizing Committee of Meeting on Chemical and Biochemical Engineering, April 23-24, 2018 in Dubai, UAE	Aug. 2017 – April 2018
Member of the International Scientific Committee of IBIC 2018	Sept. 2017 – April 2018
Honorable organizing committee member for Tissue Science 2018, Frankfurt (Germany)	Oct. 2017 – April 2018
Member of the national committee for associate professor recruiting (INGIND26 - Cagliari)	Oct. 2017 – Nov. 2017
Member of the monitoring committee for space economy at the Italian Ministry of Economic Development	Oct. 2017 – present
Member of the national committee for assistant Member of the Organizing Committee of the 4 th International Conference on Chemical Engineering, September 17-18, 2018 in Vancouver, Canada	Nov. 2017 – Sept. 2018
Reviewer for the 25 th International Symposium on Chemical Reaction Engineering (ISCRE)	Nov. 2017 – July 2018
Appointed expert in the ICAMCyL (International Center and Advanced Materials and raw materials of Castilla y Leon - Spain) Foundation	April 2018 - present
Evaluator for National Agency for Engineers Certification	May 2018
Member of Space Renaissance (Italian Branch) Board of Directors	May 2018 – Oct. 2018
Projects' evaluator for Czech Science Foundation	June 2018 – July 2018
Member of the national committee for full professor recruiting (INGIND27 - Cagliari)	July 2018
Member of Space Renaissance International	

Professional Experiences – continued

Board of Advisors	July 2018 – present
University of Cagliari's Academic Senate Member	July 2018 – June 2021
Member of the National Civil Protection Committee for the forecasting and prevention of major risks	July 2018 – Sept. 2023
International Advisory Board Member of SHS 2019	Sept. 2018 – Sept. 2019
Member of the national committee for assistant professor (B-type) recruiting (INGIND22 - Cagliari)	Sept. 2018 – Oct. 2018
Editorial Advisory Board Member of Science and Engineering of Composite Materials	Dec. 2018 – present
Member of the International Advisory Board of the Focused Session "SHS Ceramics" at the 15th International Ceramics Congress CIMTEC 2020	Feb. 2019 – June 2020
Member of the review board of Journal of solar energy research updates	March. 2019 - present
Member of the Scientific Committee of the 3rd International Symposium on Hypersonic Flight, May 30-31, 2019	April – May 2019
External examiner for Vincenzo Infante's PhD thesis in Chemical and Process Engineering at the University of Strathclyde – Glasgow (UK)	May – June 2019
Member of the Scientific Committee of Digital Innovation Hub – Sardinia	May 2019 - present
Member of the national scientific qualification committee for associate professor (INGIND-24)	July 2019
Reviewer for South Africa's National Research Foundation	July – Aug. 2019
Reviewer for MIUR (Italy) – FARE projects	Aug. – Sept. 2019
Member of the Committee for Innovation Science and Technology PhD Admission (Cagliari)	Aug. – Sept. 2019
Project reviewer for Israel Science Foundation	Jan. – Feb. 2020
Organizing Committee Member for 5 th International Conference on Nanotechnology and Nanoscience-2020	Jan. – June 2020

Professional Experiences – continued

Scientific coordinator of the project Small Mission to MarS (SMS)	Feb. 2020 – present
Endorsement for an International Exchange program submitted to The Royal Society	February 2020
Scientific and technological research expert for the Italian Ministry of Defence	July 2020 – present
Sole Administrator of CRS4 A separate list of the main goals reached is available at the end of the document	July 2020 – present
Member of the Scientific Committee of The International Conference ICheaP-15	September 2020 – May 2021
Member of the national committee for assistant professor RTD-A admission (INGIND24 - Salento)	October 2020 – Nov. 2020
Member of the national committee for assistant professor RTD-A admission (INGIND24 - Cagliari)	October 2020 – Dec. 2020
Member of the national committee for assistant professor RTD-B admission (INGIND24 - Brescia)	June 2021 – July 2021
Member of the national committee for associate and full professor evaluation (09D2-INGIND24)	July 2021 – October 2023
Coordinator of the R&D Working Group within South Sardinia Confindustria	July 2021 – present
Sabbatical leave from University of Cagliari	Oct. 2021 – Sept. 2023
Member of the committee for PhD defence at the University of Extremadura, Spain	October 2021 – Nov. 2021
Director of II level Master of Security Awareness at the University of Cagliari, Italy	November 2021 – Dec. 2022
Director of II level Master of Aerospace Systems Engineering at the University of Cagliari, Italy	November 2021 – Dec. 2022
Member of the Regional Council for Research representing business organizations, Sardinia, Italy	June 2022 – present
Member of the National PhD Committee in Space Science and Technology, (Cagliari) Italy	July 2022 - present
Member of the Italian Scientist Association, Italy	Nov- 2022 – present

Professional Experiences – continued

Member of the national committee for assistant professor RTD-A admission (INGIND23 - Palermo)	January 2023
Member of the national committee for assistant professor RTD-A admission (INGIND24 - Cagliari)	Jan. 2023 – Feb. 2023
Member of the Science Advisory Board https://www.scienceboard.net/index.aspx?sec=abt	Jan. 2023 - present
Member of the national committee for assistant professor RTD-A admission (INGIND23 - Sassari)	Feb. 2023 – Mar. 2023
Member of the national committee for assistant professor RTD-B admission (INGIND24 - Cagliari)	March 2023
Member of the national committee for full professor recruitment (INGIND24 - Bologna)	June 2023 – July 2023
Member of the national committee for assistant professor RTD-B admission (INGIND24 - Palermo)	Aug.2023 – Sept. 2023
Member of the Committee for Innovation Science and Technology PhD Admission (Cagliari, Italy)	Aug. 2023 – Sept. 2023
Member of Galaxia (CDP Venture Capital) Scientific Advisory Board (Rome, Italy)	Jan. 2024 – present
Scientific Director, Novitas 4.0 Foundation (Cagliari, Italy)	March 2024 – present
Slovak Research and Development Agency Reviewer	May 2024 – present
Member of the Scientific Committee of The International Conference ICheaP-17	July 2024 – present
Member of Confindustria Aerospace Technical Group	Aug. 2024 – present
Member of the International Advisory Board of SHS 2024	Sept. 2024

Fellowships, Honors and Recognitions

Enichem Fellowship	Jul. 1986 - Jun. 1987
Ph. D. Fellowship	Jan. 1987 - Dec. 1989
C.N.R. Fellowship	1991
C.N.R. Prize	1991
C.N.R. Fellowship	1992
C.N.R. Prize	1992
C.N.R. Fellowship	1993
C.N.R. NATO Fellowship	1993
Outcome of the evaluation of INCA Consortium	Sept. 1998
C.N.R. NATO Fellowship	2000
Nominee for 500 Leaders of Science	Dec. 2001
Man of the Year (American Biographical Institute)	March 2002
Member of the Board of Advisors of the American Biographical Institute	April 2002
Invitation for “Who’s Who in Science and Engineering”	July 2002
Invitation for “Who’s Who in the World”	February 2003
The Contemporary Who’s Who	June 2003
Nomination for “The Contemporary Who’s Who”	October 2003
Outcome of the evaluation of INCA Consortium	Nov. 2003
Invitation for Who’s Who in the World”	February 2004
CALARITANA L’Università di Cagliari tra storia e domani di P. Fadda e G. Pisano (pp. 180-182)	April 2004
The Contemporary Who’s Who	April 2004
Man of the Year (American Biographical Institute)	June 2004

Fellowships, Honors and Recognitions - continued

SHS Dehalogenation Expert (http://www.cluin.org/download/remed/542r05006/final_pops_report_web.pdf)	Dec. 2004
Certification “Who’s Who in the World”	Jan. 2005
Nomination for the IBC’s Dictionary of International Biography	33 August 2005
Nomination as IBC’s International Professional of the Year 2005	September 2005
Nomination for IBC’s Leading Engineers of the World 2006	September 2005
Nomination for IBC’s 2000 Outstanding Intellectuals of the 21 st Century	October 2005
Nomination for “Who’s Who in the World”	October 2005
Nomination for “Who’s Who in Science and Engineering”	November 2005
Invitation for “IBC’s 21 st Century Award for Achievement	November 2005
Nomination as The Cambridge Blue Book Man of the Year	December 2005
Citations on R. Paracchini – Cari posterì andate al diavolo	February 2007
World Leader of Self-propagating High-temperature Synthesis (by World Academy of Ceramics, International Association of SHS, Russian Academy of Sciences, Scientific Council of Combustion and Explosion, Institute of Structural Macrokinetics and Material Science)	October 2007
Nomination for “Who’s Who in Science and Engineering”	August 2010
Nomination for “Scientific Award of Excellence for 2011”	July 2011
Nomination for “The American Order of Merit”	August 2011
Nomination for “The Great Minds of the 21 st Century”	August 2011
Nomination for “Man of the Year 2011”	September 2011
Nomination for “Scientific Award of Excellence for 2011”	October 2011
Nomination for “International Peace Prize”	October 2011
Nomination for “2000 Outstanding Intellectuals of the 21 st Century”	November 2011
Journal of the American Ceramic Society Reviewer Recognition	December 2011

Fellowships, Honors and Recognitions - continued

Invitation for Man of the Year 2012 (American Biographical Institute)	January 2012
Invitation for Deputy Director General of the International Biographical Centre for Europe	February 2012
Nomination as member of TOP 100 Engineers 2012	February 2012
Nomination to receive Gold Medal for Italy (American Biographical Institute)	March 2012
Recognition by ISECG (International Space Exploration and Coordination Group) of ISRU (In-Situ Resources Utilization) patented processes to obtain physical assets on the surface of Moon and Mars	April 2012
Nomination to receive the 2012 Award of Excellence (American Biographical Institute)	June 2012
Nomination for “Who’s Who in the World”	March 2013
Recognition of the idea “SulcisAlghe” submitted to the International Competition “Ideas for the sustainable Development of Sulcis (Sardinia, Italy)”	Sept. 2013
Nomination to be included in the publication 2000 Outstanding Intellectuals of the 21 st Century	December 2013
Nomination to receive the 2014 Leading Professionals of the World	February 2014
Nomination for “Who’s Who in the World”	April 2014
Nomination as member of TOP 100 Engineers 2014	April 2014
Nomination for “Man of the Year 2014”	May 2014
Nomination to receive the 2014 Cambridge Certificate for Outstanding Engineering Achievement	October 2014
Nomination for “Who’s Who in the World”	April 2015
Nomination for “Who’s Who in Science and Engineering”	April 2015
Nomination TOP 100 ENGINEERS	September 2015
Who’s Who in Science and Engineering	2016-2017

Fellowships, Honors and Recognitions - continued

Top Italian Scientist (Engineering) http://www.topitalianscientists.org/TIS_HTML/Top_Italian_Scientists_Engineering.htm	Nov. 2016 - present
Albert Nelson Marquis Lifetime Achievement Award Winner	April 2017
Nomination for “Who’s Who in the World”	July 2017
Nomination for 2018 Albert Nelson Marquis Lifetime Achievement Award	Dec. 2017
Albert Nelson Marquis Lifetime Achievement Award Winner	February 2018
Recognition from the University of California, Davis (USA) for seminal contributions to the field of Material Science	May 2018
Nomination for “Who’s Who in the World”	June 2018
Nomination for 2019 Lifetime Achievement Award	Nov. 2018
Acceptance “Who’s Who in the World” 2019	Dec. 2018
Nomination for 2019 Maquis Top Professional	Jan. 2019
Best paper of issue 15 of Biosciences Biotechnology Research Asia	Feb. 2019
Lifetime Achievement Award	March 2019
<i>Current Environmental Issue and Challenges</i> , G. Cao and R. Orrù (eds.), Springer ISBN 978-94-017-8776-5, with a total of 23244 chapter downloads was among the top 50% most downloaded eBooks in 2018	June 2019
Nomination for “Who’s Who in the World” 2019	June 2019
Appointed honorary member of the Italian Association of Aeronautics and Astronautics	September 2019
Nomination for “Who’s Who in the World” 2020	September 2019
Paper published in Journal of Materials Chemistry B, 8, awarded with journal cover page	January 2020
Nomination for “Who’s Who in the World”	June 2020
Lifetime acceptance for “Who’s Who in the World”	October 2020
Nomination for “Who’s Who in the World”	January 2021

Fellowships, Honors and Recognitions - continued

Navicella Sardegna 2021 Prize	September 2021
Nomination for “Who’s Who in America”	December 2021
Francesco Alziator 2022 Prize	December 2022
Innovation Government Award 2022 Prize	December 2022
American Chemical Society Peer Review Recognition	April 2023

Research projects: participation and/or coordination

(P = participant, C = coordinator)

C.N.R. Finalizzato, Italy (45 kEuro) (Liquid-phase catalytic reactors)	1988 - 1991 (P)
MURST 60%, Italy	1989 (P)
MURST 40%, Italy	1989 (P)
NURACHEM (ENICHEM), Italy (15 kEuro) (Oligomerization of propene)	1989 - 1991 (P)
MURST 40%, Italy	1990 (P)
MURST 60%, Italy	1990 (P)
Regione Sardegna, Ass. alla Programmazione, Italy (50 KEuro) (Synthesis of advanced materials)	1991 - 1993 (C)
MURST 60%, Italy	1991 (C)
MURST 60%, Italy	1992 (C)
MURST 60%, Italy	1993 (C)
PRAOIL (AGIP), Italy (15 kEuro) (Optimization of cumene production)	1991 - 1992 (P)
MURST 60%, Italy	1994 (C)
Masnata Chimici Spa, Italy (5 kEuro)	1995 (C)
MURST 60%, Italy	1995 (C)
MURST 40%, Italy	1996 (C)
MURST 60%, Italy	1996 (C)
PROGEMISA, Italy (10 KEuro) (Exploitation of Sardinian natural zeolites)	1996 - 1997 (C)
C.N.R. Strategico, Italy (40 kEuro) (Ion-exchange separation processes)	1995 - 1997 (C)
MURST 40%, Italy (5 kEuro)	1997 (C)
MURST 60%, Italy	1997 (C)

Research projects: participation and/or coordination - continued

C.N.R. Gruppo Rischì, Italy (45 kEuro) (Industrial wastes recycling through self-propagating reactions)	1997 - 1999 (C)
Comune di Dorgali (NU), Italy (10 kEuro)	1997 (C)
Centro Servizi per le Imprese, Italy	1997 - 2000 (C)
Centro Sviluppo Materiali, Italy	1997 - 2000 (C)
C.N.R. Gruppo Rischì, Italy (30 kEuro) (HF and BF ₃ monitoring in xylenes production plants)	1998 - 1999 (P)
Inca International - DOW CHEMICAL, USA (30 kEuro) (Kinetics of terephthalic acid production)	1998 - 1999 (C)
Agenzia Spaziale Italiana, Italy (600 kEuro) (SHS, gravity and space applications)	1998 - 2003 (C)
C.N.R. Tempe, Italy (CNR Scientific Advisor)	1998 - 2003 (C)
MURST 60%, Italy (10 kEuro)	1998 (C)
European Space Agency, European Community (34 kEuro) (Coordination of SHS European Topical Team)	1998 - 2005 (C)
INTAS, European Community (60 kEuro) (Synthesis of advanced composites)	1998 - 2000 (C)
Regione Sardegna, Assessorato Ambiente, Italy (70 kEuro) (Advanced technologies for industrial waste minimization)	1998 - 1999 (C)
BRITE - DESCO, European Community (35 kEuro) (Synthesis of advanced powders for plasma spraying)	1998 - 2000 (P)
Consorzio 21, Italy (80 kEuro) (Field assisted combustion synthesis of advanced materials)	1999 - 2001 (C)
Consorzio 21, Italy (70 kEuro) (Sardinian natural adsorbents for environmental applications)	1999 - 2001 (C)
C.N.R. Tempe – CNR IENI, Italy (Establishment of a CNR branch in Sardinia)	1999 – 2001 (C)
MURST 60%, Italy (10 kEuro)	1999 (C)

Research projects: participation and/or coordination - continued

PON 488 (P1, P2, P3)/INCA, Italy (160 kEuro) (Adsorption and soil remediation)	1999 – 2003 (P)
CINECA-INSTM, Italy (Modeling of the Field Assisted Combustion Synthesis Technique)	2000 – 2001 (P)
Università di Cagliari, Italy (2500 Euro) (Young Researchers: Roberto Orru')	2000 – 2002 (P)
Università di Cagliari, Italy (2500 Euro) (Young Researchers: Alberto Cincotti)	2000 – 2002 (P)
Progemisa SpA, Italy (26 kEuro) (Sardinian Natural Zeolites for Environmental Applications)	2000 – 2001 (C)
Università di Cagliari, Italy (5000 Euro) (Young Researchers: Mariella Sannia)	2000 – 2002 (C)
MURST National Projects, Italy (87 k Euro) (Reactions and Reactor Engineering of Combustion Synthesis Processes)	2001 – 2002 (P)
C.N.R. Gruppo Rischi, Italy (80 kEuro) (Industrial wastes recycling and inertization through self-propagating reactions)	2001 - 2004 (C)
Consorzio Promea, Italy (35 kEuro) (Applications of Self-propagating Reactions for the Synthesis of Advanced Materials)	2001 – 2003 (P)
ACNA Cengio SISIFO project, Italy (96 kEuro) (Advanced soil remediation techniques)	2001 – 2004 (P)
Inca International - DOW CHEMICAL, USA (20 kEuro) (Kinetics of terephthalic acid production)	2001 - 2004 (C)
Provincia di Cagliari, Italy (103 kEuro) (Environmental Rehabilitation of Irvi and Piscinas Rivers)	2001 – 2003 (C)
Inca International - DOW CHEMICAL, USA (20 kEuro) (New solvents for alkyl-aromatics oxidation)	2002 - 2004 (C)
MIUR PON Project, Italy (2300 kEuro) (Advanced soil remediation techniques)	2002 – 2007 (C)
MIUR PON Equipment Project, Italy (300 kEuro) (Mobile laboratory for environmental investigations)	2002 – 2005 (C)

Research projects: participation and/or coordination - continued

MIUR PON Education Project SITICON, Italy (150 kEuro) (Soil remediation techniques)	2002 – 2005 (C)
CIPE 488 Promea, Italy (600 kEuro) (Synthesis of Advanced Materials by Mechanochemical and Combustion Reactions)	2002 – 2004 (C)
MIUR/CRS4 Modeling Project, Italy (100 kEuro) (Modeling of complex reacting systems)	2002 - 2004 (C)
MIUR/Promea, Italy (75 kEuro) (Combustion Synthesis of Advanced Materials)	2002 - 2004 (P)
MIUR COFIN 2002, Italy (203 kEuro) (Synthesis of composite micro- and nano-materials)	2002-2004 (C)
Regione Autonoma della Sardegna, Italy (5 kEuro) (Self-propagating high-temperature reactions)	2003 (C)
FIRB, Italy (200 kEuro) (Synthesis of nanomaterials)	2003-2006 (P)
PRISMA/INSTM, Italy (125 kEuro) (Synthesis of dense materials with nanometric structure)	2004-2005 (C)
Regione Autonoma della Sardegna, Italy (6 kEuro) (Self-propagating high-temperature reactions)	2004-2006 (C)
NAMAMET, VI Program Framework, EU (190 kEuro) (Synthesis of dense materials by SPS)	2004-2007 (P)
CyberSar, 297 MIUR, Italy (12000 kEuro) (High speed computer platform in Sardinia with scientific applications)	2006-2009 (P)
GRIDA3, 297 MIUR, Italy (300 kEuro) (Site remediation technology on grid)	2006-2010 (P)
Ecomat Srl, Italy (130 kEuro) (Chemicals from wine by-products)	2006-2009 (C)
Corem Srl, Italy (130 kEuro) (Synthesis of dense materials by SPS)	2006-2009 (C)
MIUR, Cofin 2006, Italy (95 kEuro) (Tissue engineering)	2007-2009 (C)

Research projects: participation and/or coordination - continued

MIUR, Public-Private Labs (348 kEuro) (Drug efficiency evaluation)	2007-2010 (P)
ARIA Srl, Italy (130 kEuro) (Tissue Engineering)	2007-2009 (P)
MIUR, PON Orientamento, CHISS (291 kEuro) (Green chemistry)	2007-2009 (P)
RAS, CARDIOSTAM (93 kEuro) (Tissue engineering)	2007-2009 (P)
FIRB, Italy (135 kEuro) (SHS powders production)	2007-2010 (P)
Banco di Sardegna Foundation, Italy (15 kEuro) (Tissue engineering)	2007-2009 (C)
Ministry of Foreign Affairs (10 kEuro) (UHTC)	2008-2010 (C)
Sardegna Ricerche (50 kEuro) (UHTC)	2008 (P)
COSMIC, ASI, Italy (471 kEuro) (ISRU and ISFR technologies for human space exploration)	2009-2013 (C)
MIUR Lg 297 (680 kEuro) (Dense Nanostructured Materials)	2010-2015 (C)
Banco di Sardegna Foundation, Italy (10 kEuro) (Tissue engineering)	2010-2011 (C)
PIA Regione Sardegna, Italy (500 kEuro) (Synthesis/densification of innovative materials via SPS)	2010-2013 (C)
PIA Regione Sardegna, Italy (500 kEuro) (Tissue engineering and regenerative medicine)	2010-2013 (C)
Sardinia Research, Italy (262 kEuro) (Decellularization/Cellularization of organs)	2010-2011 (P)
MIUR (International Cooperation), Italy (132 kEuro) (Exchange program with Russia within International PhD in Environmental Science and Engineering)	2010-2012 (C)
ESA/BIC Lazio, European Community and Italy (50 kEuro) (UHTC for non-space applications)	2011 - 2014 (C)

Research projects: participation and/or coordination - continued

Eurostar, European Community (264 kEuro) (Novel SPS technology FAST ² – SEPROFAST)	2011 – 2014 (P)
Sardinian Regional Government, Italy (160 kEuro) (Development of HAp composites)	2012 – 2015 (P)
Banco di Sardegna Foundation, Italy (10 kEuro) (New model for acute toxicity tests with hMSCs)	2013 - 2016 (C)
MIUR – FIRB, Italy (182 kEuro) (Innovative materials for solar thermodynamic technology)	2013 – 2017 (P)
Sardinian Regional Government, Italy (299 kEuro) (Use of hMSC for toxicity tests of nanopowders)	2013 – 2016 (C)
INNOVARE project BIOPILLOT, Italy (217 kEuro) (CO ₂ sequestration and bio-oil production through microalgae)	2014 – 2015 (C)
Avio SpA, Italy (67 kEuro) (Development of UHTC materials for applications related to the VEGA launcher)	2015 – 2016 (C)
Fondazione di Sardegna - Regional Government, Italy (123 kEuro) (Fabrication, characterization and modelling of NANoporous METal FOAMS - NAMEFOAMS)	2017 - 2020 (C)
Matrica SpA, Italy (20 kEuro) (Crystallization kinetics of azelaic acid)	2016 - 2018 (C)
Avio SpA, Italy (80 kEuro) (Development of novel C/C processing and modeling of current C/C manufacturing)	2017 – 2019 (C)
Ente di Governo dell'Ambito della Sardegna, Italy (15 kEuro) (Performance evaluation of five municipal drinking water plants)	2017 – 2018 (C)
Sardegna Ricerche – Cluster Top Down, Italy (374 kEuro) (Sardinian microalgae cultivation for advanced applications - COMISAR)	2017 – 2020 (C)
Sardegna Ricerche – Aerospace Announcement, Italy (700 kEuro) (Development of a novel testing system for ultra high temperature materials for space propulsion - Ithermal)	2018 – 2022 (C)
Sardianian Region, Italy (1600 kEuro) Sardinia UAV test range	2018 – present (C)
MIUR – National Specialization Strategy, Italy (4000 kEuro)	2019 – 2022 (C)

Research projects: participation and/or coordination - continued

(Research and Testing of Materials, Diagnostic Systems and Environmental Controls for Evolutionary Space Transport Vehicles - Generation E)

Lg 7 - Regional Government, Italy (110 kEuro) 2019 - 2021 (P)
(A new family of ReinforCed ultra HIgh-temperature MEtal DiboridES for advanced applications - ARCHIMEDES)

Avio SpA, Italy (100 kEuro) 2019 – 2020 (C)
(Carbon/carbon composites by SPS)

Fluorsid SpA, Italy (20 kEuro) 2019 – 2020 (C)
(Fluoride adsorption from wastewaters)

Avio SpA, Italy (150 kEuro) 2020 – present (C)
(Materials testing within an LRE plume)

Fondazione di Sardegna, Italy (50 kEuro) 2021 – present (P)
Advanced design of THERmodinamically-stable Nanocrystalline Alloys (ATHENA)

MUR, Italy (4000 kEuro) 2021 – present (C)
Space Manufacturing in Situ

Avio SpA, Italy (15 kEuro) 2021 – 2022 (C)
(Modeling of the C/C manufacturing process)

MUR, Italy (7500 kEuro) 2022 - present (C)
Ecosystem of Innovation for Next Generation Sardinia – Spoke Aerospace

Seminars, Symposia and Conferences Organization

Workshop on Advanced Chemical Technology	June 1995
Seminar by Prof. A. M. Merzhanov, Russian Academy of Sciences	April 1996
First Italian Workshop on Combustion Synthesis of Materials	July 1997
Seminar by Prof. Zuhair A. Munir, University of California, Davis, USA	Sep. 1997
V Seminar on Catalysis	June 1998
Seminar by Prof. Arvind Varma, University of Notre Dame, Notre Dame, USA	July 1998
Working Party of the European Federation of Chemical Engineering on Distillation, Absorption and Extraction	Oct. 1998
Seminar by Prof. Vladimir Hlavacek, University of SUNY/BUFFALO, Buffalo	June 1999
Seminar by Prof. Pietro Tundo, University of Venezia	Jan. 2000
Workshop AIDIC SARDEGNA “Costruire uno sviluppo sostenibile”	Mar. 2001
Seminar by Prof. Danilo De Rossi, University of Pisa	Nov. 2001
Seminar by Prof. Mostafa Maalmi, ENIM, Morocco	Oct. 2002
Seminar by Prof. Gerardo Catapano, University of Calabria	Oct. 2002
Seminar by Prof. Sergey G. Zlotin, Russian Academy of Sciences	Nov. 2002
Seminar by Dr Alberto Mariani, University of Sassari,	Jan. 2003
Seminar by Prof. Luigi Monsù Scolaro, University of Messina	Jan. 2003
Seminar by Dr. Sergio Daolio, CNR-IENI	May 2003
Seminar by Prof. Maurizio Petruccioli, University Tuscia	July 2004
Seminar by Prof. Franco Baldi, University of Venice	Oct. 2004
VIII International Symposium on SHS	June 2005
Seminar by Ing. Carlo Viberti (C.O.S.M.O. Spaceland)	October 2005

Seminars, Symposia and Conferences Organization – continued

Seminar by prof. Georgia Valaoras, LIFE projects evaluator, Greece	January 2006
Seminar by prof. Ana Isabel Miranda, Aveiro University, Portugal	January 2006
Seminar by Ing. Carlo Viberti, C.O.S.M.O. Spaceland	February 2006
Seminar by Dr. Ramanjan Kothandaraman, Indian Institute of Science, India	July 2006
Seminar by prof. Mostafa Maalmi, ENIM, Morocco	January 2007
Seminar by prof. A. Boronin, Pushchino University, Russia	January 2007
Seminar by prof. Mostafa Maalmi, ENIM, Morocco	January 2008
Seminar by prof. Jan Kaspar, Trieste University, Italy	January 2008
Seminar by Ing. Carlo Viberti, C.O.S.M.O. Spaceland	March 2008
Seminar by Prof. Sara Mantero, Milan Politecnico	January 2008
Seminar by prof. Ana Isabel Miranda, Aveiro University, Portugal	Jan, Sep. 2008
Seminar by prof. F. M. Cardoso Pedrosa, Aveiro University, Portugal	Jan, Sep. 2008
Seminar by prof. Paolo Bevilacqua, Trieste University, Italy	Jan., Sep. 2008
Seminar by prof. Neal Hickey, Trieste University, Italy	Sept. 2008
Seminar by prof. A. Boronin, Pushchino University, Russia	Jan., Sep. 2008
Seminar by prof. G. Valaoras, Astrale GEIGE, Greece	Jan., Sep. 2008
National PhD School in Chemical Engineering	May 2009
Seminar by prof. Mostafa Maalmi, ENIM, Morocco	Sept. 2009
Seminar by prof. F. M. Cardoso Pedrosa, Aveiro University, Portugal	Sept. 2009
Seminar by Dr. Alexandra Monteiro, Aveiro University, Portugal	Sept. 2009
Seminar by prof. Paolo Bevilacqua, Trieste University, Italy	Sept. 2009

Seminars, Symposia and Conferences Organization – continued

Seminar by prof. A. Boronin, Pushchino University, Russia	Sept. 2009
Seminar by prof. G. Valaoras, Astrale GEIGE, Greece	Sept. 2009
International PhD School in Environmental Science and Engineering	Sept. 2009
Seminar by prof. J. M. Valverde Millan, Sevilla University, Spain	July 2010
Seminar by prof. Mostafa Maalmi, ENIM, Morocco	Sept. 2010
Seminar by prof. F. M. Cardoso Pedrosa, Aveiro University, Portugal	Sept. 2010
Seminar by Dr. Alexandra Monteiro, Aveiro University, Portugal	Sept. 2010
Seminar by prof. Paolo Bevilacqua, Trieste University, Italy	Sept. 2010
Seminar by prof. A. Boronin, Pushchino University, Russia	Sept. 2010
Seminar by prof. G. Valaoras, Astrale GEIGE, Greece	Sept. 2010
International PhD School in Environmental Science and Engineering	Sept. 2010
Seminar by Dr. Marco Deriu, Politecnico di Torino	Mar. 2011
International PhD School in Environmental Science and Engineering	Sept. 2011
Seminar by prof. F. M. Cardoso Pedrosa, Aveiro University, Portugal	Sept. 2011
Seminar by prof. Paolo Bevilacqua, Trieste University, Italy	Sept.. 2011
Seminar by prof. A. Boronin, Pushchino University, Russia	Sept. 2011
Seminar by prof. G. Valaoras, Astrale GEIGE, Greece	Sept. 2011
Seminar by prof. Ana Isabel Miranda, Aveiro University, Portugal	Sept 2011
Seminar by prof. A. Leontyevsky, Pushchino University, Russia	Sept. 2011
Seminar by prof. M. Vaynsteyn, Pushchino University, Russia	Sept. 2011

Seminars, Symposia and Conferences Organization – continued

Seminar by prof. M. Schintu, Cagliari University, Italy	Sept. 2011
GRICU PhD National School 2011-12-30	October 2011
Italian-Russian Workshop	April 2012
Seminar by Dr Angelo Atzei, Cagliari University, Italy	June 2012
International PhD School in Environmental Science and Engineering	Sept. 2012
4 th International Workshop on Spark Plasma Sintering	May 2018
Seminar by Prefect Carlo Mosca, Sardinia AeroSpace District, Italy	October 2020
Seminar by General Carlo Magrassi, Sardinia AeroSpace District, Italy	October 2020
Seminar by Magistrate Stefano Dambruoso, Sardinia AeroSpace District, Italy	June 2021
30 th CRS4 Anniversary, Italy	Sept. 2021
Seminar by Professor Paolo Savona, Sardinia AeroSpace District, Italy	October 2021
Workshop “Space propulsion – Future scenarios for the access to space”, Sardinia AeroSpace District, Italy	October 2021
Seminar by General Roberto Riccardi, Sardinia AeroSpace District, Italy	Nov. 2021
Presentation of the Italian Aerospace Agency Virtual District, Sardinia AeroSpace District, Italy	Sept. 2022

Dissertations Directed (3 years degree – LB; 2 years – LM; 5 years - L)

a. Completed

- 1) Massimo Pisu (1990 L - M. Morbidelli co-advisor):
Design of Advanced Controllers for a CSTR operating at Unstable Stationary Steady States.
- 2) Roberto Orru' (1991 L - M. Morbidelli co-advisor):
Experimental Analysis and Modeling of Amino Acids Uptake by Cation Exchange Resins.
- 3) Guido Grosso (1992 L - M. Morbidelli co-advisor):
Adsorption of Amino Acids by Cation Exchange Resins.
- 4) Stefano Melis (1992 L - M. Morbidelli co-advisor):
Residence Time Distribution for a Cation Exchange Packed Bed.
- 5) Lucia Caddeo (1993 L - M. Morbidelli and M. Pisu co-advisors):
Influence of p-Xylene and p-Tolualdeyde Initial Concentration on the p-Xylene Liquid Phase Oxidation.
(This thesis was recipient of the ENICHEM prize 1993)
- 6) Sonia Sulis (1994 L - M. Pisu co-advisors):
Liquid Phase Oxidation of p-Xylene to Terephtalic Acid.
- 7) Franco Laconi (1994 L - S. Melis co-advisors):
Experimental Analysis and Modeling of Amino Acid Sorption by Cation Exchange Resin.
- 8) Salvatore Franzone (1994 L - G. Barrocu and L. Muscas co-advisors):
Transport and Adsorption of Heavy Metals in Porous Media.
- 9) Alberto Cincotti and Roberto Garau (1994 L - M. Pisu co-advisor):

Dissertations Directed - continued

Experimental Analysis and Modeling of Liquid Phase Oxidation of p-Xylene to Terephthalic Acid.

10) Pietro Berretta (1995 - M):
Simulation of the Extraction Section of the Mitsubishi Xylene Separation Process.

11) Davide Carta (1996 M - P. Virdis, R. Orru' and B. Simoncini co-advisor):
Self-Propagating High-Temperature Synthesis of Advanced Materials.

12) Maria Vittoria Simeone (1996 M - R. Orru' and B. Simoncini co-advisors):
Self-Propagating Reactions for Industrial Wastes Recycling.

13) Deborah Manca (1996 M - R. Orru' co-advisor):
Adsorption Equilibria on Sardinian Natural Zeolites.

14) Carlo Broi (1996 M - A. Cincotti co-advisor):
On the Liquid Phase Oxidation of p-Xylene to Terephthalic Acid.

15) Marcello Murru (1996 M - B. Marongiu and A. Cincotti co-advisors):
Liquid-Liquid Equilibria involving Hydrocarbons and Formil-Morpholine

16) Bruno Cau (1998 M - R. Orru', M. Sannia, A. Muntoni and M. Monagneddu co-advisors):
Self-propagating reactions for the treatment of hydrometallurgical wastes
(This thesis was recipient of the AIM prize 1998)

17) Alessio Marcus (1998 M - R. Orru', M. Sannia, A. Muntoni and M. Monagneddu co-advisors):
Self-propagating reactions for the treatment of hydrometallurgical wastes

18) Andrea Floris (1998 M - J. MacInnes co-advisor):
Temperature measurements in laminar flames and modeling studies

19) Cesare Dellacà (1998 M – R. Orrù, P. Serra and R. Lonis co-advisors) Utilization of Sardinian Natural Zeolites for Environmental Applications.

20) Nicola Lai (1998 M - A. Cincotti co-advisor):
Simulation of the Ammono-oxidation Reactor

21) Gianluca Secci (1998 M - P. Papet co-advisor):
Chemical microsensors for heavy metal detection in solution

Dissertations Directed - continued

- 22) Alessandro Concas (1999 L – R. Orru' and M. Sannia co-advisors):
Environmental applications of Self-propagating reactions
- 23) Maurizio Ligas (2000 - L):
Effect of catalyst concentration and solvent medium
on liquid-phase oxidation of p-xylene oxidation
- 24) Antonio Mario Locci (2000 - L):
Field-assisted combustion synthesis: experimental and modeling
- 25) Stefano Perra (2000 - L):
Adsorption processes involving natural materials
- 26) Anna Rita Mameli (2000 - L):
Adsorption Equilibria on Sardinian Natural Zeolites.
- 27) Carlo Patteri (2001 - L):
Advanced soil remediation techniques
- 28) Aristeo Marras (June 2001 - LB)
Advanced soil remediation techniques
- 29) Claudia Pizzalis (June 2001 - LB)
Adsorption processes involving Sardinian Natural Zeolites
- 30) Francesca Sini (December 2001 - LB)
Characterization and Exploitation of Sardinian Natural Zeolites
- 31) Andrea Atzori (Apr. 2002 - LB):
Optimization of waelz furnace through simulation tools
- 32) Elisabetta Manis (July 2002 - LB):
Natural zeolites characterization for environmental applications
- 33) Valeria Piras (July 2002 - LB)
Combustion synthesis of advanced materials
- 34) Omar Lardieri (Dec. 2002 - LB)
Natural zeolites characterization for environmental applications
- 35) Claudio Cannas (Feb. 2003 - LB)
Natural zeolites characterization for environmental applications
- 36) Caterina Frau (Apr. 2003 - LB)
Gas-liquid Reactions and Reactors
- 37) Simone Saiu (May 2003 - LB)
Self-propagating reactions for environmental protection

Dissertations Directed – continued

- 38) Stefano Salis (June 2003 - LB)
Mechanochemical degradation of chloro-organic compounds
- 39) Sara Todde (July 2004 - LB)
Synthesis of advanced materials by SPS
- 40) Gloria Arangino (July 2004 - LB)
Synthesis of advanced materials by SPS
- 41) Gianni Tilocca (Sept. 2004 - LB)
Synthesis of advanced materials by SPS
- 42) Sarah Fadda (April 2005 - LM)
Synthesis of advanced materials by SHS/BM/SPS
- 43) Fabiana Carta (April 2006 - LM)
Synthesis of advanced materials by SHS/BM/SPS
- 44) Sarah Todde (December 2007 - LM)
Synthesis of advanced materials by SHS
- 45) Gianluca Corrias (April 2008 - LM)
Inertization of heavy metals contaminated soils
- 46) Valeria Bullitta (April 2013 - LB)
Dialysis at home
- 47) Roberta Piras (April 2013 - LB)
Simulation of cell processes
- 48) Michela Murgianu (July 2013 - LB)
Reactors for regenerative medicine
- 49) Silvia Cabras (July 2013 - LB)
Principles of regenerative medicine
- 50) Federico Desotgiu (July 2013 - LB)
Materials for regenerative medicine
- 51) Nicola Benizzi (April 2013 - LB)
Organization of dialysis in hospitals
- 52) Laura Delogu (July 2014 - LB)
Analysis of the main techniques for articular prosthesis fixation
- 53) Roberto Piu (October 2014 - LM)
Experimental and modelling of microalgae processes

Dissertations Directed – continued

- 54) Fabrizio Dessi (October 2014 - LB)
Analysis of aortic valves technology
- 55) Gabriele Traversari (October 2014 - LB)
Bio-artificial systems for liver failure
- 56) Federica Serra (December 2014 - LB)
Analysis of the oxygenators' technology
- 57) Federica Di Prima (April 2015 - LB)
Analysis of the artificial pancreas
- 58) Giammarco Aresu (October 2016 - LB)
Effect of microgravity on organisms and cells
- 59) Davide Ambu (January 2017 - LM)
Modeling of chemical vapor deposition processes
- 60) Nicolò Perra (September 2019 – LB)
Biomedical applications of bioglasses and hydroxyapatite
- 61) Chiara Nurchis (November 2020 – LB)
Processing plant for Martian regolith
- 62) Giammarco Aresu (February 2021 – LM)
Preparation of co-amorphous formulations of an active pharmaceutical component
- 63) Marta Mascia (February 2021 – LB)
Astronauts' habitat on Mars
- 64) Marco Enna (September 2021 – LM)
Studio della crescita del cianobatterio *Synechococcus nidulans* sp. in condizioni marziane simulate per applicazioni ISRU
- 65) Susanna Zucchelli (September 2021 – LM)
Studio della crescita del cianobatterio *Chroococcidiopsis thermalis* CCALA 050 in condizioni marziane simulate per applicazioni ISRU nello spazio profondo
- 66) Giuseppe Gargano (March 2021 – LM)
Analisi modellistica e sperimentale del processo di crescita di "Nannochloropsis gaditana" in un fotobioreattore di tipo «Thin-Layer»
- 67) Niccolò Garau (February 2022 – LB)
Oxygen and methane production on Mars

Dissertations Directed – continued

b. In progress

68) Nicola Lai (January 2021 – LM)

69) Eleonora Brughitta (April 2022 – LM)

Ph.D. Dissertations Directed or Co-directed

a. Completed

- 1) Massimo Pisu (1991/1994 - M. Morbidelli co-advisor):
Gas-Liquid Reactors: the case of p-Xylene Liquid Phase Oxidation.
Current position: Senior Researcher at CRS4, Italy.
- 2) Laura Muscas (1991/1994 - G. Barrocu co-advisor):
On the Adsorption and Transport of Lead in Porous Media: Modeling and Experiments.
Current position: Senior Researcher at CRS4, Italy.
- 3) Andrea Viridis (1992/1996 - A. Viola co-advisor):
Use of Ozone in drinking and wastewater treatments plants.
Current position: Staff at Ente Acque della Sardegna, Italy
- 4) Stefano Melis (1993/1996 - M. Morbidelli co-advisor):
Adsorption Equilibria and Separation Processes by Cation Exchange Resins.
Current position: Staff at Albemarle Catalyst Company BV, The Netherlands
- 5) Roberto Orru' (1994/1997 - P. Viridis co-advisor):
Self-Propagating High-Temperature Synthesis of Ceramic Coatings.
Current position: Full Professor of Chemical Engineering at the University of Cagliari, Italy.
- 6) Maria Laura Pilia (1994/1997 - A. Viola co-advisor):
Modeling Systems involving Combustion Phenomena.
Current position: Process Control Automation Systems Manager SARLUX Srl, Italy.
- 7) Barbara Simoncini (1995/1998 - R. Orru' co-advisor):
Self-Propagating High-Temperature Synthesis Applications.
- 8) Alberto Cincotti (1996/1999):
Experimental Analysis and Modeling of Multiphase Reacting Systems.
Current position: Associate Professor of Chemical Engineering at the University of Cagliari, Italy.
- 9) Mariella Sannia (1997/2000):
Self-Propagating High-Temperature Synthesis of Advanced Materials.
- 10) Nicola Lai (1999/2002):
Multiphase Systems: Experimental Analysis and Modeling.
Current position: Associate Professor of Chemical Engineering at the University of Cagliari, Italy
- 11) Alessandro Concas (2000/2003):
Advanced technologies for industrial waste minimization and recycling

Ph.D. Dissertations Directed or Co-directed

Current position: Associate Professor of Chemical Engineering at the University of Cagliari, Italy.

12) Roberta Licheri (2001/2003):

Self-Propagating High-Temperature Synthesis: applications

Current position: Associate Professor of Materials Science and Technology at the University of Cagliari, Italy.

13) Antonio Mario Locci (2001/2003):

Self-Propagating High-Temperature Synthesis: fundamentals and applications

Current position: Associate Professor of Chemical Engineering at the University of Cagliari, Italy

14) Anna Mamei (2001/2003):

Exploitation of Sardinian Zeolites for Environmental Applications

Current position: Staff at ECOTEC SpA, Italy

15) Selena Montinaro (2004/2008)

Contaminated soils remediation by ball milling

Current position: Staff at Innovative Materials Srl, Italy

16) Sarah Fadda (2005/2009)

Population balance applications

Current position: Post doc at Imperial College, United Kingdom

17) Clara Musa (2005/2009)

Sustainable processes for materials production

18) Sara Todde (2007/2011)

SPS theory and applications

19) Antonio Lutzu (2007/2012)

Carbon dioxide sequestration

Current position: Lab Manager at Teregroup Srl (Italy)

20) Gianluca Corrias (2008/2012)

Development of ISRU and ISFR processes for space exploration

21) Michela Scanu (2008/2012)

Development of new tests in toxicology

22) Alberto Steriti (2010-2014)

Production of bio-oil from microalgae

23) Luisa Mancuso (2010-2014)

Organs decellularization/cellularization

Ph.D. Dissertations Directed or Co-directed

24) Alessio Cuccu (2011-2014)

Sintering of bio-glasses

27) Cristina Costelli (2011-2014)

Genetic characterization of microalgae

28) Luca Desogus (2014-2016)

Biological characterization of bio-glasses

29) Santina Soru (2016-2018)

Cultivation of microalgae for CO₂ sequestration and bio-oil production

Current position: Post doc at University of Cagliari (Italy)

30) Marina Luginina (2016-2020)

Biomaterials

31) Giovanna Tallarita (2017 – 2021)

Synthesis and densification of novel UHTC materials

32) Blessing Ezealigo (2017 – 2021)

Synthesis and densification of novel materials

Current position: Research Associate at University of Nigeria (Nigeria)

33) Giacomo Fais (2018 – 2022)

Characterization of microalgae for advanced applications.

34) Damiano Angioni (2019 – 2023)

Biomaterials

35) Simone Barbarossa (2019 – 2023)

Synthesis and densification of high entropy diborides

36) Cristina Manis (2019 – 2023)

Applications of Bone Marrow Human Mesenchymal Cells

37) Agnieszka Sidorowicz (2020 – 2024)

Green synthesis of nanostructures from microalgae

b. In progress

38) Mattia Casula (2021 – present)

Astrobiology

39) Federico Atzori (2023 – present)

Modeling of complex systems

40) Federico Zedda (2023 – present)

Synthesis of novel materials

41) Giovanni Perra (2023 – present)
Astrobiology

Research Associates Supervised

1) Roberto Orrù	Apr. 1996 – Mar. 1998
2) Guido Peronetti	Jan. 1998 – Jan 2000
3) Paola Serra	Jan. 1998 – Jan. 1999
4) Davide Zedda	Jan. 1998 – Jan. 1999
5) Maura Muscas	Sept. 1998 – Jan. 1999
6) Esa Toukoniitty, Finland	July 1998 – Mar. 1999
7) Zhang Kai, China	Jan. 1999 – March 1999
8) Benjamin Hockey, United Kingdom	Nov. 1998 – July 1999
9) Elena Medda	Sept. 1999 – Sept. 2002
10) Alessandro Concas	Nov. 1999 – Feb. 2000
11) Rita Saiu	Nov. 1999 – March 2000
12) Daniela Carta	March 2000 – Sept. 2002
13) Emanuela Fenu	March 2000 – June 2000
14) Roberta Licheri	March 2000 – Dec. 2000
16) Mariella Sannia (Post-Doc)	July 2000 – January 2002
17) Cincotti Alberto (Assegnista)	August 2000 – Dec. 2002
18) Andrea Uda (Assegnista)	January 2001 – Feb. 2002
19) Maria Emma Raffatellu	August 2002 – Dec. 2002
20) Mauro Porcu	September 2002 – Nov.2002
21) Silvia Caschili	March 2003 – June 2004
22) Gian Franco Marras	March 2004 – Dec.2004
23) Roberta Licheri	Jan. 2004 – Dec. 2011
24) Antonio Locci	Jan. 2004 – March 2006
25) Sarah Fadda	June 2005- December 2005

Research Associates Supervised - continued

26) Luisa Mancuso	Feb. 2007 – April 2020
27) Gianluca Corrias	May 2008 – August 2017
28) Gianluigi Caddeo	July 2008 – March 2009
29) Ivana Ruvoli	August 2008 – March 2009
30) Ilaria Liuzzo	March 2007 – Dec. 2009
31) Leila Nikzad, Iran	Jan. 2012 – June 2012
32) Mohamed Attia, Egypt	Feb. 2013 – July 2014
33) Veronica Malavasi	Sept. 2014 – Sept. 2020
34) Emad Jarjami, Iran	Nov. 2014 – May 2015
35) Joiya Sousa, USA (currently Associate Engineer at Lean Biologix)	Gen. 2017 – July 2017
36) Myra Afzal, USA	Aug. 2018 – Dec. 2018
37) Santina Soru	Nov. 2018 – Sept. 2020
38) Simone Barbarossa	Gen. 2023 – June 2023
39) Mariano Casu	June 2023 - present

LIST OF PUBLICATIONS: SYNOPSIS (last update January 2025)

Giacomo Cao

Refereed Papers in Scientific Journals (PRJ)	267
Refereed Papers in Conference Proceedings (RCP)	19
Book chapters (BC)	21
Books (B)	3
Edited Books (EB)	5
Edited Journal Special Issues (EJSI)	2
Patents (P)	13
Conference Proceedings (CP)	127
Grand total	457
Total citations (Scopus / Google Scholar)	7157 / 9881
h-index (Scopus / Google Scholar)	45 / 52

Full list

1. (PRJ) **G. Cao**, A. Viola, R. Baratti, M. Morbidelli, L. Sanseverino and M. Cruccu, "A Lumped Kinetic Model for Propylene - Butene Mixtures Oligomerization on Supported Phosphoric Acid Catalyst", *Applied Catalysis*, **41**, 301-312 (1988).
2. (PRJ) M. Masi, M. Sangalli, S. Carra', **G. Cao** and M. Morbidelli, "Kinetics of Ethylene Hydrogenation on Supported Platinum", *Chemical Engineering Science*, **43**, 1849-1854 (1988).
3. (PRJ) A. Varma, **G. Cao**, and M. Morbidelli, "Self-Propagating Solid-Solid Noncatalytic Reactions in Finite Pellets", *AIChE Journal*, **36**, 1032-1038 (1990).
4. (PRJ) R. Baratti, **G. Cao**, M. Morbidelli and A. Varma, "Optimal Activity Distribution in Nonuniformly Impregnated Catalyst Particles: Numerical Analysis", *Chemical Engineering Science*, **45**, 1643-1646 (1990).
5. (PRJ) **G. Cao**, A. Varma and M. Morbidelli, "Remarks on Self - Propagating Reactions in Finite Pellets", *AIChE Journal*, **37**, 1420-1424 (1991).
6. (PRJ) O. Cappellazzo, **G. Cao**, R. Messina and M. Morbidelli, "Kinetics of Shape Selective Xylene Isomerization over ZSM-5 Catalyst", *Industrial Engineering Chemistry Research*, **30**, 2280- 2287 (1991).

7. (PRJ) A. Varma, **G. Cao**, J.P. Lebrat and M. Morbidelli, "Self - Propagating Reactions in Finite Pellets: Theory and Experiments", *Inter. J. Self-Prop. High-Temp. Synth.*, **1**, 9-18 (1992).
8. (PRJ) **G. Cao** and M. Morbidelli, "Materiali Ceramici Avanzati Prodotti per Sintesi Autopropagante ad Alta Temperatura", *La Chimica e L' Industria*, **75**, 3-25 (1993).
9. (PRJ) H. Wu, **G. Cao**, M. Morbidelli and S. Carra', "Parametric Sensitivity and Ignition Phenomena in Hydrogen - Oxygen Mixtures", *Journal of Physical Chemistry*, **97**, 8422-8430 (1993).
10. (BC) **G. Cao**, M. Morbidelli and A. Varma, "Thermal Sensitivity and Runaway in Chemical Reacting Systems", NATO ASI E 225 *Chemical Reactor Technology for Environmentally Safe Reactors and Products*, H.I. de Lasa et al. (eds.), Kluwer Academic Publishers, 443-466 (1993).
11. (PRJ) **G. Cao**, A. Varma and W. Strieder, "Approximate Solutions for Nonlinear Gas - Solid Noncatalytic Reactions", *AIChE Journal*, **39**, 913-917 (1993).
12. (PRJ) **G. Cao**, A. Servida, M. Pisu and M. Morbidelli, "Kinetics of p-Xylene Liquid Phase Catalytic Oxidation", *AIChE Journal*, **40**, 1156-1166 (1994).
13. (PRJ) **G. Cao**, M. Pisu and M. Morbidelli, "A Lumped Kinetic Model for Liquid-phase Catalytic Oxidation of p-Xylene to Terephthalic Acid", *Chemical Engineering Science*, **49**, 5775-5788 (1994).
14. (PRJ) K. L. Yeung, R. Aravind, R. J. X. Zawada, J. Szegner, **G. Cao** and A. Varma, "Nonuniform Catalyst Distribution for Inorganic Membrane Reactors: Theoretical Considerations and Preparation Techniques", *Chemical Engineering Science*, **49**, 4823-4838 (1994).
15. (PRJ) **G. Cao** and A. Varma, "A New Expression for Velocity of Combustion Front during Self-Propagating High-Temperature Synthesis", *Combustion Science and Technology*, **102**, 181-191 (1994).
16. (PRJ) **G. Cao**, W. Strieder and A. Varma, "Analysis and Shape Inequalities for Gas - Solid Reactions with Changing Volume", *AIChE Journal*, **41**, 324-336 (1995).
17. (BC) **G. Cao** and A. Varma, "On the Velocity of the Combustion Front during Self-Propagating High-Temperature Synthesis", *Advances in Science and Technology - New Horizons for Materials*, P. Vincenzini Ed., Techna Srl, 177-184 (1995).
18. (PRJ) S. Melis, **G. Cao** and M. Morbidelli, "A New Model for the Simulation of Ion-Exchange Equilibria", *Industrial Engineering Chemistry Research*, **34**, 3916-3924 (1995).
19. (PRJ) R. Orru', B. Simoncini, P. Virdis and **G. Cao**, "Further Studies on a Centrifugal SHS Process for Coating Preparation and Structure Formation in Thermite Reactions", *Inter. J. Self-Prop. High-Temp. Synth.*, **4**, 137-147 (1995).

20. (RCP) R. Orru', **G. Cao** and P. Viridis, "SHS Coatings in the Field of Centrifugal Forces", *Proceedings of EUROMAT 95*, Associazione Italiana di Metallurgia Editore, Milano, Italy, 203-208 (1995).
21. (BC) L. Muscas, C. Paniconi, **G. Cao** and G. Barrocu, "Modellistica dei fenomeni di adsorbimento e trasporto di piombo in mezzi porosi e verifica sperimentale", *Atti del Convegno Internazionale di Geoidrogeologia - a cura di A. Aureli*, Pitagora Editrice Bologna, 113-121 (1995).
22. (RCP) R. Orru', P. Viridis and **G. Cao**, "A Centrifugal SHS Process for the preparation of Coatings", *Proceedings of The Second Italian Conference on Chemical and Process Engineering, AIDIC Conference Series, Vol. I*, ERIS C.T., Milano, 387-394 (1995).
23. (PRJ) A. Viridis, A. Viola and **G. Cao**, "A Novel Kinetic Mechanism of Aqueous Phase Ozone Decomposition", *Annali di Chimica*, **85**, 633-647 (1995).
24. (PRJ) S. Melis, L. Muscas, S. Franzone and **G. Cao**, "Simulation of Lead Adsorption and Transport through a Natural Porous Medium", *Annali di Chimica*, **85**, 621-631 (1995).
25. (PRJ) S. Melis, J. Markos, **G. Cao** and M. Morbidelli, "Multicomponent equilibria on ion-exchange resins", *Fluid Phase Equilibria*, **117**, 2281-2288 (1996).
26. (PRJ) A. Viola and **G. Cao**, "A Rapid Direct Analysis of p-Xylene Oxidation Products by Reverse Phase HPLC", *Journal of Chromatographic Science*, **34**, 27-33 (1996).
27. (PRJ) R. Orru', B. Simoncini, P. F. Viridis and **G. Cao**, "Computer Aided Manufacturing of Centrifugal SHS Coatings", *Computer and Chemical Engineering*, **20**, S1185-S1190 (1996).
28. (RCP) M. L. Pilia, A. Viola and **G. Cao**, "Operation of Fluid Catalytic Cracking Riser Reactors as Light Olefins Generator for the Production of Reformulated Gasoline", *Proceedings of The III International Conference ENERGY AND ENVIRONMENT Towards the Year 2000*, de Costanzo Eds., Naples, 807-818 (1996).
29. (PRJ) S. Melis, J. Markos, **G. Cao** and M. Morbidelli, "Ion Exchange Equilibria of Amino Acids on a Strong Acid Resin", *Industrial Engineering Chemistry Research*, **35**, 1912-1920 (1996).
30. (RCP) S. Melis and **G. Cao**, "A Heterogeneous Model for the Simulation of Ion Exchange Equilibria", *Ion Exchange Developments and Applications*, J.A. Greig (ed.), The Royal Society of Chemistry, Cambridge, 257-265 (1996).
31. (BC) **G. Cao**, "Prediction of Ion Exchange Equilibria in Energy and Mineral Production", *Proc. of the IV International Conference on Environmental Issues and Waste Management in Energy and Mineral Production, SWEMP '96*, R. Ciccu (ed.), Grafiche Galeati, Imola, 447-454 (1996).

32. (PRJ) S. Melis, J. Markos, **G. Cao** and M. Morbidelli, "Separation between Amino Acids and Inorganic Ions through Ion Exchange. Development of a Lumped Model", *Industrial Engineering Chemistry Research*, **35**, 3629-3636 (1996).
33. (PRJ) R. Orru', B. Simoncini, P. F. Virdis and **G. Cao**, "Mechanism of Structure Formation in Self-propagating Thermite Reactions: Comparison between Alumina and Silica as Additive in the Starting Mixture", *Metallurgical Science & Technology*, **14** (2), 69-77 (1996).
34. (PRJ) R. Orru', B. Simoncini, P. F. Virdis and **G. Cao**, "Rivestimenti antiusura ed anticorrosione per sintesi autopropagante ad alta temperatura", *Metallurgia Italiana*, **12**, 753-759 (1996).
35. (PRJ) R. Orru' and **G. Cao**, "Analytical expressions for velocity of the combustion front in gas-solid self-propagating high-temperature reactions with no filtration limitations", *Inter. J. Self-Prop. High-Temp. Synth.*, **5**, 209-222 (1996).
36. (PRJ) R. Orru', B. Simoncini, D. Carta, and **G. Cao**, "On the Mechanism of Structure and Product Formation in Self-propagating Thermite Reactions", *Inter. J. Self-Prop. High-Temp. Synth.*, **6**, 15-27 (1997).
37. (PRJ) R. Orru', B. Simoncini, P. F. Virdis and **G. Cao**, "Self-propagating Thermite Reactions: Effect of Alumina and Silica in the Starting Mixture on the Structure of the Final Products", *Metallurgical Science & Technology*, **15** (1), 31-38 (1997).
38. (PRJ) **G. Cao**, G. Concas, A. Corrias, R. Orru', G. Paschina, B. Simoncini, G. Spano, "Investigation of the Reaction between Ferric Oxide and Aluminum accomplished by Ball Milling and Self-propagating High-temperature Techniques", *Zeitschrift fur Naturforschung-Part a*, 539-549 (1997).
39. (PRJ) A. Cincotti, R. Orru', A. Broi and **G. Cao**, "Effect of catalyst concentration and simulation of precipitation processes on the liquid-phase catalytic oxidation of p-xylene to terephthalic acid", *Chemical Engineering Science*, **52**, 4205-4213 (1997).
40. (BC) B. Simoncini, R. Orru' and **G. Cao**, "An Innovative Approach for Treating and Recycling Zinc Hydrometallurgical Wastes", *Proceedings of the I National Congress - Valorization and Recycling of Industrial Wastes*, Mucchi Editore, 307-314 (1998).
41. (PRJ) R. Orru', B. Simoncini, P. F. Virdis and **G. Cao**, "Mechanism of Structure Formation in Self-Propagating Thermite Reactions: The Case of Alumina as Diluent", *Chemical Engineering Communication*, **163**, 23-36 (1998).
42. (PRJ) A. Gavriilidis, S. Melis and **G. Cao**, "Hydrodemetallation catalyst pellets with nonuniform radial pore size distribution", *Chemical Engineering Communication*, **163**, 37-54 (1998).
43. (PRJ) A. Cincotti, R. Orru' and **G. Cao**, "Kinetics and related engineering aspects of catalytic liquid-phase oxidation of p-xylene to terephthalic acid", *Catalysis Today*, **52**, 331-347 (1999).

44. (PRJ) R. Orru', **G. Cao** and Z. A. Munir, "Mechanistic investigation in the field-activated combustion synthesis (FACS) of titanium aluminides, *Chemical Engineering Science*, **54**, 3349-3355 (1999).
45. (PRJ) R. Orru', M. Sannia, A. Cincotti and **G. Cao**, "Treatment and recycling of zinc hydrometallurgical wastes by self-propagating reactions", *Chemical Engineering Science*, **54**, 3053-3061 (1999).
46. (PRJ) R. Orru', **G. Cao** and Z. A. Munir, "Field-assisted Combustion Synthesis of Titanium Aluminides", *Metallurgical & Materials Transactions A-Physical Metallurgy & Materials Science*, **30A**, 1101-1108 (1999).
47. (PRJ) G. Carta, A. Cincotti and **G. Cao**, "Linear driving force approximation for binary ion exchange", *Separation Science and Technology*, **34**, 1-16 (1999).
48. (RCP) A. Cincotti, R. Orru', M. Sannia, D. Zedda and **G. Cao**, "Combustion front quenching techniques for SHS macrokinetics studies", *Advances in Science and Technology - Ceramics: Getting into the 2000's - Part C*, P. Vincenzini Ed., Techna Srl, Vol. 15, 231-238 (1999).
49. (PRJ) A. Cincotti, M. Murru, **G. Cao**, B. Marongiu, F. Masia and M. Sannia, "Liquid-liquid equilibria of hydrocarbons with n-formylmorpholine", *Journal of Chemical Engineering Data*, **44**, 480-483 (1999).
50. (PRJ) **G. Cao**, S. Doppiu, M. Monagheddu, R. Orru', M. Sannia and G. Cocco, "The thermal and mechanochemical self-propagating degradation of chloro-organic compounds: the case of hexachlorobenzene over calcium hydride", *Industrial Engineering Chemistry Research*, **38**, 3218-3224 (1999).
51. (PRJ) G. Cocco, S. Doppiu, M. Monagheddu, **G. Cao**, R. Orru' and M. Sannia, "Self-propagating high-temperature reduction of toxic chlorinated aromatics", *Int. J. of SHS.*, **8**, 521 - 526 (1999).
52. (RCP) T. Faravelli, A. Goldaniga, E. Ranzi, M. Pisu and **G. Cao**, "Ignition Delay Times and Knocking Tendency of Kerosene", *Proceedings of The Fourth Italian Conference on Chemical and Process Engineering, AIDIC Conference Series, Vol. IV*, ERIS C.T., Milano, 9-16 (1999).
53. (PRJ) V. Kostanyan, H. H. Nersisyan, S. L. Kharatian, D. Zedda, R. Orru' and **G. Cao**, "Chemically Stimulated Combustion in Zr/SiO₂/C System and Synthesis of ZrO₂/SiC Composite Ceramic Powders Containing SiC Whiskers" *Int. J. SHS*, vol. 9, N. 4, 387-402 (2000)
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289. C S. Soru, V. Malavasi, A. Concas and **G. Cao** (speaker), “Growth and lipid accumulation kinetics of *Coccomyxa melkonianii* scca 048: experimental and modeling”, ISCRE 25, Florence (Italy), May 20-23 (2018).
- 290.C A. Zuorro, V. Malavasi, **G. Cao** and R. Lavecchia, “Use of cell wall degrading enzymes to improve the recovery of lipids from *Chlorella sorokiniana*”, ISCRE 25, Florence (Italy), May 20-23 (2018).
- 291.C A. M. Locci (speaker), R. Orrù and **G. Cao**, “Mathematical modeling of spark plasma sintering: a sensitivity analysis of materials rheological parameters, 4th International Workshop on SPS, Cagliari (Italy), May 23-25 (2018).

- 292.C M. Luginina, C. Drouet, F. Brouillet, D. Grossin, G. Chevallier, R. Orrù and **G. Cao**, “Spark plasma sintered reactive calcium phosphates: toward highly bioresorbable materials for biomedical applications”, 4th International Workshop on SPS, Cagliari (Italy), May 23-25 (2018).
- 293.C R. Licheri, C. Musa, R. Orrù and **G. Cao**, “Fabrication and characterization of bulk ultrarefractory ceramics by reactive and non reactive SPS”, 4th International Workshop on SPS, Cagliari (Italy), May 23-25 (2018).
- 294.C R. Orrù, G. Tallarita, R. Licheri and **G. Cao**, “Ultra-refractory Ceramics by Combination of SHS and SPS: Recent Advances”, 14th International Ceramics Congress CIMTEC, Perugia (Italy), June 4-8 (2018).
- 295.C C. Drouet, D. Grossin, G. Bertrand, E. Champion, C. Ortali, M. Luginina, A. Paterlini, G. Chevallier, I. Julien, R. Orrù, **G. Cao**, S. Dosta, I. Garcia, F. Brouillet and C. Rey, “Low temperature calcium phosphate processing: a new path to face biomedical challenges”, 30th Symposium and Annual Meeting of the International Society for Ceramics in Medicine, Nagoya, (Japan) October 26-29 (2018).
- 296.C V. Malavasi, S. Soru, A. Concas, S. Montinaro, M. Afzal, M. Pisu and **G. Cao**, “Preliminary study of the effect of iron on the growth and morphology of extremophile green alga *Coccomyxa melkonianii* SCCA 048”, Società Botanica Italiana onlus, Riunione scientifica annuale (a cura di G. Alongi), Catania (Italy), November 16-17 (2018).
- 296.C V. Malavasi, S. Soru, A. Concas, S. Montinaro, M. Afzal, M. Pisu and **G. Cao**, “Preliminary study of the effect of iron on the growth and morphology of extremophile green alga *Coccomyxa melkonianii* SCCA 048”, Società Botanica Italiana onlus, Riunione scientifica annuale (a cura di G. Alongi), Catania (Italy), November 16-17 (2018).
- 297.C S. Soru, V. Malavasi, A. Concas, P. Caboni and **G. Cao**, “Modeling and Experimental Investigation of the Effect of Nitrogen Starvation and pH Variation on the cultivation of the extremophile microalga *Coccomyxamelkonianii* SCCA048”, XIV International Conference on Chemical and Process Engineering, Bologna, Italy, May 26-29 (2019).
- 298.C A. Concas, M. Pisu and **G. Cao**, “Mathematical Modeling of the Size-Structured Growth of Microalgae Dividing by Multiple Fission”, XIV International Conference on Chemical and Process Engineering, Bologna, Italy, May 26-29 (2019).
- 299.C R. Orrù, G. Tallarita, R. Licheri, M. Natali, L. Torre and **G. Cao**, “Combination of SHS and SPS processing routes to obtain advanced ceramics and related characterization in hyperthermal environments”, 3rd International Symposium on Hypersonic Flight, Air Force Academy, Pozzuoli, Italy, May 30-31 (2019).
- 300.C V. Malavasi, S. Soru, A. Concas, M. Pisu, G. Fais and **G. Cao**, “Cultivation of sardinian microalgal strains for innovative applications in the agri-food,

- nutraceutical, cosmetic and environmental sectors: the comisar project”, 7th European Phycological Congress, Zagreb, Croatia, Aug 25-30 (2019).
- 301.C G. Fais, V. Malavasi, P. Caboni, S. Soru and **G. Cao**, “A preliminary comparative study of metabolic and morphological changes of two unicellular trebouxiophyceae (chlorophyta) from SCCA”, 7th European Phycological Congress, Zagreb, Croatia, Aug 25-30 (2019).
- 302.C R. Orrù, G. Tallarita, R. Licheri, S. Barbarossa, S. Garroni and **G. Cao**, “Combination of SHS and SPS Processing Routes for Advanced Ceramics”, XV International Symposium SHS 2019, Moscow, Russia, Sept. 16-20 (2019).
- 303.C V. Malavasi, S. Soru, A. Concas, M. Pisu, G. Fais, P. Caboni and **G. Cao**, “Extremophile microalgae for biotechnological applications”, 92th SIBS (Società Italiana di Biologia Sperimentale) Congress, Sassari, Italy, Dec. 2-4 (2019).
- 304.C B. Ezealigo, R. Orrù and **G. Cao**, “Barium Titanate Perovskite Ceramics Synthesized by Solid State Combustion”, 4th International Conference/ Training Workshop on Energy for Sustainable Development in Africa, Nsukka Enugu State, Nigeria, May 20-22 (2020).
- 305.C B. Ezealigo, R. Orrù, A. Iacomini, S. Garroni, C. Elissalde, H. Debéda, U. Chung, M. Maglione and **G. Cao**, “BaTi_(1-x)Zr_xO₃ ceramics fabricated by self-propagating high-temperature synthesis and spark plasma sintering”, XI International Conference PIEZO2021, Sassari, Italy, February 21-24 (2021).
- 306.C A. Concas, S. Montinaro, M. Pisu, N. Lai and **G. Cao**, “Mechanochemical Treatment of Soils Contaminated by Heavy Metals in Attritor and Impact Mills: Experiments and Modeling”, IcheaP15, May 23-26 (2021).
- 307.C A. Concas, G. A. Lutz, M. Pisu, and **G. Cao**, “Biomass and Lipid Production by *Pseudochloris wilhelmii* in Sea-Wastewater Mixtures: Modeling and Experiments, IcheaP15, May 23-26 (2021).
- 308.C **G. Cao**, A. Concas, G. Fais, G. Gabrielli, A. Manca, F. Micheli and A. Pantaleo, “Process and kit to investigate microgravity effect on animal/vegetable cells under extraterrestrial cultivation conditions and cultivation process thereof to

- sustain manned space missions”, International Conference AlgaEurope 2021, recipient of the 3rd innovation award, December 7-10 (2021).
- 309.C G. Siddi Moreau, L. Pisani, A. Mameli, C. Podda, **G. Cao** and E. Prati, “Gravity Data Inversion with Adiabatic Quantum Computer”, Workshop Quantum Computing and High Performance Computing 4th edition, December 16 (2021).
- 310.C A. Manca, G. Fais, A. Concas, **G. Cao** and A. Pantaleo, “Microgravity effect on cyanobacteria under extra-terrestrial growing conditions to support manned space missions”, 94 Congresso SIBS, April 6-9 (2022).
- 311.C S. Barbarossa, R. Orrù, A. Iacomini, S. Garroni and **G. Cao** “Optimization of Processing Conditions for the Fabrication of Bulk High Entropy Borides”, CIMTEC 2022 - 15th International Ceramics Congress, Perugia (Italy), June 21-24 (2022).
- 312.C D. Angioni, R. Orrù, **G. Cao**, S. Garroni, A. Iacomini, D. Bellucci and V. Cannillo “Spark Plasma Sintering, Crystallization, Mechanical Properties and Biological Behavior of an Innovative SrO- and MgO-containing Bioactive Glass”, CIMTEC 2022 - 9th FORUM ON NEW MATERIALS, Perugia (Italy), June 25-29 (2022).
- 313.C E. Pakhomova, C. Manis, **G. Cao**, A. Varone, R. Montanari and A. Fava, “AZ31 per impianti biodegradabili: studio in vitro della biocorrosione a lungo-termine”, 39° Convegno nazionale AIM, Padova (Italy), September 21-23 (2022).
- 314.C D. Angioni, R. Orrù, G. Cao, S. Garroni, D. Belluccia and V. Cannillo, “Novel Bioactive glass-Hydroxyapatite composites for bone tissue engineering: processing, mechanical and in vitro biological properties. BIOCERAMICS32, Mestre (Italy), September 20-23 (2022).
- 315.C R. Orrù, S. Barbarossa, R. Licheri, S. Garroni and **G. Cao**, “Synthesis and Consolidation of High Entropy Ceramics”, 5th Global Webinar on Materials Science and Engineering and 4th Global Webinar on Nanoscience and Nanotechnology, Bangalore (India), October 29 (2022).
- 316.C A. Concas, F. Delogu, N. Lai and **G. Cao**, “A Preliminary Investigation on the Mechanochemical Degradation of 2,6 Dichlorophenol in Simulated Sandy Soils: Modeling End Experiments”, *Chemical Engineering Transactions*, **98**, 213-218 (2023). DOI:10.3303/CET2398036
- 317.C E. Brughitta, F. Atzori, E. Gamboni, S. Foddi, M. Casula, G. Fais, A. Manca, A. Pantaleo, **G. Cao** and A. Concas, “A. Cultivation of Cyanobacteria and Microalgae using Simulated in-situ Available Resources for the Production of

- useful Bio-compounds on Mars: Modelling of Experiments”, *Chemical Engineering Transactions*, **98**, 111-116 (2023). DOI:10.3303/CET2398019
- 318.C **G. Cao**, S. Barbarossa, R. Orrù, R. Licheri and S. Garroni, “Synthesis and consolidation of high entropy ceramics”, III Edition of Chemistry World Conference, June 15 (2023)
- 319.C D. Angoini, R. Orrù, **G. Cao**, D. Bellucci and V. Cannillo, “Effect of a Ball milling Treatment on mechanical and in vitro biological properties of Bioactive Glass-Hydroxyapatite composites”, XVIII ECERS, Lyon (France), July 2-6 (2023).
- 320.C G. Fais, M. Casula, A. Concas and **G. Cao**, “Coltivazione di Microalghe su Marte con Utilizzo delle Risorse in Situ per l'Alimentazione Spaziale”, SIMPOSIO "A TAVOLA NELLO SPAZIO: produzione, conservazione e preparazione di cibo" at Italian Space Agency, March 20-21 (2024).
- 321.C R. Licheri, E. Pakhomova, S. Garroni, R. Orrù, P. Ferro and **G. Cao**, “Fabrication of high entropy diboride - sic composites through self propagating high temperature synthesis and spark plasma sintering”, XIV Convegno INSTM sulla Scienza e Tecnologia dei Materiali, June 9-12 (2024).

INVITED SEMINARS, CONFEREN. PRESENTATIONS & EDUCATIONAL ARTICLES

Giacomo Cao

1.S

"Experimental Analysis and Modeling of p-Xylene Liquid Phase Catalytic Oxidation", CDTech, Pasadena, Texas, USA (1992).

2.S

"Kinetics of p-Xylene Liquid Phase Catalytic Oxidation", Department of Chemical and Petroleum Engineering, University of Kansas, Lawrence, USA (1993).

3.S

"On the Liquid Phase Catalytic Oxidation of p-Xylene", Department of Chemical and Biochemical Engineering, University College London, London, United Kingdom (1993).

4.S

"Reattori Inorganici a Membrana: Effetto della Distribuzione del Catalizzatore", Dipartimento di Ingegneria Chimica e dei Materiali, Università degli Studi della Calabria, Arcavacata di Rende (CS), Italy (1994).

5.S

"Ossidazione catalitica del p-Xylene in Fase Liquida", Dipartimento di Ingegneria Chimica e dei Materiali, Università degli Studi della Calabria, Arcavacata di Rende (CS), Italy (1994).

6.S

"Meccanismi di formazione della struttura in processi di sintesi autopropagante ad alta temperatura: prospettive di contatto con la fisica microscopica", Dipartimento di Scienze Fisiche, Università di Cagliari, Cagliari, Italy (1996).

7.S

"Experimental Analysis and Modeling of Catalytic Oxidation of p-Xylene to Terephthalic Acid", AMOCO, Naperville, Illinois, USA (1996).

8.S

"Reazioni autopropaganti per il trattamento di residui industriali", Dipartimento di Chimica e Chimica Industriale, Università di Genova, Genova, Italy (1997).

9.S

"Materiali innovativi per sintesi autopropagante ad alta temperatura", CNR - TeMPE, Milano, Italy (1997).

10.S

"Topical Team Proposal on Combustion Synthesis and Microgravity", ESA Headquarters, Paris, France (1998).

11.S

"Self-Propagating High-Temperature Synthesis (SHS) Applications", Department of Chemical Engineering, University of Virginia, Charlottesville, Virginia, USA (1998).

12.S

"Reazioni Autopropaganti ad Alta Temperatura: Aspetti Fondamentali ed Applicazioni", Istituto di Chimica Fisica Applicata dei Materiali del Consiglio Nazionale delle Ricerche, Genova, Italy (1999).

13.S

"Environmental issues in SHS", Round Table – SHS in Chemical Engineering, V International Symposium on SHS – SHS'99, Moscow, Russia (1999).

14.S

"Group activity on self-propagating reactions", Annual Meeting of the Center for Commercial Applications of Combustion in Space, Golden, Colorado, USA (1999).

15.S

"Solid-solid high-temperature reaction modeling", Master di tecniche informatiche avanzate per la progettazione e simulazione, CRS4, Cagliari, Italy (1999).

16.S

"Analisi sperimentale e modellistica dell'ossidazione del p-xilene ad acido tereftalico", Università degli Studi di Bologna, Bologna, Italy (2000).

17.S

"Combustion Synthesis", PHYSICAL SCIENCES WORKING GROUP MEETING OF THE EUROPEAN SPACE AGENCY, NOORDWIJK, THE NETHERLANDS (2001).

18.S

"Il ruolo della chimica per l'ambiente per lo sviluppo sostenibile", Workshop Costruire uno sviluppo sostenibile", Cagliari, Italy (2001).

19.S

"Combustion Synthesis Processes" Workshop on mechanochemical methods, Alghero (SS), Italy (2001).

20.S

"Il ruolo della tecnica di sintesi autopropagante (SHS) ad alta temperatura", WORKSHOP "Materiali per lo spazio: sintesi, metodologie, tecnologie", BONASSOLA (SP), Italy (2001).

21.S

"Combustion Synthesis", Workshop "European Combustion Experiments in Space" Astrium GmbH, Immenstaad, Germany (2001).

22.S

"Il progetto del Laboratorio Promea – INSTM", Convegno "Il Promea nel parco scientifico e tecnologico regionale", Cagliari, Italy (2001).

21.S

“2002 Program of Parabolic Flight and ISS Combustion Synthesis Experiments”, Press Conference hosted by the President of the Sardinian Regional Government, Cagliari, Italy (2002).

22.S

“Sintesi di Materiali per Combustione”, Corso Seminariale di Metallurgia, Torino, Italy (2002).

23.S

“Risanamento chimico: trattamenti chimico-fisici”, I SUMMER SCHOOL RICERCA, SPERIMENTAZIONE E SVILUPPO DI TECNOLOGIE DI BONIFICA DI SITI CONTAMINATI, Cengio (SV), Italy (2002).

24.S

“2002 Parabolic Flight and ISS Combustion Synthesis Experiments”, Press Conference hosted by the Rector of Cagliari University, Cagliari, Italy (2002).

25.S

“Combustion Synthesis”, PHYSICAL SCIENCES WORKING GROUP MEETING OF THE EUROPEAN SPACE AGENCY, NOORDWIJK, THE NETHERLANDS (2003).

26.S

“Self-propagating high-temperature reactions: experimental results, modeling studies and potential applications”, Dipartimento di Chimica, Università di Sassari, Sassari, Italy (2003).

27.S

“Sintesi per combustione di materiali innovativi”, Colorobbia, Sovigliana (FI), Italy (2003).

28.S

“Sintesi per combustione di materiali innovativi”, Centro Sviluppo Materiali (CSM), Rome, Italy (2003).

29.S

“Sintesi per Spark Plasma Sintering (SPS) di materiali innovativi, Speciali Applicazioni Industriali del Diamante (SAID), Isola Vicentina (VI), Italy (2004).

30.S

“Trattamenti Termici”, Corso di aggiornamento professionale sulla Bonifica dei siti contaminati, Piacenza, Italy (2004).

31.S

“Progetto INCA – Monitoraggio, bonifica e ripristino di siti contaminati”, Ciclo itinerante di 6 incontri a tema. Il PON Ricerca nelle Regioni dell’Obiettivo 1: l’esperienza nella Regione Sardegna”, Sassari, Italy (2004).

32.S

“Synthesis process to obtain a magnesium diboride based superconductor, and product obtained through such a process”, Press Conference for the Italian patent submission hosted by the Dean of Engineering, Cagliari, Italy (2004).

33.S

“Spark Plasma Sintering (SPS): attività sperimentale e modellistica”, CRS4, Italy (2004).

35.S

“Synthesis process to obtain a magnesium diboride based superconductor, and product obtained through such a process”, Press Conference for the PCT extension patent submission hosted by the Dean of Engineering, Cagliari, Italy (2005).

36.S

“Esperienze di cooperazione e progetti di penetrazione economica”, Seminario della Camera di Commercio della Provincia di Cagliari – Nuovi mercati e prospettive di sviluppo nei paesi del Nord Africa, Cagliari, Italy (2005).

37.S

“Spaceland in Sardinia” shared with Carlo Viberti, Press Conference, Cagliari, Italy (2006).

38.S

“Synthesis process to obtain a magnesium diboride based superconductor, and product obtained through such a process”, Press Conference for the PCT (“Synthesis process to obtain a magnesium diboride based superconductor, and product obtained through such a process”) approval hosted by the Dean of Engineering, Cagliari, Italy (2006).

39.S

“Process for the preparation of dense Ultra-High- Temperature Composite products”, Press Conference for the PCT patent submission, Cagliari, Italy (2006).

40.S

“Nuove tecnologie per la bonifica e il ripristino ambientale di siti contaminati”, Press Conference at the end of the corresponding PON project sponsored by MUR, Cagliari, Italy (2007).

41.S

“SHS in Italy: an overview”, *International Conference on Historical Aspects of SHS in Different Countries*, Chernogolovka, Russia (2007).

42.S

“NAAnoSTRUcured Dense MAterials”, Presentation of invited project to I-Techpartner, Rome, Italy (2007).

43.S

“Chimica per lo sviluppo sostenibile (CHISS)”, Presentation of the project, Cagliari, Italy (2008).

44.S

“Spin off and CNR-DET-Cagliari: one year after”, Press Conference, Cagliari, Italy (2008).

45.S

“Innovazione tecnologica e fonti alternative di energia: la Sardegna terra di eccellenza per la ricerca”, Forum ad inviti del Giornale di Sardegna, Cagliari, Italy (2008).

46.S

A. Concas and **G. Cao**, “Sequestro di CO₂ e produzione di biopetrolio mediante microalghe”, *Informazione Ordine Ingegneri Provincia di Cagliari*, 109, 5-10 (2008).

47.S

“Scenari e prospettive interdisciplinari della pratica medica: l’ingegneria dei tessuti e la medicina rigenerativa”, Incontri seminariali interfacoltà: Il progresso della medicina e quello dell’arte medica a confronto, Cagliari, Italy (2009).

48.S

“DNM (Dense Nanostructured Materials) Srl: un nuovo spin off dell'Università di Cagliari”, Invited lecture Convegno Materiali Nanofasici, Iglesias, Italy (2009).

49.S

“DNM (Dense Nanostructured Materials) Srl”, Press Conference for the company start-up, Cagliari, Italy (2009).

50.S

“Sequestro di anidride carbonica e produzione di combustibili mediante microalghe”, Convegno EPolis, Cagliari, Italy (2009).

51.S

“Voli parabolici per la messa a punto di tecnologie per l’plorazione spaziale”, Primo Campus di Turismo Scientifico Aerospaziale in Costa Smeralda, Olbia, Italy (2009).

52.S

“COSMIC project launch”, Press Conference, Cagliari, Italy (2009).

53.S

“COSMIC project advancements”, Press Conference, Rome, Italy (2010).

54.S

“Seminario Green Future – UNICA”, Cagliari, Italy (2011).

55.S

“COSMIC, una casa su Marte”, Qui si rifà l’Italia – Mostra Stazione Futuro, Torino, Italy (2011).

56.S

“Filed patents from COSMIC project”, Press Conference, Rome, Italy (2011).

57.S

“Nuove tecnologie per l’plorazione umana dello spazio”, Festa Nazionale Democratica dell’Università e della Ricerca, Cagliari, Italy (2011).

58.S

“Nuove tecnologie per l’plorazione umana dello spazio”, La Notte dei Ricercatori, Cagliari, Italy (2011).

59.S

A. Concas and **G. Cao**, “Riduzione di gas serra con tecnologie a microalghe e produzione di biopetrolio”, *La Chimica e l’Industria*, **8**, 37-38 (2011).

60.S

“Outputs of the COSMIC project”, Technical Meeting at Head of Exploration Architecture Office (HSF-ID), Directorate of Human Spaceflight – ESA, Noordwijk, The Netherlands (2011).

61. S

G. Cao, A. Concas, G. Corrias, R. Licheri, R. Orrù and M. Pisu, “Development of Novel ISRU and ISFR Technologies for Future Manned Space Missions”, *Mars Transactions*, **4**, 16-18 (2011).

62.S

“Nuove tecnologie per l’esplorazione umana dello spazio”, Seminari per la Valorizzazione dei Risultati della Ricerca al CRS4, Cagliari, Italy (2012).

63.S

A. Concas, G. Corrias, R. Orrù, R. Licheri, M. Pisu and **G. Cao**, “Reperimento in-situ di materie prime utili per il sostentamento di missioni umane nello spazio”, Giornata di studio su "Space farming", *Tomo II degli Atti 2012 dell'Accademia dei Georgofili* (2012).

64.S

Invited speaker at the Industrial Frontiers session (a special forum for quality contributions that highlights important industrial developments and related topics that are expected to be of large interest to the ISCRE community) of ISCRE (International Symposium on Chemical Reaction Engineering) 22 “[Combination of classical and molecular modeling approaches to investigate the action mechanism of various types of drugs on cell proliferation kinetics](#)”, Maastricht, The Netherlands (2012).

65.S

Invited speaker at the III Regional Conference on Research and Innovation in the session “I cluster tecnologici nazionali come miglioramento della competitività del territorio ed il contributo della Sardegna”, Cagliari, Italy (2012).

66.S

Invited speaker at the “Terzo Incontro in ASI sui Centri regionali di competenze spaziali e il loro finanziamento” to present “the Space Activities in Sardinia: COSMIC project and beyond”, Roma, Italy (2012).

67.S

Invited speaker at the Workshop “Dalla Nanomedicina al Brain imaging. Le nuove frontiere delle Nanobioteconologie” to present “Current Trends in Biomedical Engineering and Recent Results”, Parco Scientifico e Tecnologico, Pula (CA), Italy (2013).

68.S

Invited speaker at the European Space Expo to present “Le tecnologie per l’esplorazione dello spazio”, Piazza del Popolo, Rome, Italy (2013).

69.S

Invited speaker at La Notte dei Ricercatori to present “Nuove tecnologie per l’esplorazione robotica e umana dello spazio”, Piazza Mameli, Nuoro, Italy (2013).

70.S

“DASS (Distretto Aerospaziale Sardegna) Scarl”, Press Conference shared with the President of the Sardinian Regional Government to introduce the company start-up, Cagliari, Italy (2013).

71.S

Invited speaker at Rotary to present “La Sardegna nello spazio”, Cagliari, Italy (2013).

72.S

“Dallo spazio ipogeo allo spazio cosmico”, Istituto Tecnico Minerario “Giorgio Asproni”, Iglesias (CA), Italy (2014).

73.S

“Geografia dello Spazio”, Istituto Comprensivo “C. Nivola”, Iglesias (CA), Italy (2014).

74.S

“Nuove tecnologie per l’esplorazione umana e robotica dello spazio”, Giornate Orientamento, University of Cagliari, Monserrato (CA), Italy (2014).

75.S

“Nuove tecnologie per l’esplorazione umana e robotica dello spazio”, Presentation for last-year-high-school students, University of Cagliari, Cagliari, Italy (2014).

75.S

G. Cao, G. Storti and M. Masi, “Massimo Morbidelli Festschrift Preface”, *Industrial Engineering Chemistry Research*, **53**, 8937–8938 (2014)
<http://pubs.acs.org/toc/iecred/53/22>

76.S

Invitation to participate to “La Repubblica degli Innovatori”, Cagliari, Italy (2014)
http://www.repubblica.it/next/2014/07/10/news/anno_2030_destinazione_marte_anch_e_con_ricerca_e_brevetti_sardi_ma_occorrono_fondi_da_investire-91178758/

77.S

“DASS (Distretto Aerospaziale Sardegna) Scarl”, Press Conference shared with the Vice-President of the Sardinian Regional Government to introduce the occurred capital increase and the new shareholders: Avio SpA, Karalit Srl, Nemea Sistemi Srl, Nurjana Technologies Srl, Cagliari, Italy (2015).

78.S

“DASS (Distretto Aerospaziale Sardegna) Scarl”, Press Conference to introduce its logo and the new shareholder: Centro Italiano Ricerche Aerospaziali (CIRA) ScpA, Cagliari, Italy (2015).

79.S

“Produzione di materiali per il sostentamento di missioni umane su Luna e Marte mediante l'utilizzo di risorse disponibili in-situ”, La nascente industria del volo spaziale civile, Milano, Italy (2015).

80.S

“Prospettive di sviluppo dell'aerospazio in Sardegna”, Ricerca scientifica, scuola, industria e opportunità internazionali c/o Istituto Giua, Cagliari, Italy (2015).

81.S

“Environmental and space application of SHS”, Plenary lecture at the International Symposium of SHS, Antalya, Turkey (2015).

82.S

“Materiali per altissime temperature”, Congresso Nazionale di Futurologia, Napoli, Italy (2015).

83.S

“DASS (Distretto Aerospaziale Sardegna) Scarl”, Press Conference to introduce the occurred capital increase and the new shareholders: Aeronike Srl, GEM Elettronica Srl, MR8 Srls, Oben Srl, U-Avitalia Srl, Cagliari, Italy (2016).

84.S

“Chemical engineering for biological and spatial applications”, Conference in the framework of the PhD program in Chemical and Materials Engineering, University of Calabria, Rende (CS), Italy (2016)

85.S

“Marte e l'abitabilità dei mondi, quando l'immaginazione scientifica sposa la fantascienza”, Rassegna culturale “Scienza e fantascienza tra conoscenza inquietudine e meraviglia” promossa dalla Biobiblioteca Provinciale, Cagliari, Italy (2016).

86.S

“Activities of the Sardinian AeroSpace District (DASS) Scarl”, International Course on Space Optical Engineering, Poltu Quatu (SS), Italy (2016).

87.S

“Zr-, Hf- and Ta-based Ultra High Temperature Ceramics for the Space Environment”, Workshop “Materials in the Space Environment” at Italian Space Agency, Rome, Italy (2016).

88.S

“Il paradigma dello sviluppo tecnologico in Sardegna”, Giornata dell’Associazione Termotecnica Italiana Sezione Sardegna - I gas liquefatti protagonisti dello sviluppo nelle imprese sarde, grazie alla cogenerazione ed alla riduzione delle emissioni – Cagliari, Italy (2016).

89.S

“Presentazione del Distretto AeroSpaziale della Sardegna”, 10th PAMIR International Conference - Fundamental and Applied MHD, Cagliari, Italy (2016).

90.S

“Presentazione del Distretto AeroSpaziale della Sardegna”, International summer school in Engineering and Management of Industrial Systems – EMIS2016, Carbonia (CA), Italy (2016).

91.S

Speaker at the Round Table “The difficulties of industrial activities in Sardinia”, FiomInFesta, Sarroch (CA), Italy (2016).

92.S

Deposition at the Parliamentary Committee of Inquiry on “depleted uranium”, Cagliari Prefecture, Cagliari, Italy (2016).

93.S

“Dibattito con riferimento al film *Il viaggio sulla Luna*”, Rassegna culturale “Scienza e fantascienza tra conoscenza inquietudine e meraviglia” promossa dalla Biblioteca Provinciale, Cagliari, Italy (2016).

94.S

“Novel ISRU and ISFR technologies for space exploration”, China - Italy Science Technology and Innovation Week, Naples, Italy (2016)

95.S

“L’aerospazio in Sardegna: analisi e prospettive”, Unisulky S’ischiglia Network - Università Popolare del Sulcis, Carbonia (CA), Italy (2016).

96.S

“Infrastrutture militari disponibili in Sardegna per progetti aerospaziali di natura civile”, Presentazione CalendEsercito 2017 “Innovazioni della grande guerra”, Cagliari, Italy (2016).

97.S

“L’aerospazio in Sardegna”, Seminario “Giovani, lavoro, nuove tecnologie”, Arcivescovado di Cagliari, Cagliari, Italy (2016).

98.S

“La Sardegna avanguardia nelle ricerche aerospaziali? Lavoro e occupazione, viaggi supersonici e spedizioni sulla Luna e su Marte”, Circolo Sankara, Cagliari, Italy (2017).

99.S

“Dialogo su eccellenza e impatto scientifico”, Rivista “Il merito (<http://ilmerito.org/>), Italy (2017).

100.S

“Il contributo del Distretto Aerospaziale della Sardegna”, Prospettive di Innovazione e Sviluppo in Sardegna, Sardegna in Fiera, Cagliari, Italy (2017).

101.S

“Il contributo dell’Accademia e del Distretto Aerospaziale della Sardegna”, Impresa 4.0 Meridee Progetti dal Sud, Bari (Italy) 2017.

102.S

“L’aerospazio inteso come momento di aggregazione per PMI e PA”, Applicazioni RADAR/SAR per il monitoraggio del territorio: caso di studio Ventimiglia, Agenzia Spaziale Italiana, NeMeA Sistemi Srl, Ventimiglia (Italy) 2017.

103.S

“Il Distretto come sistema di cluster di imprese nel settore dell’aerospazio”, Presentazione Investimento Produttivo Avio SpA, Villaputzu (Italy) 2017.

104.S

“Il Dipartimento di Ingegneria Meccanica, Chimica e dei Materiali”, Prima conferenza della ricerca del Dipartimento di Ingegneria Civile, Ambientale e Architettura (DICAAR), Cagliari (Italy) 2017.

105.S

“Il contributo della Sardegna all’aerospazio”, SulciScienza 2017, Carbonia (Italy) 2017.

106.S

“Il Distretto AeroSpaziale della Sardegna: risultati e obiettivi futuri”, Sarcidano Festival Scienze, Isili (Italy) 2017.

107.S

“Aeronike Srl e Distretto AeroSpaziale della Sardegna Scarl acquistano le quote della SO.GE.A.OR SpA”, Press Conference at the Fenosu Airport, Oristano (Italy) 2017.

108.S

“I quattro mori esplorano lo spazio. L’esperienza isolana del DASS”, Rivista 48^a Settimana Sociale, 2017

109.S

“Il DASS punta di diamante del rinascimento spaziale italiano”, intervista a Space Renaissance, <https://spacerenaissance.it/> (2017)

110.S

“Il Distretto Aerospaziale della Sardegna”, Le opportunità commerciali e di investimento industriale che la Tailandia offre nel settore dell’industria aerospaziale, Cagliari, Italy (2018).

111.S

“Sardinia UAV Test Range e progetti collegati”, Roma Drone Campus, Roma, Italy (2018).

112.S

“Reactive and non-reactive spark plasma sintering of ultra high temperature ceramics and related applications”, Spring school “Materials Science under Extreme Conditions (XTRMAT-2018) funded by European commission through the European project “SUPERMAT”, Bordeaux, France (2018).

113.S

“Il contributo del DASS allo sviluppo dell’aerospazio in Sardegna”, Rotary Club Cagliari / Nord, Cagliari, Italy (2018).

114.S

“Turismo e tecnologia sul territorio”, Rete mediterranea – fare impresa sul territorio, Cagliari, Italy (2018).

115.S

“The contribution of the Sardinian AeroSpace District to Mars to Earth paradigm”, Mars-to-Earth Conference, Milan, Italy (2018).

116.S

“The contribution of the Sardinian AeroSpace District to the new Italian Renaissance”, II Congress Space Renaissance, Bologna, Italy (2018).

117.S

“The contribution of the Sardinian AeroSpace District to space exploration”, 50th anniversary of the movie “2001: a space odyssey”, Cagliari, Italy (2018).

118.S

“Aerospace perspectives: the Sardinian AeroSpace District experience”, Seminar at the Enna– Kore University, Enna, Italy (2018).

119.S

“Ilmenite enrichment of lunar regolith to extract oxygen and for production of physical assets”, ESA Workshop: Towards the Use of Lunar Resources, Noordwijk, the Netherlands (2018).

120.S

“Aerospace contribution to precision agriculture”, Round Table, SINNOVA 2018, Cagliari, Italy (2018).

121.S

“Innovation project. Innovative tenders in aerospace”, Seminario Sportello Appalti Imprese della Regione Sardegna, Cagliari, Italy (2018).

122.S

“The Sardinian AeroSpace District activities from October 2013”, I primi cinque anni del DASS - Una (breve) storia di futuro, Cagliari, Italy (2018).

123.S

“BAT project presentation”, with the participation of Ministry of Defense E. Trenta as representative of the Italian government and the Prime Minister of Malta Republic J. Muscat, Cagliari, Italy (2019).

124.S

“The DASS project”, PISQ (Perdasdefogu), Italy (2019).

125.S

“Innovation project. Innovative tenders in aerospace”, Seminario Sportello Appalti Imprese della Regione Sardegna, Oristano, Italy (2019).

126.S

“Chemical engineering in the future factory”, University of Cagliari’s orientation days, Cagliari, Italy (2019).

127.S

“The aerospace sector in Sardinia”, Aerospazio Scuola e Territorio: obiettivo sviluppo, Calangianus, Italy (2019).

128.S

“Possible strategies and collaborations for space exploration”, Shareholders’ meeting of Emilia-Romagna’s aerospace district, Bologna, Italy (2019).

129.S

“The aerospace sector in Sardinia”, Seminario: Profili giuridici dell’automazione nei trasporti, Cagliari, Italy (2019).

130.S

“The aerospace sector in Sardinia”, Round table “Innovation and network development”, organised by CISL, Cagliari, Italy (2019).

131.S

“Round table at the event for the 50th anniversary from the first landing of human beings on the Moon”, organized by Sardinian AeroSpace District, Cagliari, Italy (2019).

132.S

“Round table on the role and activities of Italian aerospace districts”, XXV International Congress of Aeronautics and Astronautics, Rome, Italy (2019).

133.S

“The districts system and related international projects”, Convegno Internazionale “Autonomia e responsabilità nella gestione della crisi”, Cagliari, Italy (2019).

134.S

“From Deep Learning to quantistic artificial intelligence” - dialogo con Enrico Prati, Sinnova 2019, Cagliari, Italy (2019).

135.S

“Circular economy in the aerospace sector”, Convegno Economia Circolare e EoW, Cagliari, Italy (2019).

136.S

“Aerospace in Sardinia and its UAV Test Range”, Investing in Italian aerospace industry – The Italian trade agency as onestop shop for investment promotion, Aerospace & Defence Meetings, Turin, Italy (2019).

137.S

“Aerospace in Sardinia”, Seminar “Scuola Territorio e Innovazione” organized by Istituto Istruzione Superiore Don Gavino Pes, Calangianus, Italy (2020).

138.S

“Presentation of the Avio SpA Space Propulsion Test Facility investment at PISQ”, Press Conference hosted by the President of the Sardinian Regional Government, Cagliari, Italy (2020).

139.S

“Presentation of the SMS (Small Mission to MarS) project”, Space programs in the framework of the regional development strategies, Naples, Italy (2020).

140.S

“Experimental analysis and modeling of microalgae-based technology”, International Conference & Trade Show on aquaculture, shell fish farming and fishing industry, Pordenone, Italy (2020).

141.S

Webinar in the framework of SIOS2020 with the Rectors of the University of Cagliari and Sassari (2020).

142.S

R. Orrù, R. Licheri, S. Montinaro and **G. Cao**, “Novel processes for the synthesis and densification of Ultra-High Temperature Ceramics”, *Compositi*, **57**, 36-39 (2020).

143.S

“Security Awareness Seminars”, Press Conference hosted by the Cagliari Prefect Cagliari, Italy (2020).

144.S

“Sardinia towards UNESCO for the protection of Nuraghi settlements in Sardinia”, Press conference hosted by the Sardinia AeroSpace District, Cagliari, Italy (2020).

145.S

“CRS4’s 30th anniversary”, Press conference hosted by CRS4, Cagliari, Italy (2020).

146.S

“A sustainable mobility for green territories”, Webinar hosted by Matex TV and promoted by Opificio Innova, Italy (2020).

147.S

“The digital tourism promotion strategy in Sardinia”, Webinar hosted by the Tourism Responsible of the Sardinia Regional Government, Italy (2020).

148.S

“The innovation ecosystem in Sardinia”, Webinar hosted by Matex TV and promoted by Opificio Innova in collaboration with Italian-Arab Cooperation Chamber, Italy (2020).

149.S

“The aerospace sector and the scientific research for the territory development” Webinar "Impact Sardegna" hosted by School of Politics, Italy (2021).

150.S “Collaboration agreement between CRS4 and Tolo Green for microalgae cultivation at Arborea (OR) plant and Dubai’s Expo”, Press conference hosted by CRS4, Cagliari, Italy (2021).

151.S

“An overview on CRS4 and DASS”, Seminar for the scientific high school Leonardo da Vinci, Lanusei, Italy (2021).

152.S

“How to raise the Tortolì airport infrastructure”, Webinar round table organized by Consorzio Industriale Provinciale dell'Ogliastra, Tortolì, Italy (2021).

153.S

“Fireside Chat: CRS4, presente e futuro”, Speaker at SIOS 2021 Sardinia Edition, Cagliari, Italy (2021).

154.S

“The 2021 Space Renaissance Congress”, Keynote speaker at the opening ceremony (2021)

155.S

“CRS4’s projects and research activities for the energy transition” Workshop – Contributi per una roadmap per la transizione energetica della Sardegna, Carbonia, Cagliari, Italy (2021).

156.S

Generazione E project presentation, Workshop “Space propulsion – Future scenarios for the access to space”, Villaputzu, Cagliari, Italy (2021).

157.S

“Presentation of the filed patent: Process and kit to investigate microgravity effect on animal/vegetable cells under extraterrestrial cultivation conditions and cultivation process thereof to sustain manned space missions”, Press conference hosted by University of Sassari, Sassari, Italy (2021).

158.S

“Participation as invited speaker at the Forum Space 4 Sustainability. Research, design and technologies to and from space”, Expo 2020, Dubai, United Arab Emirates (2021).

159.S

“The aerospace sector and the scientific research for the territory development”, invited talk hosted by School of Politics, Cagliari, Italy (2022).

160.S

“Participation as invited speaker at the presentation of the Italian Space Agency Virtual District”, Cagliari, Italy (2022).

161.S

“Participation as invited speaker at the Gravitas Fest organized by INFN”, Cagliari, Italy (2022).

162.S

“Participation as invited speaker at the event Archeologika 2022 – Interdisciplinary: science and technology for archeology”, Cagliari, Italy (2022).

163.S

“Participation as invited speaker at the event European Research Project Limediat”, Cagliari, Italy (2022).

164.S

“Participation as invited speaker at the event Andalus de Cultura”, Cagliari, Italy (2022).

165.S

“Participation as organizer and speaker at the event Prize CRS4 Giovani Ricercatrici 2022”, Cagliari, Italy (2022).

166.S

“Participation as invited speaker at the event AgriVerso Israel meets Sardinia”, Cagliari, Italy (2022).

167.S

“Participation as invited speaker at the event Sardinia Innovation Awards”, Cagliari, Italy (2022).

168.S

“Space system engineering and Security awareness Master titles delivery”, Cagliari, Italy (2023).

169.S

Invited speaker at Rotary to present “Il contributo del CRS4 allo sviluppo della Sardegna”, Cagliari, Italy (2023).

170.S

Invited speaker at the Aerospace Festival to present “The Sardinian AeroSpace District”, Olbia, Italy (2023).

171.S

Chairman of the Round Table “The Italian contribution to human and robotic space exploration” at the Aerospace Festival, Olbia, Italy (2023).

172.S

Invited speaker at the event organized by Caritas “Describe the territory – The working activities foreseen”, Cagliari, Italy (2023).

173.S

Invited speaker at SIOS 2023 Sardinia Edition, Cagliari, Italy (2023).

174.S

Invited speaker at 'Be In-Time on Mars' Summer School, Alghero, Italy (2023).

175.S

Invited speaker at the Round Table “Innovation and research”, 50 Years Confapi Sardegna, Arborea, Italy (2023).

176.S

Invited speaker at Made in Inail – Prevention Forum “The CRS4 contribution on prevention strategies”, Cagliari, Italy (2023).

177.S

Invited speaker at Bank of Italy’s Sardinia annual assessment, Cagliari, Italy (2023).

178.S

“Space manufacturing in-situ and Small mission to Mars”, Press conference hosted by Stampa Romana, Roma, Italy (2023).

179.S

Participation at the round table of the event “From Earth to the future of space exploration”, Sassari, Italy (2023).

180.S

Participation at the event PON Ricerca e Innovazione to present the project “Generazione E”, Cagliari, Italy (2023).

181.S

A. Mameli and **G. Cao**, “Le attività STEM del CRS4 nelle scuole dell’infanzia e primarie della Sardegna”, *Education 2.0*, **102** (2023)

182.S

“The activities of Distretto AeroSpaziale della Sardegna”, NASA Space Apps, Cagliari, Italy (2023).

183.S

“DASS: the first ten years”, Decennale del Distretto AeroSpaziale della Sardegna, Cagliari, Italy (2023).

184.S

“Innovation and sustainability”, Giornate BitAgorà, Pula (CA), Italy (2023).

185.S

“The contribution of CRS4 to the Unesco Tentative List”, La Sardegna verso l’Unesco, Cagliari, Italy (2023).

186.S

“Small mission to Mars”, Seminar at Banca Intesa Innovation Centre, Torino, Italy (2023).

187.S

“The first ten years of DASS”, Seminar at Lutec, Portoscuso (CA), Italy (2023).

188.S

“Spatial applications and advanced research”, Opificio Innova Event, Cagliari, Italy (2023).

189.S

“The first ten years of DASS”, Presentation at Drons and Space Conference, Sassari, Italy (2024).

190.S

A. Mameli and **G. Cao**, “The CRS4 Approach to STEM in Pre- and Primary Schools”, *Technology and Engineering Education – Bringing STEM to Life*, **1/5**, 34-39 (2024).

191.S

“The Sardinia AeroSpace District”, Presentation at the Aerospace Festival, Olbia, Italy (2024).

192.S

“The Sardinia AeroSpace District”, Presentation at The Domitian Dining Club, Cagliari, Italy (2024).

193.S

“The AeroSpace District. Sardinia, an island for innovation”, Presentation at ConnEtica, Cabras (OR), Italy (2024).

193.S

“CRS4: on the capability to attract and retain talents”, Presentation in the framework of the REWARD project, Pula (CA), Italy (2024)

Main goals reached from October 2013 thus far by the Board of Directors of the Sardinia AeroSpace District (DASS) - <https://dassardegna.eu/en/>

Participation to the Italian Space Day in India	December 2024
Increase of the number of shareholders for the starting 15 to the current 34 ones	August 2024
Filing an international patent on astrobiology studies	April 2024
Started activities at the rented Tortoli Airport	November 2023
Organization of the event to celebrate the first ten years of the district	October 2023
Book edited “DASS X” to celebrate the first ten years of the district	October 2023
Presentation in Rome of the Space manufacturing in-situ project financed by MIUR with 4 MEuro	July 2023
Renewal of five-years memorandum of understanding with the Ministry of Defence	March 2023
Delivery of the parchments of the second level masters organized by the district	February 2023
New web site based on “story telling” and “user experience”	January 2022
Filing a national patent on astrobiology studies	October 2021
Lauch of the Space Propulsion Test Facility by the shareholder Avio with an investment of 30 MEuro	October 2021
Entry of the district into the corporate structure of Novitas 4.0 Foundation	December 2020
Memorandum of understanding signed with “La Sardegna verso l’Unesco” Association	October 2020
The series of seminars on "Security and Territory" with the involvement of national experts started	October 2020
Agreement signed with the Australian University of Adelaide	August 2020
Patent for Martian exploration owned by the district granted in India	April 2020

The Sardinia UAV Test Range project financed by the Sardinia Region with 1.8 MEuro starts	December 2019
The 300 MEuro Small mission to Mars project presented at COMINT	December 2019
The 8.2 MEuro BAT project involving Gem and Lion Consulting partners presented	January 2019
The Generation E project financed by MIUR with 4 MEuro presented	December 2018
Framework agreement stipulated with Eurispes	June 2018
Five-year memorandum of understanding signed with the Ministry of Defense	May 2018
The Sardinia Region issues the first tender for 12 MEuro aerospace projects	September 2017
Acquisition of 20% of the company that controls Fenosu airport	December 2017
The 700 kEuro Aerodron project starts with the training company Insignia	November 2017
Free acquisition of 2 international patents for space exploration	November 2016
Creation of the district logo by Maestro Pinuccio Sciola	March 2015
Inclusion of aerospace in the regional Intelligent Specialization Strategy	January 2015
Entry into the corporate structure of the Aerospace Technology Cluster (CTNA)	May 2014

**Main goals reached from July 2020 thus far as Sole Administrator of
Centre of Research Development and Advanced Studies in Sardinia
(CRS4) - <https://www.crs4.it/>**

Six scientific publications on international journal co-authored with Centre's
researchers and technologists December 2024

Agreement signed to contribute to the participation of the Region of Sardinia
in the expo of Osaka December 2024

Fifteen unpublished software developed with regional funds and deposited in
SIAE December 2024

First Italian hackathon on Quantum Computing dedicated to smart cities
October 2024

Event on AI ACT standards, the European Union regulation on artificial
intelligence September 2024

The balance sheet with a production value of 12,214,746 Euro was approved
July 2024

Second year of STEM activities in schools, involving 5869 children from
nursery (83) and elementary (94), 68 locations reached June 2024

First Italian company recognized by the international organization QWorld for
the dissemination of quantum computing May 2024

International patent for astrobiology studies filed April 2024

Presentation of recent developments in artificial intelligence for tourism
April 2024

Acquisition of bioinformatics skills at the state of the art
March 2024

Deposited in SIAE twenty-seven unpublished software, twenty-two of which
produced in 2023 with regional funds January 2024

Patent application granted in the field of robotics December 2023

Presentation in Rome of the Space manufacturing project in-situ financed by
MIUR with 4 MEuro Luglio 2023

First year of STEM activities in schools, involved 2375 children from
kindergartens (27) and elementary schools (39), 34 locations reached
June 2023

Acquisition of the first genomic sequencer of last generation in Italy
May 2023

Quantum computer software trademark filing	May 2023
Balance sheet in balance with production value of 10,896,001 Euro approved	April 2022
Successfully emulated a quantum computer at 30 qbit	February 2023
Delivery of the parchment of the second level masters co-organized by the center	February 2023
Restructuring of the 130-employee organization chart to improve corporate effectiveness and efficiency	February 2023
Setting of research & development objectives to be achieved using regional funds of 7.3 million: large data-processing, artificial intelligence and hpc/quantum computing	February 2023
Award for young female researchers following specific call	November 2022
The centre among the founding members of the National Supercomputing Center	July 2022
The balance sheet with a production value of 10,210,925 Euro was approved	April 2022
Recruitment of 16 precarious researchers and technologists	March 2022
Participation in the Dubai Expo	January 2021
National patent filing for astrobiology studies	October 2021
Presented the first anthropomorphic robot developed at the center	October 2021
Event to celebrate the 30th anniversary of the foundation	September 2021
Edited book “The future is close” to celebrate the 30th anniversary of the foundation	September 2021
The balance sheet with production value of 10,574,580 Euro was approved	April 2021
Signed collaboration agreement with Tolo Green for the cultivation of microalgae in the Arborea (OR) plants and at the Expo in Dubai	March 2021

Advisory committee with national experts established	February 2021
Signed collaboration agreement with the University of Sassari	January 2021
Signed collaboration agreement with Italgas for the construction of a hydrogen production plant in Sardinia	January 2021
New computer center inaugurated with 600 TeraFlops of computing speed and 6 Petabytes of storage space	January 2021
Establishment of a research group operating on quantum computers and related technologies	December 2020
Deposit of the brand of the digital operating platform "Ubiquitous Digital Platform", as a valid support for the logistics of the territories	December 2020
The 30 th anniversary of the foundation has been celebrated	November 2021
Signed the memorandum of understanding with the association "Sardinia towards UNESCO"	October 2020
Event in memory of Gianluigi Zanetti, researcher and colleague who died prematurely in 2019	September 2020
Two international patent applications filed	July 2020