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**SIMONETTA GENINATTI CRICH**  
**CURRICULUM VITAE**

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**Nationality:** Italian

**Address:**

Molecular Imaging Center  
Department of Molecular Biotechnology and Health Sciences  
University of Torino

**Education/Training:**

1993 Degree in Chemistry at the University of Torino, Italy.  
1997 PhD degree in Biochemical Science at the University of Torino.

**Employments:**

1993-1994 Project Contract at the Sorin Biomedica Company (Saluggia Torino)  
1997-1998: Postdoctoral fellowship, financed by Sorin Biomedica Company, at the University of Torino.  
1998-1999: Research Technician position at the Interuniversity Consortium of Research in Metal Chemistry in Biological Systems, registered office Piazza Umberto I, n. 1 - Bari (Italy).  
2000- September 2016: Research Technician at the Department of Chemistry and of Molecular Biotechnology and Health Sciences of the University of Torino.  
2013-2014: Contract Professor in Physical Chemistry, University of Torino.  
From 2016 (October): Associate professor in General and Inorganic Chemistry at the Molecular Biotechnology and Health Sciences of the University of Torino.

**Expertise:**

Expertise in the field of Molecular Imaging with particular interest for the set up of:

- 1) Protein based innovative nanotheranostic delivery systems;
- 2) Efficient MRI cellular labeling procedures for an early diagnosis of the pathology;
- 3) Visualization of drug delivery processes;
- 4) Development of boron containing agents for Boron Neutron Capture Therapy functionalized with MRI contrast agents for boron quantification;

The nanosized delivery systems used in her research are, for example, liposomes, polylactic and glycolic (PLGA) nanoparticles and natural proteins such as ferritin and Low density Lipoproteins (LDL) that can be loaded with both therapeutic and imaging agents. She has developed pH dependent methods to load metal ions, drugs, imaging agents in the apoferritin cavity. The other important area of her research is the development of Gd and boron containing agents for MRI guided Boron Neutron Capture Therapy for personalized treatment.

She is authors of 75 papers, 2 book chapter and co-inventor of 4 patents.

H-Index 31; citations 3713 (google scholar)

H-Index 29; citations 3115 (scopus)

**ORCID ID:** <http://orcid.org/0000-0003-2998-5424>

**Invited Conference Talks:**

- Le studium Conference: Being Smart in Coordination Chemistry: Medical Applications, Orleans (France) 26-28 September 2016.
- Zing Conference, Medicinal Chemistry of Boron Compounds; Parador de Oropesa, Oropesa, Spain; 4th– 7th October 2015
- Workshop of the Italian Cancer Society, Torino 27/06/2014
- National Cancer Research Institute Conference (UK), Liverpool 3-6 November 2013

- Seminary to the Mainz University (Germany) 14/05/2012

**Conference Talks (period 2007-2016)**

1. 17th International congress on Neutron Capture Therapy (ICNCT) University of Missouri (MU), Columbia. October 2-7 2016.
2. XLIV Congresso nazionale di chimica inorganica 14-17 settembre 2016, Padova (Italy)  
Titolo: -Protein cages as carriers for metal based theranostic agents.
3. IDentIFY Project annual Meeting 12th–13th September, 2016 Grenoble, France.
4. COST action TD1004 (Theranostic imaging and Therapy: An action to develop Novel Nanosized Systems for imaging guided Drug Delivery) Annual meeting ; 10-11 Settembre 2015, Belgrade, Serbia. Title: Innovative theranostic strategies for the combination of BNCT with MRI and Chemotherapy.
5. CONVEGNO Società italiana delle ricerche sulle radiazioni (SIRR); PAVIA 07/11/2014;  
Title: A theranostic approach based on the use of a dual boron/Gd agent to improve the efficacy of BNCT in th pulmonary metastasis treatment.
6. COST action TD1004 Annual meeting, october 3-4 2014 @ Kaya Ramada hotel, Istanbul, Turkey. Title: Cancer Stem Cells targeting for tumour therapy and diagnosis.
7. GIDRM Workshop: NMR relaxometry Principles and Applications, Università del piemonte orientale, Alessandria, 07/07/2014; Title: RELISA a quantitative relaxometric version of the ELISA test for the measurement of cell surface biomarkers based on the water proton T1 measurements.
8. Workshop della Società italiana di cancerologia, Torino 27/06/2014; Title: In vivo preclinical imaging guided therapy.
9. COST TD1004 Meeting. Atene, 1-3 settembre 2013; Title: Apoferritin loaded with Gd-HPDO3A and curcumin as a theranostic agent.
10. COST TD1004 Meeting. Torino, 17-18 February 2012, Title: MR Imaging guided NCT by a dual Gd/B agent targeted to tumor cells via upregulated LDL transporters.  
<http://www.cim.unito.it/website/COST/index.php>.
11. COST TD1004 WG1 Meeting Varsavia 27 agosto 2012 Title: Gd-loaded apoferritin: a high sensitive probe for MRI guided delivery of curcumin for acute hepatitis treatment
12. World Molecular Imaging Congress, (WMIC) Dublino, September 5-8, 2012. Title: Gd-DOTA complex functionalized with phenyl boronic acid as MRI imaging reporter of Sialic acid expression on melanoma cells.  
<http://www.wmis.org/abstracts/2012/data/start.htm>
13. International Society of Magnetic Resonance in Medicine (ISMRM) 2011, 19th annual meeting, Montral (Canada) 7-13 may 2011; Title: MR Imaging guided NCT by a dual Gd/B agent targeted to tumor cells via upregulated LDL transporters.  
<http://www.ismrm.org/11/Session45.htm>
14. FEBS, Complementary technical session: "Advances in Molecular and Functional MRI", Torino, june 26th, 2011. Title: Designing and testing of targeting and responsive probes for MRI preclinical applications.
15. Eleventh workshop on PharmacoBioMetallics, San Benedetto del Tronto, 28-30 october 2011. Title: MR Imaging guided NCT by a dual Gd/B agent targeted to tumor cells via upregulated LDL transporters. Abstract book page: 55.  
<http://portal.unicam.it/biomet11/node/3>
16. 14th Internatinal Congress Neutron capture Therapy October 25-29 2010 Buenos Aires (Argentina). Title: A Boron/Gd/LDL adduct for Imaging-guided Neutron Capture Therapy; <http://www.14icnct.com.ar/schedule.pdf>

17. 12th Bi-Annual Conference on Contrast Agents and Multimodal Molecular Imaging Mons, Belgium 19-21 may 2010. (pag 30 book of abstract, Title: Apoferritin: a natural carrier for MRI contrast agents.)  
[http://portail.umons.ac.be/en2/universite/facultes/fmp/services/service1/pages/lien\\_snr\\_mn.aspx](http://portail.umons.ac.be/en2/universite/facultes/fmp/services/service1/pages/lien_snr_mn.aspx)
18. 4th European Molecular Imaging Meeting Barcelona 27-30 May 2009; Title: A Boron/Gd/LDL adduct for Imaging-guided Neutron Capture Therapy. <http://www.e-smi.eu/index.php?id=2105>
19. European Molecular Imaging Laboratories (EMIL) Annual meeting. Leuven 1-3 giugno 2008. Title: Targeting of tumor cells with Gd-containing carriers <http://www.dimi.eu/index.php?id=1639>
20. COST Action D38 "Metal Based Systems for Molecular Imaging Applications" annual meeting
21. LUOGO E DATA: Eindhoven, Netherlands. 3-5 maggio, 2007. TITLE: MRI visualization of tumors by Gd-based probes
22. Second International Conference of European Society for Molecular Imaging, Naples, Italy, 14-15 June 2007 Title: Use of highly sensitive dual probes Gd-liposome and Gd-loaded apoferritin for targeting tumor angiogenesis for MR-visualization and drug delivery [http://www.e-smi.eu/uploads/media/Final\\_Programme\\_EMIM\\_2007.pdf](http://www.e-smi.eu/uploads/media/Final_Programme_EMIM_2007.pdf)
23. EMIL/DiMI Annual Meeting June 12th-13th, 2007 Naples, Italy  
[http://www.dimi.eu/fileadmin/user\\_upload/interim/Documents/DiMI\\_EMIL\\_AM\\_2007/Final\\_Prog\\_Naples\\_11-06-2007.pdf](http://www.dimi.eu/fileadmin/user_upload/interim/Documents/DiMI_EMIL_AM_2007/Final_Prog_Naples_11-06-2007.pdf)

#### Teaching:

- 1997. Chemistry Tutorials to the faculty of Pharmacy, University of Torino. (50 hours)
- Laboratory of Chemistry (year 2001/2002) Biotechnology department, University of Torino.
- 2011. Bioinorganic School of Siena for PhD students, Lesson untitled: Highly Sensitive Probes for MR-Molecular Imaging Applications.
- 2006-2009. Teacher in practical and Theoretical lessons European School "Dimi" Diagnostic Molecular Imaging Consortium. Technology and Training Platforms: TTP 3 : Development of Imaging Probes and Test in Animal Models.
- 2009-2011 Teacher in practical and Theoretical lessons of the EU master in Molecular Imaging (EMMI), Erasmus Intensive Programme "Design, Synthesis and Validation of Imaging Probes",
- 2012-2013. Teacher in practical and Theoretical lessons of the EU master in Molecular Imaging (EMMI, [www.e-mmi.eu](http://www.e-mmi.eu)), Intensive Programme "Probes and Models for Imaging Diseases and Therapy".
- 2013-2014 – Contract Professor in Physical Chemistry, University of Torino
- 2016-2017 Supramolecular Chemistry; Master in Molecular Biotechnology and Molecular Imaging; School of Medicine
- 2016-2017 Techniques for structural analysis; Degree in Biotechnology, School of Medicine
  
- 2016-2017 General and Inorganic Chemistry; Degree in Optometry and Optical; School of Natural Sciences.

- She has been supervisor of many master degrees in Chemistry, Pharmacy and Biotechnology.

#### **Society Memberships**

1. She is member of the Interuniversity Research Consortium for the Metal Chemistry in Biological Systems (CIRCMSB).
2. Member of European Society of Molecular Imaging (ESMI).
3. Member of GIDRM (Gruppo Italiano Discussione Risonanze Magnetiche, ESMI (European Society Molecular Imaging))

#### **Professional and Institutional Activities:**

1. She is in the researcher team working at the **Imaging Molecular Center** and Eurobioimaging of University of Torino ; <http://www.cim.unito.it/website/staff.php>
2. She is co-editor of the special issue of the Israel Journal of Chemistry entitled MR-Molecular Imaging.
3. 2012 – 2016: Member of **EU COST Action TD 1004**: “Theranostics imaging and therapy: an action to develop novel nanosized systems for imaging-guided drug delivery”
4. She commonly acts as reviewer of many journals (Contrast Media Mol. Imaging; Plos One.; Biomacromolecules, ACS Applied Materials & Interfaces, Journal of Medicinal Chemistry, Molecular Pharmaceutics, Journal of Hepatology, Molecules, Bioconjugate Chemistry, The European Molecular Imaging Meeting(2015-2016)).
5. 2003–2011: Member of **EU COST Actions D18 e D38**: “Lanthanide Chemistry for Diagnosis and Therapy” e “Metal-Based Systems for Molecular Imaging Applications”
6. 2011/2012 Collaboration contract with the Spin off CAGE Chemicals Srl (via Bovio 6 Novara).
7. 23/02/2004 - 06/02/2012 Project collaborator of the Consorzio Interuniversitario di Ricerca in Chimica dei Metalli nei Sistemi Biologici - Piazza Umberto I, 1 – Bari.

#### **Conference Organization:**

She is member of ISNCT (International Congress on Neutron Capture Therapy) Executive Board (2016-2020)

#### **Awards:**

- Best poster award at the European Molecular Imaging Meeting (Technology and Methodology session) in 2013.
- Head of the project named RELISA at the START CUP Piemonte e Valle d’Aosta 2014 (top ten finalist).

#### **Projects:**

- EMIL project : Network of excellence assembling European Molecular imaging laboratories for combating cancer. (FP6) contract number LSHC-CT-2004-503569; 01/07/2004 (Role in the project: researcher)
- DIMI project (FP6) Ctr. n° LSHB CT-2005-512146 title "Diagnostic Molecular Imaging" con 2005-2010 (Role in the project: researcher)
- Bando Converging technologies 2007 (Piedmont Region) "Nano-sized Systems for Innovative Biotechnological Applications: Imaging-guided Therapy (Nano-IGT)" 2009-2012; (Role in the project: Work Package leader)
- Piattaforma Regionale di Imaging Molecolare dal titolo "Procedure Innovative di Imaging Molecolare per la Diagnostica e il Monitoraggio Terapeutico " 2009-2012; (Role in the project: researcher)
- FIRB project prot. RBIP06293N dal titolo "Sviluppo di metodi innovativi nel campo della diagnostica per immagini" 2007-2010; (Role in the project: researcher)

- Meditrans An Integrated Project funded by the European Commission under NMP thematic priority of the Sixth Framework Programme. Ctr n. NMP4CT-2006-026668 title "Integrated Project Targeted Delivery of Nanomedicine" 2007-2011. (Role in the project: researcher)
- PRIN05 project prot. 2005039914\_001 title "Sonde ad alta sensibilità per applicazioni di imaging molecolare mediante risonanza magnetica" 2006. (Role in the project: researcher)
- PRIN07 project prot. 2007W7M4NF dal titolo "Sonde "intelligenti" a base di 24 Partecipante al N. Progr. 19504 complessi di Mn(II) per applicazioni innovative nel campo della diagnostica MRI" 2008-2010. (Role in the project: researcher)
- PRIN09 project prot. 2009235JB7\_001 dal titolo: Nanosistemi per nuove applicazioni terapeutiche guidate dalla RMI. 2011-2013 (Role in the project: researcher)
- Regione Piemonte. Bando: POR-FESR 2007/2013 - ASSE I – INNOVAZIONE TRANSIZIONE PRODUTTIVA Attività I.1.3 Innovazione e P.M.I. Aiuti ai soggetti aggregati ai poli di innovazione. Progetto: Athimag; Nanoparticelle lipidiche solide per l'imaging di placche aterosclerotiche (Role in the project: researcher)
- PRIN12 project prot. 2012SK7ASN dal titolo: Metodologie chimiche innovative per strategie molecolari avanzate in biomedicina. 2014-2017 (Ruolo nel progetto: Ricercatore).
- UE HORIZON 2020 - GRANT N. 668119 - IDENTIFY - Development of new diagnostic tools and technologies: in vivo medical imaging technologies

**Patents:**

- 1) S. Aime, C. Cabella, S. Geninatti Crich, V. Mainero, New agents for magnetic imaging methods. N. Progr. 19504 International Publication Number WO 03/103722 A1. Publication date 18.12.2003
- 2) S. Aime, S. Geninatti Crich, L. Lattuada, Procedures of cellular labelling with paramagnetic complexes for MRI applications. International Publication Number WO 2004/009134 A1. Publication date 29.01.04
- 3) AIME S, BARGE A, ESPOSITO G, FORNI G, GENINATTI CRICH S, LANZARDO S, TEI L (2006). Paramagnetic metal complexes for the MRI visualization of internalized polynucleotides. WO2005EP09660 20050908, BRACCO IMAGING SPA;
- 4) Uri Rapoport, Camilla Cavallotti, Simonetta Geninatti Crich; MEANS FOR USING PARAMAGNETIC AGENTS FOR IN VITRO DIAGNOSTIC APPLICATIONS negli Stati Uniti (173H91-US) in Cina (CN 103760186A) e in Germania (DE 202013103969.1).