

CURRICULUM VITAE

June

2009

This document presents Luismar Porto's broad education and career experience. It shows his interests in bringing the fields of physical and biological sciences to the engineering territory where his education was rooted. The convergence of biological/biomedical technologies with information technology and process engineering fundamentals is at the realm of his "genomic engineering" background.

**Luismar  
Marques  
Porto**

**EDUCATION** Luismar M. Porto received his Bachelors degree in Chemical Engineering from Universidade Regional de Blumenau, and Masters degree in Physical Chemistry from Federal University of Santa Catarina-UFSC (Florianópolis, SC)/COPPE-UFRJ (Rio de Janeiro, RJ), Brazil, and then his Ph.D. in Chemical Engineering from Northwestern University, Evanston, IL, USA. His Master's thesis dealt with catalyst tests and development to produce long chain oxygenates and hydrocarbons from synthesis gas. His doctoral thesis concentrated on the study of catalyst deactivation and packed bed reactor modeling using sulfur and coke-generating compounds on benzene hydrogenation.

**POST-DOCTORAL TRAINING** More recently, Prof. Porto has spent one year as a post-doc at the Chemical Engineering Department at the University of Queensland - Brisbane, Australia, where he has acquired basic skills in the area of Biological and Biomedical Engineering. He now holds an appointment as Visiting Scientist/Scholar at the Massachusetts Institute of Technology, at the Harvard-MIT Division of Health Sciences & Technology, Biomedical Engineering Center, Cambridge, MA, USA.

**LABORATORY** Prof. Porto is currently an Associate Professor of the Federal University of Santa Catarina (UFSC), one of the leading academic and research institutions in Brazil. At UFSC, Prof. Porto was part of the group that has founded the Chemical and Food Engineering Department, where he has served as its Head of Department, the Masters Program in Chemical Engineering, which he has served as a Chairman, and the Doctoral Program in Chemical Engineering. At UFSC he supervises the Integrated Technologies Laboratory ([www.intelab.ufsc.br](http://www.intelab.ufsc.br)) and leads the Genomic Engineering Group, an inter-institutional research group with interests in advanced biotech products. He is also a collaborator of the Human Resources Program in Gas & Oil, a joint program with the Mechanical Engineering Department at UFSC, funded by the Brazilian National Oil Agency (ANP) and Petrobras, and at the Materials Sciences and Engineering Graduate Program.

**TEACHING** Prof. Porto's teaching interests reflect his broad education in virtually all areas of Chemical Engineering. During his career, Prof. Porto has taught the following undergraduate courses: Introduction to Chemical Engineering, General Technological Chemistry, Equipment Design, Introduction to Chemical Processes, Process Control and Simulation, Chemical Industries, Petrochemistry, **Chemical Reaction Engineering**, Transport Phenomena, **Thermodynamics**, Process Design, **Introduction to Genomic Engineering**; in the graduate program (Masters and PhD), the following courses: **Thermodynamics**, Heterogeneous Chemical Reactors, Fundamentals of Surface Chemistry and Heterogeneous Catalysis, Engineering and Design of Chemical Reactors, Chemical Process Kinetics, **Genomics and Bioinformatics**, **Metabolic Engineering**, Catalyst Deactivation, **Fundamentals of Genomic and Biomedical Engineering**, Fundamentals of Cellular and Molecular Biology for Biochemical Engineering, **Tissue Engineering** (Courses in **bold** have been taught for at least three times).

**RESEARCH** Prof. Porto's research interests combine his scientific and engineering training and expertise. His work falls in a variety of general categories including chemical reaction engineering, thermodynamics, and biological/biomedical problems. For the last seven years Prof. Porto has also been involved in research and educational projects that bring post-genomics information and technologies to the field of biological and biomedical engineering. Particular efforts have been done by his group in order to understand fundamental aspects of gene structures and organization in bacterial biopolymer synthesis and hydrogen production, the role of transcription factors in regulating protein expression, and how secondary metabolite production may be optimized using metabolic engineering and other systems biology tools. In the Federal University of Santa Catarina (UFSC), and now at Harvard-MIT, Prof. Porto is leading an interdisciplinary team that is interested in several tissue engineered biomedical technologies, including novel designs of drug-eluting stents, based on pharmacogenomics data and computational fluid dynamics (CFD) analyses.

**BIOTECH / BIOMED** On the biotechnology front, interests ranges from hydrogen production by engineered bacteria, micro/nano bacterial cellulose fibers and composites for biomedical applications (Patent pending) and polyhydroxyalkanoate production. Prof. Porto has published more than one hundred scientific works in international journals and conference proceedings. He has been supervisor of post-docs, PhD theses (ten), Masters theses (twenty) and more than 40 undergraduate students. Prof. Porto has been invited to several distinguished talks and conferences, and has received several awards and academic recognition for his work on behalf of the chemical engineering education.

**HONORS** Recently he was the major invited speaker at the Brazilian National Education Conference in Chemical Engineering (ENBEQ), the **first** Brazilian honored with such invitation in more than 20 years. Also recently he was honored by the Class of 2007 as "The Name of the Class" of the Chemical Engineering undergraduate program at UFSC. Last year his group has won the X-Meeting 2007 Best Poster Award. The work on "Theoretical and Computational Modeling of Paclitaxel (Taxol®) Action on the Cell Cycle of Smooth Muscle Cells" was presented during the 3rd International Conference of the Brazilian Association of Bioinformatics and Computational Biology and received "recognition of an outstanding presented work".

**CONSULTING** Prof. Porto has been a consulting professional for several companies in the area of chemical engineering processes, including BRASKEM S.A. (NYSE:BAK), a leading petrochemical company in South America, and BUNGE ALIMENTOS S.A. (NYSE:BG), a leading producer of food, and grains such as soy and wheat. In his "free" time he enjoys playing with Internet servers (Windows and Linux) and web developments (wikis and CMS). He has experience programming in FORTRAN, C/C++, Visual Basic, MATLAB, PHP/MySQL, and some exposure to CFX, OpenFOAM and other Computational Fluid Dynamics and general software.



Cambridge, MA, USA, June 2009.

## CURRICULUM VITAE

### Luismar Marques Porto

## CAREER OBJECTIVE

To work towards the integration between fundamental engineering concepts and biological/biomedical technologies, through the application of mathematical modeling, molecular sciences, and applied genomics

### Personal Data



#### Place of Birth

Tubarão, SC, Brazil  
51, married, two children  
Website: [www.intelab.ufsc.br](http://www.intelab.ufsc.br)  
Institutional e-mails:  
✉ [luismar@mit.edu](mailto:luismar@mit.edu)  
✉ [luismar@intelab.ufsc.br](mailto:luismar@intelab.ufsc.br)

#### Current Address

2386 Massachusetts Avenue, Apt. 2  
Cambridge, MA 02140, USA  
Phones: +1-617-714-4357 (home)  
+1-617-708-6769 (mobile)

### Current Professional Status

Visiting Scientist at **Harvard-MIT**, HST Division, Cambridge, MA, USA  
Associate Professor, Federal University of Santa Catarina (UFSC), Florianópolis, Brazil  
Research Fellow of the Brazilian National Research Council (CNPq),  
Ministry of Science & Technology, Brasília, Brazil  
Genomic Engineering Group Leader, CNPq/UFSC  
Integrated Technologies Laboratory Supervisor, UFSC

### Education / Postdoctoral Training

2007 – 2010

Visiting Scientist/Research Scholar  
Biomedical Engineering Center  
**Massachusetts Institute of Technology**  
**Harvard-MIT** Health Sciences & Technology Division  
Cambridge, MA, USA (<http://hst.mit.edu>)  
Field: Tissue engineering of cardiovascular genomics  
R&D Project:  
Genomics Considerations in the Development of Advanced Drug-Eluting Stents  
Project collaborator: Elazer R. Edelman, MD, PhD, FACC

2001 – 2002

Post-doctoral fellow/Visiting Scholar  
Chemical Engineering Department

	<p><b>The University of Queensland</b>, Brisbane, Qld, Australia (<a href="http://www.uq.edu.au">www.uq.edu.au</a>)                  Field: Biological &amp; Biomedical Engineering                  Project: Biological Engineering – The Living Map Project                  Project collaborator: Lars K. Nielsen, PhD</p>
1989 – 1993	<p>PhD in Chemical Engineering  <b>Northwestern University</b>, Evanston, Illinois, USA (<a href="http://www.northwestern.edu">www.northwestern.edu</a>)                  Field: Chemical Reaction Engineering                  Thesis: Co-Deactivation of a Fixed Bed Reactor. Poisoning of a Nickel/Kieselguhr Catalyst by Thiophene and 1-Propanethiol                  Thesis director: John B. Butt, PhD</p>
1982 – 1987	<p>Master of Science in Physical Chemistry / Chemical Engineering  <b>Federal University of Santa Catarina</b>, UFSC, Florianópolis, SC (<a href="http://www.ufsc.br">www.ufsc.br</a>) /                  COPPE-<b>Federal University of Rio de Janeiro</b>, RJ, Brazil (<a href="http://www.coppe.ufrj.br">www.coppe.ufrj.br</a>)                  Field: Heterogeneous Catalysis (Liquid fuels from coal)                  Thesis: Study of Fused Iron Catalysts for the Fischer-Tropsch Synthesis (Estudo de Catalisadores de Ferro Fundido para a Síntese de Fischer-Tropsch) (in Portuguese).                  Thesis directors: Nivaldo Cabral Kuhn, PhD &amp; Martin Schmal, Dr. rer. Nat.</p>
1977 – 1980	<p>Bachelor's degree in Chemical Engineering  <b>Regional University of Blumenau</b>, FURB, Blumenau, Santa Catarina, Brazil (<a href="http://www.furb.br">www.furb.br</a>)                  Awarded 1<sup>st</sup> place among all engineering graduating students</p>

<b>Languages</b>	<p>English (fluent) / Portuguese (native) / Spanish (fair) /Basic knowledge of German and French</p>
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<b>Areas of Expertise and Current Research</b>	<p><b>Tissue engineering / Biomedical engineering</b></p> <ul style="list-style-type: none"> <li>Development of novel biopolymers for 3D cell culture and drug delivery</li> <li>Control of angiogenesis using plant extracts and <i>in vitro</i> &amp; <i>in vivo</i> models</li> <li>Bone and cartilage tissue engineering</li> <li>Cardiovascular pharmacogenomics and CFD modeling and simulations</li> <li>Drug eluting stents (DES) development</li> </ul> <p><b>Systems Biology / Bioinformatics / Metabolic and regulatory networks</b></p> <ul style="list-style-type: none"> <li>Hybrid Petri Nets for tryptophan and violacein biosynthesis</li> <li>Pathway/Genome database for <i>Chromobacterium violaceum</i></li> <li>3D-modeling of proteins by homology</li> </ul>
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Development of metabolic engineering toolboxes  
 Comparative genomics

**Genetic engineering / Molecular biology**

Production of polyhydroxyalkanoates (PHB, PHB-co-PHV, etc)  
 Production of violacein (antitumoral and antichagasic drug)  
 Production of bacterial cellulose films and hydrogel scaffolds  
 Hydrogen GM bacterial fuel cell development  
 DNA-protein interactions in the Fragile X syndrome genomic region

**Reaction Engineering / Thermodynamics**

Catalyst deactivation / Enzyme kinetics  
 Reactor modeling, design and simulation  
 Heterogeneous reactor thermodynamics and CFD analyses  
 Thermodynamics of chemical and biological systems

**Currently  
 Funded  
 Research  
 Projects**

Participation in several research projects as P.I. and as collaborator in the areas of molecular biology, metabolic engineering, and tissue engineering at UFSC and other institutions in Brazil, Australia, and United States.

**Participation as Principal Investigator (Last 4 years)**

- 2009 – date Three-dimensional vascularized bacterial cellulose for applications in tissue engineering and regenerative medicine.
  - Grant from the National Research Council, CNPq no. 500555/2009-5
- 2007 – 2010 Genomics Considerations in the Development of Advanced Drug-Eluting Stents
  - Grant from the the National Research Council, CNPq no. 200804/2007-3
- 2007 – date Development and pre-clinical studies of biopolymer products associated with active biomolecules extracted from *Aloe vera* L.
  - Grant from FINEP/Ministry of Science and Technology of Brazil
- 2007 – date Isolation, identification and quantification of aloin obtained from *Aloe vera*.
  - Grant from FAPESC / State of Santa Catarina Science and Technology Foundation
- 2007 – date Metabolic engineering of bacteria for hydrogen production from biodiesel residues.
  - Grant from the National Research Council, CNPq no. 486091/2006-6
- 2005 – 2008 Development of bacterial polyhydroxyalkanoates for medical applications.
  - Grant from the National Research Council, CNPq no. 507329/2004-0

- 2004 – 2008 Molecular tissue engineering: development of biocompatible biopolymers produced by genetically modified bacteria.
- Grant from the National Research Council, CNPq no. 505675/2004-8

## Consulting Experience

### Governmental Consulting

- 1994 – date *Ad hoc* consulting of research projects for the Brazilian National Research Council (CNPq) ([www.cnpq.br](http://www.cnpq.br))
- 1996 – date *Ad hoc* consulting of research projects for the State of Santa Catarina Research Foundation ([www.funcitec.rct-sc.br](http://www.funcitec.rct-sc.br))
- 1989 Task force member of the Natural Gas Special Committee for the Santa Catarina State Government. The committee report recommended in the implantation of natural gas as part of the regional energy matrix. In 1994 the Santa Catarina State Gas Company, SCgás ([www.scgas.com.br](http://www.scgas.com.br)) was founded and, in 1999, the Bolivia-Brazil pipeline (GASBOL), the longest natural gas pipeline in South America started its operation.

### Industrial Consulting

- 2007 Member of the Santa Catarina State Board of Professional Engineers (Inspector of CREA-SC, [www.crea-sc.org.br](http://www.crea-sc.org.br))
- 2005 – 2007 Consulting on mathematical modeling and simulation of industrial processes for Bunge Alimentos S.A. ([www.bunge.com](http://www.bunge.com)). Bunge Alimentos is part of the Bunge Corporation (NYSE:BG). The company has over 450 facilities in 32 countries and is headquartered in New York, USA
- 1999 – 2000 Consulting on vegetable oils and fats processing for a major Italian company technical representative for South America, developing adsorbents and processes that resulted in more effective bleaching processes
- 2004 Training of process engineers in the field of chemical reaction engineering of the largest petrochemical company in Latin America, Braskem S.A. (NYSE:BAK), in Maceió, State of Alagoas. Braskem figures among the five biggest Brazilian private companies ([www.braskem.com.br](http://www.braskem.com.br))
- 2002 Assisting *ad hoc* group in preparing educational project for the training of

thousands of operators (1620 hours distance learning education program) for petroleum refining and petrochemical industries, Petrobras S.A. (NYSE:PBR) ([www.petrobras.com](http://www.petrobras.com)). Petrobras has 109 production platforms and 15 refineries. The company has various subsidiaries, including Petroquisa which is engaged in the production, commercialization, distribution, import and export of chemical products

### Educational & Research Consulting

2009 Research project evaluator for the Federal University of Rio Grande do Norte (UFRN), Natal, RN, Brazil

Educational consultant for the State of Santa Catarina Educational Council (Conselho Estadual de Educação), for the accreditation of the Chemical Engineering undergraduate program at UNIVILLE, Joinville, SC, Brazil

Development of new strategies for the treatment of traumatic spinal cord lesion. P.I. Dr. Janices Köpp, funded by FAPESC, State of Santa Catarina Research Foundation.

2007 Research project evaluator for the Federal University of Rio Grande do Norte (UFRN), Natal, RN, Brazil

2000 – 2002 Educacional consultant for Fundação CESGRANRIO, a major educational foundation in Rio de Janeiro, Brazil, ([www.cesgranrio.org.br](http://www.cesgranrio.org.br))

Educational consultant for the National Institute of Educational Studies and Research (INEP) ([www.inep.gov.br/idiomas/ingles](http://www.inep.gov.br/idiomas/ingles))

1987 – date *Ad hoc* reviewer and evaluator of educational projects and research proposals for several institutions in Brazil, including CNPq, CAPES, CESGRANRIO Foundation, Ministry of Education, Ministry of Science and Technology, and Science & Technology Foundations of several Brazilian States

1994 – date *Ad hoc* reviewer of national and international journals, including Industrial & Engineering Chemistry Research, Journal of the American Oil Chemists Society, Brazilian Journal of Food Technology, Brazilian Journal of Chemical Engineering, and Latin America Applied Research.

1998 –1999 Educational consultant for the Ministry of Education of Brazil (MEC, [www.mec.gov.br](http://www.mec.gov.br)) for Chemical Engineering Programs' accreditation

## Academic Record

**Graduate and Undergraduate Projects Supervised** (Full list given ahead)

**1996 – 2007 Completed (defended theses and dissertations)**

- 01 Post-doctoral fellow project supervisor
- 09 Doctoral (PhD) thesis
- 22 Master thesis
- 14 Monographies
- 33 Scientific Initiation (undergraduate lab training)
- 09 Other undergraduate projects

**2007 Current (on-going projects)**

- 01 Post-Doctoral
- 01 Doctoral (PhD)
- 05 Masters
- 02 Scientific Initiation (undergraduate lab training)

Notice: Current research graduate projects are in the areas of tissue engineering, systems biology, Fragile-X syndrome, and GM bacterial hydrogen fuel cells

**Major Educational Projects**

2002 Founder of the Genomic Engineering Group, an official national research group, sponsored by CNPq ([www.geg.ufsc.br](http://www.geg.ufsc.br))

2002 Founder of the Integrated Technologies Laboratory – IntelLAB, an academic laboratory devoted to integrate multidisciplinary research ([www.intelab.ufsc.br](http://www.intelab.ufsc.br))

1993 – 1996 Co-Founder of the Master’s and Doctoral Program in Chemical Engineering (CPGENQ) at the Federal University of Santa Catarina (UFSC) ([www2.enq.ufsc.br/cpgenq/english/home\\_e1.html](http://www2.enq.ufsc.br/cpgenq/english/home_e1.html))

1982 – 1984 Co-Founder of the Chemical and Food Engineering Department at the Federal University of Santa Catarina (UFSC) ([www.enq.ufsc.br](http://www.enq.ufsc.br))

**Research & Development, Commercial and Other Academic Projects**

2003 – date Post-genome Bioinformatics: Developing the Bases of Genome Engineering *in silico*

2003 – 2006 GEniS/VioBox Computational Module: Regulation of Gene Expression in Violacein Biosynthesis in Gram-negative Bacteria

2003 – 2005 Metabolic Engineering for the Production of Anti-Tumour Agents

2002 – date Construction of the Metabolic Map of *Chromobacterium violaceum*



2000 – date	MECPETRO – Human Resources Educational Program in Mechanical Engineering with Emphasis on Petroleum and Gas (ANP – Brazilian Petroleum Agency)
2000 – 2001	Supervision of Client-Server Software and Hardware Installation of a Commercial Web Call Center
1998 – 2002	Restructuring the Undergraduate Education in Chemical Engineering at UFSC, REENQ/PADCT-98
1982 – 2002	Global Analysis of Critical Control Points: An Integrated Management System for Industrial Processes
1998	Support to the Chemistry and Chemical Engineering Undergraduate Programs (Of. Doc. 001/EQA/98, of 04/05/98)
1997 – 1998	Development of Simulators for Chemical Reactor under Deactivating Conditions
1997 – 1998	Introducing Experimental Methodologies in Chemical Reaction Engineering Education – FUNGRAD 1/97
1996 – 1998	Assembling and Automatization of a Ultrafiltration Unit for Food Products
1995 – 1998	Characterizing the Heterogeneity of Catalyst Surfaces and Deactivation Dynamics of Fixed Bed Reactors (Integrated Research Project /CNPq)
1996	Design and Creation of the first Brazilian Chemistry Council Website, CRQ/SC ( <a href="http://www.crq.org.br">www.crq.org.br</a> ) and the Online Professional Informative SOLUÇÃO ON-LINE
1996 – date	Installation, Assembly, and Configuration of Internet and Intranet Servers
1994 – 1995	Assembling of a Microgravimetric Reactor Unit – Amoco's donated equipment (cf. Decl. Coord. Pesq., 03/07/95)
1986 – 1987	The New Informatics Techniques and their Integration in the Chemical Engineering Education - Project NOVA UNIVERSIDADE, Ministry of Education of Brazil
1981	Mineral Coal Pyrolysis at Low Temperatures (Research project collaborator)

## Employment

1982 – date **Faculty of the Chemical and Food Engineering Department**

Federal University of Santa Catarina ([www.ufsc.br](http://www.ufsc.br))  
Technological Center ([www.ctc.ufsc.br](http://www.ctc.ufsc.br))

Chemical and Food Engineering Department (www.enq.ufsc.br)  
Florianópolis, SC, Brazil

- Auxiliar Professor Level 1 (Aug 1982)
  - Auxiliar Professor Level 2 (May 1983)
  - Auxiliar Professor Level 3 (May 1985)
  - Auxiliar Professor Level 4 (May 1987)
  - Assistant Professor Level 3 (July 1987)
  - Assistant Professor Level 4 (July 1989)
  - Adjunct Professor Level 1 (July 1991)
  - Adjunct Professor Level 2 (July 1993)
  - Adjunct Professor Level 3 (July 1995)
  - Adjunct Professor Level 4 (July 1997)
  - Associate Professor Level 1 (Jan 2007)\*
- \* A new career plan has been established

### Professional Experience and Leadership

- Head of the Department (1987–1988)
- Chairman of the Graduate Program (1995)
- Research Director (1989–1990)
- Lab Supervisor (1988–date)  
(Currently: Integrated Technologies Laboratory)
- Principal Investigator (1994–date)  
(Currently: Leader of the Research Group on Genomic Engineering)
- Participation in several academic committees at administrative level and to represent the department, the center and the university
- Participation in several academic committees to select faculty members for UFSC and other major universities in Brazil
- Participation in several Examination committees in Graduate Programs at UFSC and other major universities in Brazil
- Participation in several Organizing Committees, including the Brazilian Chemical Engineering Congress (COBEQ'2008, <http://www.itarget.com.br/clients/cobeq.com.br/>) and X-Meeting 2007, the 3<sup>rd</sup> Conference of the Brazilian Association for Bioinformatics and Computational Biology (<http://www.xmeeting.cnptia.embrapa.br>)

### Teaching/Undergraduate Courses

- Introduction to Genomic Engineering
- Introduction to Chemical Engineering
- General Technological Chemistry I
- Equipment Design II
- Introduction to Chemical Processes
- Process Analysis and Control I
- Process Analysis and Control II
- Chemical Process Industries II
- Petrochemistry

- Chemical Reaction Engineering I
- Chemical Reaction Engineering II
- Transport Phenomena I (Fluid Mechanics)
- Chemical Engineering Thermodynamics I
- Chemical Engineering Thermodynamics II
- Process and Equipment Design II

#### Teaching/Graduate Courses

- Introduction to Genomic and Biomedical Engineering
- Genomics and Bioinformatics
- Metabolic Engineering
- Tissue Engineering
- Advances in Tissue Engineering
- Thermodynamics and Kinetics
- Engineering of Heterogeneous Chemical Reactors
- Fundamentals of Surface Chemistry and Heterogeneous Catalysis
- Engineering and Design of Chemical Reactors
- Chemical Process Kinetics
- Catalyst Deactivation
- Thermodynamics of Biological Processes

#### Administrative Board Member and Founder

- 1996 – 2001 Porta Digital Internet Ltda.  
Internet Services & Access Provider  
Florianópolis, SC, Brazil
- 2000 – 2001 Web Call Brasil Ltda.  
Web-based Call Center & Information Technology Consulting Firm  
Florianópolis, SC, Brazil

#### Teaching Assistant

1991 – 1993 Northwestern University – NU, Evanston, IL, United States of America

Teaching/Undergraduate Courses:

- Process Principles
- Thermodynamics
- Advanced Thermodynamics
- Chemical Engineering Design II

#### Assistant Professor

1981 University of Southern Santa Catarina, UNISUL, Tubarão, Santa Catarina, Brazil

	<p>Teaching/Undergraduate Courses:</p> <ul style="list-style-type: none"> <li>Physical Chemistry II</li> <li>Analytical Chemistry I (Qualitative)</li> <li>Analytical Chemistry II (Quantitative)</li> <li>Modern Physics</li> </ul>
	<p><b>Researcher / Teaching Assistant</b></p>
1979 – 1980	<p>Regional University of Blumenau, FURB, Blumenau, Santa Catarina, Brazil</p> <ul style="list-style-type: none"> <li>Teaching assistant in Physical Chemistry</li> <li>Teaching assistant in Organic Chemistry</li> <li>Chemicals' Storage Room Manager/Supervisor</li> </ul>
	<p><b>Teacher / High School (at age 17)</b></p>
1976	<p>Ministro Jarbas Passarinho High School – CMJP, Armazém, SC – Brazil</p> <ul style="list-style-type: none"> <li>Mathematics (Freshman Class)</li> </ul>

## Awards and Honors

- 2009** Patron of the Chemical Engineering Undergraduate Class of 2008/2, Federal University of Santa Catarina
- Invited speaker of the III Symposium on Chemical Engineering at the State University of Maringá (UEM), Maringá, PR, Brazil
- Special invited speaker of the Chemical Engineering Graduate Program at the Regional University of Blumenau (FURB), Blumenau, SC, Brazil
- Special invited speaker of the Chemical Engineering Program at University of Joinville (Univille), Joinville, SC, Brazil
- 2008** Name of the Undergraduate Chemical Engineering Class of 2007/2 Federal University of Santa Catarina, special honours conferred by the class in recognition of friendship and support
- 3-Year Personal Grant for Research Productivity, CNPq – Brazilian National Research Council (Pesquisador CNPq, nível 2)
- Special invited speaker of the XIV Chemical Engineering Academic Week at the Regional University of Blumenau (FURB), Blumenau, SC, Brazil

- 2007** X-Meeting 2007 Best Poster Award for the work Theoretical and Computational Modeling of Paclitaxel (Taxol®) Action on the Cell Cycle of Smooth Muscle Cells, presented at the 3<sup>rd</sup> International Conference of the Brazilian Association of Bioinformatics and Computational Biology. Award in "recognition of an outstanding presented work"
- Fellowship for Post-doctoral Studies as Visiting Scholar at Harvard-MIT, Health Sciences and Technology Division (hst.mit.edu)  
Scholarship given by CNPq, the Brazilian National Research Council
- Fellowship for Post-doctoral Studies as Visiting Scholar at Harvard-MIT, Health Sciences and Technology Division (hst.mit.edu)  
Awarded by CAPES, Brazilian Ministry of Education (declined in favor of CNPq's)
- 2006** Patron of the Chemical Engineering Undergraduate Class of 2006/1, Federal University of Santa Catarina
- 2005** 3-Year Personal Grant for Research Productivity, CNPq – Brazilian National Research Council (Pesquisador CNPq, nível 2)
- Opening Plenary Conference of the XI ENBEQ, the Brazilian National Meeting on Chemical Engineering Education (Encontro Nacional de Ensino de Engenharia Química), sponsored by ABEQ – the Brazilian Association of Chemical Engineering & Federal University of Campina Grande. This was the first time a Brazilian was invited to speak at the opening conference since its inauguration, in 1981
- Special invited speaker of the IV Workshop on Environment and New Technologies (Jornada de Estudos Ambientais e Novas Tecnologias), UNOCHAPECÓ, Chapecó, SC, Brazil
- Special invited speaker of the II Meeting of Chemical Engineers of the State of Parana (Encontro de Engenheiros Químicos do Paraná), sponsored by the State of Paraná Association of Chemical Engineers & the Federal University of Paraná
- 2004** Special invited speaker of the I Workshop in Genetics: Human Genetics, sponsored by the Brazilian Association of Genetics / Santa Catarina State branch, Florianópolis, SC, Brazil
- Special invited speaker of the 38<sup>th</sup> Brazilian Congress of Clinical Pathology, organized by the Brazilian Society of Clinical Pathology – Clinical Laboratories, Florianópolis, SC, Brazil
- Special invited speaker of the III Workshop on Environment and New Technologies (Jornada de Estudos Ambientais e Novas Tecnologias), UNOCHAPECÓ, Chapecó, SC, Brazil
- 2003** Paronymph of the Chemical Engineering Class of 2002/1, Federal University of Santa Catarina

- 2002 Opening Plenary Conference of the II Workshop on Agrobusiness and Food Sciences (Semana do Centro de Ciências Agroambientais e Alimentos), organized by Centro de Ciências Agroambientais e Alimentos, Western Santa Catarina University (Universidade do Oeste de Santa Catarina (UNOESC) / Videira, SC, Brazil
- Paranymph of the Chemical Engineering Class of 2001/2, Federal University of Santa Catarina
- 2001 Post-doctoral Scholarship (University of Queensland (Brisbane, QLD, Austrália), awarded by CNPq – Brazilian National Research Council
- Post-doctoral Scholarship (University of Queensland (Brisbane, QLD, Austrália), awarded by CAPES – Brazilian Ministry of Education (declined in favor of CNPq's )
- 2000 Opening Plenary Conference, as invited speaker, of the X CONEEQ – National Chemical Engineering Students Congress (Congresso Nacional de Estudantes de Engenharia Química, Centro Acadêmico Livre de Engenharia Química e Engenharia de Alimentos, Florianópolis, SC, Brazil
- 1997 Patron of the Chemical Engineering Class of 1996/2, Federal University of Santa Catarina
- 1995 Award in Recognition of Work in favor of the State of Santa Catarina Professional Engineering Board (Conselho Regional de Engenharia, Arquitetura e Agronomia, CREA/SC)
- 1991 Participation with Distinction and Recognition of Contributions to the U.S. Citizenship Course, Evanston Township High School, Evanston, Illinois, USA
- 1989 Scholarship for Doctoral Studies awarded by CNPq, the Brazilian National Research Council
- Scholarship for Doctoral Studies awarded by CAPES, Brazilian Ministry of Education (declined in favour of CNPq's)
- 1985 Scholarship for Master's Studies awarded by CAPES, Brazilian Ministry of Education
- 1980 Medal of Honor and financial award for the First Place in the School of Engineering, awarded by the State of Santa Catarina Professional Engineering Board (Conselho Regional de Engenharia, Arquitetura e Agronomia - CREA/SC)
- Financial award and diploma for the First Place in the School of Engineering, awarded by the State of Santa Catarina Industrial Federation - FIESC

## Publications

### Book Translations and in Preparation

- 2007 – date Porto, L. M.; Serpa, G. An Introduction to Genomic Engineering (in preparation): Editora Manole: Barueri, São Paulo, SP
- 2005 – 2006 Porto, L.M. 2005. Engenharia de Tecidos (Published as textbook notes, 14 chapters, in Portuguese). Translation of "Tissue Engineering", by Bernard Ø. Palsson and Sangeeta N. Bathia. Pearson Prentice Hall, Upper Saddle River, NJ, 2004
- 2002 Moraes, F. F.; Porto. L.M. 2002. Elementos de Engenharia de Reações Químicas. Rio de Janeiro, RJ: LTC - Livros Técnicos e Científicos Ltda. Translation of "Elements of Chemical Reaction Engineering", 3<sup>rd</sup> Edition, by H. Scott Fogler, Prentice-Hall, 1999

### Full Papers in Journals

- 2009 Becker, S.; Soares, C.; Porto, L.M. Computational Analysis Suggests that Virulence of *Chromobacterium violaceum* Might be Linked to Biofilm Formation and Poly-NAG Biosynthesis. (Accepted) To appear in *Genetics and Molecular Biology* (Manuscript no. MS2009/137), 2009.
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- 1991 Porto, L.M.; Butt, J.B. 1991. Initial and Induced Transients in a Fixed Bed Reactor. AIChE Annual Meeting, Los Angeles, CA, USA
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#### Other Publications

- 2008 Porto, L.M. Continuing Education (Educação Continuada). Invited contribution to the Section "Point of View" of the Brazilian Association of Chemical Engineering (ABEQ) Online Newsletter (Boletim Informativo, no. 172, Março 2008), [http://www.abeq.org.br/Boletins/boletim\\_2008\\_marco.htm](http://www.abeq.org.br/Boletins/boletim_2008_marco.htm)
- 2005 – date Porto, L.M. Blog do Luismar Porto. An internet blog with personal opinion on different academic and scientific subjects (in Portuguese), <http://luismarporto.blogspot.com/>
- 1998 Porto, L.M. 1998. (ISCRE 15 – Chemical reactors for the XXI Century) ISCRE 15 - Reatores Químicos para o Século XXI. Florianópolis, SC: Solução On-Line, Edition n. 28, Conselho Regional de Química da XII Região (On-line publication)
- 1997 Porto, L.M. 09/May/1997. Finding your clone on the Internet. Diário Catarinense, p. 2-2. Florianópolis, SC (Daily regional newspaper)
- 1996 Porto, L.M. 1996. (Chemistry on the Internet) A Química na Internet. Florianópolis: Solução On-Line, Edition n. 15, Conselho Regional de Química da XII Região (On-line publication)

#### Recent Invited Presentations in Meetings and Conferences

- 2007 Porto, L.M. 2007. Genomic engineering: integrating metabolic engineering to Bioinformatics and to omic sciences. Invited lecture for the round table "Metabolic Engineering: Current situation in Brazil and Perspectives", coordinated by Dr. Willibaldo Schmidell Neto, XVI Brazilian National Symposium of Bioprocesses – SINAFERM'2007), Curitiba, PR. <http://www.sinaferm2007.ufpr.br/english/programacao/programa.html>
- 2006 Porto, L.M. 2006. Frontiers of Chemical Engineering: Genomic Engineering Conference: Semana Temática UNISUL Contexto: Universalidade do Conhecimento.

- Universidade do Sul de Santa Catarina (UNISUL)  
<http://www.unisul.br>
- Porto, L.M. 2006. Convergence and Technology Integration: New Challenges for the Chemical Engineering Profession.  
Federal University of Santa Maria  
<http://www.ufsm.br>
- Porto, L.M. 2006. Research at UFSC on Fragile X Syndrome.  
Seminar: II Santa Catarina State Meeting on Fragile X Syndrome, Florianópolis, SC.  
Santa Catarina State Fragile X Syndrome Association  
<http://www.neurogene.floripa.com.br>
- Porto, L.M. 2006. Participation of the Chemical Industry in Agribusiness (Participação da Indústria Química no Agronegócio). IV Chemical and Food Engineering Academic Week.  
Organized by Federal University of Santa Catarina  
<http://www.ufsc.br>
- 2005 Porto, L.M. 2005. Understanding Human Disease Through Comparative Genomics.  
Seminar: 1<sup>st</sup> South American Workshop on Genomics and Community Genetics, Florianópolis, SC.  
Promoted by Institute Pasteur / Newlife  
<http://www.geneticsandpopulationhealth.com>
- Porto, L.M. 2005. Impact of Genomic Engineering on the Production and Industrialization of Foods (Impactos da Engenharia Genômica na Produção e Industrialização de Alimentos). 3<sup>rd</sup> Symposium on Food Science (3<sup>o</sup> Simpósio em Ciência de Alimentos)  
Organized by the Brazilian Society of Food Science and Technology, Florianópolis, SC
- Porto, L.M. 2005. Mathematical Challenges of Genomic Engineering.  
Seminar: Seminars on Biomathematics.  
Department of Mathematics, UFSC, Florianópolis, SC
- Porto, L.M. 2005. Innovative Technologies in the Chemical Industry.  
Invited Speaker: II Chemical Engineers' Paraná State Meeting.  
UFPR, Curitiba, PR  
Federal University of Paraná and Association of Professional Chemical Engineers of the State of Paraná
- Porto, L.M. 2005. New Frontiers in Chemical Engineering (in Portuguese). Engenharia Química.  
Opening Conference: XI Brazilian Meeting on Chemical Engineering Education (ENBEQ)  
Federal University of Campina Grande (UFCG).  
Hotel Fazenda Portal de Gravatá, Gravatá, PE

- 2004 Porto, L.M. 2005. New Trends in Chemical Engineering. Closing Conference: 4<sup>th</sup> Symposium on Environmental and New Technologies. UNOCHAPECÓ, Chapecó, SC
- 2004 Porto, L.M. 2004. The Evolution of Chemical Engineering – Perspectives and New Challenges. Opening Conference: 3<sup>rd</sup> Symposium on Environmental and New Technologies. UNOCHAPECÓ, Chapecó, SC
- Porto, L.M. 2004. Opening the Gates for Genomic Engineering. Invited Speaker: 38<sup>th</sup> Brazilian Congress on Clinical Pathology – Clinical Medicine. Brazilian Society of Clinical Pathology – Clinical Medicine Centro de Convenções Centro Sul, Florianópolis, SC
- Porto, L.M. 2004. Genome Projects Impact on Biotechnology and Health. Seminar: Brazilian Genetics Society Seminar – Santa Catarina State Branch. UFSC, Florianópolis, SC

### Invited short courses

- 2009 Short course on Genomic Engineering (4 hours) III Simposyum on Chemical Engineering State University of Maringá, Maringá, PR, Brazil
- 2008 Short course on Bacterial Genomic Engineering of Industrial and Energetic Interest (4 hours) 1st School of Chemical Engineering – COBEQ'2008 Brazilian Association of Chemical Engineers, Recife, PE, Brazil
- 2006 Short course on Biotechnology Applied to Agribusiness: The Role of the New Biotechnology. VI SAEQA, Federal University of Santa Catarina, Florianópolis, SC, Brazil

### Supervised academic and scientific works

#### Post-Doctoral Supervision

- 2009 – date (Dr. Derce de Oliveira Souza Recouvreux) Celulose Bacteriana Tridimensional Vascularizada para Aplicações em Engenharia de Tecidos e Medicina Regenerativa.  
 ➤ Three-dimensional vascularized bacterial cellulose for tissue engineering and regenerative medicine applications.
- 2008 (Dr. Cíntia Soares) Modelagem matemática e simulação numérica do escoamento em

estruturas vasculares por técnicas de fluidodinâmica computacional.

➤ Mathematical modeling and numerical simulation of flow in vascular structures by computational fluid dynamics techniques.

### Doctoral (PhD) Supervision

- 2008 – date (Fernanda Vieira Berti) Desenvolvimento de arcabouços celularizados para aplicações em engenharia de tecidos.  
 ➤ Development of cellularized scaffolds for tissue engineering applications.
- 2009 (Ana Paula Marzagão Casadei) Desenvolvimento de Rota de Processamento de Compósitos à Base de Poli(L-Ácido Láctico) e Hidroxiapatita (PLLA/HAp) para Fabricação de Scaffolds com Potencial de Utilização em Engenharia de Tecido Ósseo.  
 ➤ Development of composite processing route based on poly(L-lactic acid and hydroxyapatite (PLLA/HAp) for the production of scaffolds of potential use in bone tissue engineering.
- 2008 (Claudimir Antonio Carminatti) Copolímeros de 3-hidroxi butirato-co-3-hidroxi valerato (PHBV) produzidos por *Chromobacterium violaceum*.  
 ➤ Co-polymers of 3-hydroxybutyrate-co-3-hydroxyvalerate (PHBV) produced by *Chromobacterium violaceum*.
- (Itamar Leite de Oliveira) Análise Computacional de Redes Metabólicas com Regulação.  
 ➤ Computational analysis of metabolic and regulatory networks.
- (Derce de Oliveira Souza Recouvreux) Desenvolvimento de Novos Biomateriais Baseados em Celulose Bacteriana para Aplicações Biomédicas e de Engenharia de Tecidos.  
 ➤ Development of new biomaterials based on bacterial cellulose for biomedical and tissue engineering applications.
- (Gisele Serpa) Genômica do X-Frágil: Elementos de Regulação do Gene FMR1.  
 ➤ Genomics of the fragile-X syndrome: Regulatory elements of the FMR1 gene.
- 2006 (Eugênio Simão) Redes de Regulação Gênica: Um Modelo Integrado da Regulação do Metabolismo do Triptofano em *Escherichia coli* sob o Formalismo de Redes de Petri.  
 ➤ An integrated regulatory model of tryptophan metabolism of *Escherichia coli* under the formalism of Petri nets.
- 2005 (Ivan Carlos Georg) Modelagem e Simulação 3-D de um Reator de Craqueamento Catalítico (FCC): Modelo Cinético-Fluidotermodinâmico.  
 ➤ Modeling and simulation of a 3D catalytic cracking reactor (FCC): a thermofluid-dynamic kinetic model.
- (Cristiana Gomes de Oliveira) Regulação Gênica da Biossíntese de Violaceína e Quorum sensing em *Chromobacterium violaceum*.  
 ➤ Genic regulation of the biosynthesis of violacein and quorum sensing in *Chromobacterium violaceum*.
- 2001 (Edson Luiz Foletto) Preparação e Caracterização de Bentonitas Modificadas e sua

Utilização na Clarificação de Óleos Vegetais.

➤ Preparation and characterization of modified bentonites and their use in the clarification of vegetable oils.

### Masters Supervision

2007 – date

(Tânia Souza de Liz) Determinação de parâmetros de interação de fatores de transcrição do gene FMR1.

➤ Determination of interaction parameters of transcription factors of the gene FMR1.

(Pricila Nicoladelli) Estudo de variantes (isoformas) da proteína do retardo mental da Síndrome do X Frágil (FMRP).

➤ Variant (isoform) study of the fragile- X syndrome mental retardation protein (FMRP).

(Filipe Araújo Teixeira Paulo) Obtenção de linhagens celulolíticas de *Escherichia coli* e avaliação destas quanto à sacarificação de celulose e derivados.

➤ Development of cellulolytic strains of *Escherichia coli* and their evaluation concerning the saccharification of cellulose and derived products.

(Julia de Vasconcellos Castro) Produção de biohidrogênio por *Clostridium acetobutylicum* a partir de glicerol.

➤ Biohydrogen production by *Clostridium acetobutylicum* from glycerol.

(Maria Cristina da Silva) Quantificação de mRNA e da proteína FMRP por técnicas de blotting

➤ Quantification of FMR1 mRNA and protein by blotting techniques.

2009

(Clayton Miguel Costa) Avaliação da osteointegração do copolímero PHBV obtido de *Chromobacterium violaceum*, em falha óssea produzida no fêmur de ratos Wistar

➤ Evaluation of the osteointegration of the copolymer PHBV obtained from *Chromobacterium violaceum* in femoral bone defects of Wistar rats.

2008

(Sidnei Becker) Análise Estrutural e Caracterização Funcional de Genes de Patogenicidade em *Chromobacterium violaceum*.

➤ Structural analysis and functional characterization of pathogenicity genes of *Chromobacterium violaceum*.

(Fernanda Vieira Berti) Efeito da aloína e do extrato do parênquima clorofiliano da *Aloe barbadensis* na viabilidade de células tumorais

➤ Effect of aloin and the chlorophyll parenchymal extract of *Aloe barbadensis* in the viability of tumoral cells.

(Vanessa Zanotto Gonçalves) Estudo de viabilidade técnica, econômica e financeira da extração e comercialização de um insumo farmacêutico à base de polissacarídeos de *Aloe barbadensis* Miller

➤ Study of the technical, economic and financial viability of the extraction and commercialization of a pharmaceutical ingredient based on polysaccharides of *Aloe*

- barbadensis* Miller.
- 2007 (Cléo Rodrigo Bressan) Clonagem gênica, expressão heteróloga e proposição de um modelo estrutural teórico para a polihidroxialcanoato sintase de *Chromobacterium violaceum*.  
➤ Cloning, heterologous expression and proposition of a theoretical structural model of polyhydroxyalkonate synthase of *Chromobacterium violaceum*.
- (Renata Aparecida Nedel Pértile) Estudo *in vitro* da interação da linhagem de fibroblastos L929 com membranas de celulose bacteriana para aplicações em engenharia de tecidos.  
➤ *In vitro* study of the interaction between fibroblast L929 strains and bacterial cellulose membranes for applications in tissue engineering.
- (Daniela Muccillo) Estudos *in silico* para a produção bacteriana de hidrogênio.  
➤ *In silico* studies for the production of bacterial hydrogen.
- (André Luis Rodrigues) Produção Heteróloga de Violaceína por *Escherichia coli*.  
➤ Heterologous production of violacein by *Escherichia coli*.
- 2006 (Ingrid Tremel Barbato) Avaliação de Estratégia Terapêutica pela Ingestão de um Conjunto de Aminoácidos em Portadores da Síndrome do X Frágil: Estudo Clínico e Neuroquímico  
➤ Therapeutic evaluation of an aminoacid pool prescribed to fragile-X syndrome patients: a clinical and neurochemical study.
- (Mariana Arzua de Queiroz) Avaliação de Pré-Mutação por PCR na Síndrome do X Frágil.  
➤ Evaluation of fragile-X syndrome pre-mutation by PCR.
- (Erlon Mendes) Uso Racional de Ferramentas de Engenharia Metabólica: Produção Bacteriana de Hidrogênio e de Violaceína.  
➤ Rational use of metabolic engineering tools: bacterial production of hydrogen and violacein.
- 2005 (Artiva Maria Goudel) Utilização do Pacote Pathway-Tools para a cura de anotação genômica da *Chromobacterium violaceum* por via computacional.  
➤ Use of Pathway-Tools package to curate the genomic annotation of *Chromobacterium violaceum*.
- 2004 (Luciani Tatsch Piemolini) Modelagem Estrutural da PHA Sintase de *Chromobacterium violaceum* para Estudos de Mutação Sitio-dirigida  
➤ Structural modeling of the PHA synthase of *Chromobacterium violaceum* aiming site-directed point mutation.
- (Derce de Oliveira Souza Recouvreux) Produção de Celulose Bacteriana: Identificação do Operon *bsc* e Produção de Biofilme Celulósico por *Chromobacterium violaceum*.  
➤ Production of bacterial cellulose: identification of the *bsc* operon and production of cellulosic biofilm by *Chromobacterium violaceum*.
- 2002 (Fernando Cesar T Soares) Desenvolvimento de um Sistema Adaptado para o Controle da Qualidade Ambiental e Aplicação a um Processo de Industrialização de Pescado.  
➤ Development of an adapted system for environmental quality control and its

- application to and industrial fish process.
- (Carlos Darlan Duarte de Souza) Regeneração Térmica de Argilas Comerciais para Reutilização na Clarificação de Óleo de Soja.  
➤ Thermal regeneration of commercial clays for their reuse in soybean oil clarification.
- 2001 (Claudimir Antonio Carminatti) Ensaio de Hidrólise Enzimática em Reator a Membrana Utilizando Beta-Galactosidase *Kluyveromyces lactis*.  
➤ Enzymatic hydrolysis in membrane reactor using *Kluyveromyces lactis* beta-galactosidase.
- (Cristiana Gomes de Oliveira) Proposta de Modelagem Transiente para a Clarificação de Óleos Vegetais - Experimentos Cinéticos e Simulação do Processo Industrial.  
➤ Transient modeling of the clarification of vegetable oils – Kinetic experiments, and industrial process simulation.
- 2000 (Vivian Alexandra Krauss) Estudos de Equilíbrio e Cinética de Adsorção de N-Butilamina em Catalisador de FCC baseado em Zeólita USY.  
➤ Equilibrium and kinetics studies of the adsorption of N-butyl amine on FCC catalysts based on USY zeolite.
- 1999 (Patrícia Anselmo Zanotta) Ensaio Cinéticos de Branqueamento de Óleo de Soja.  
➤ Kinetics of the soybean oil bleaching.
- 1998 (Rafael Hernandez Ogeda) Estudo de Utilização da Linguagem Java no Desenvolvimento de Applets e Aplicativos para Ensino e Pesquisa de Engenharia Química.  
➤ Java language use for the development of applications and applets for chemical engineering education and research.
- 1996 (Márcio Dela Vedova) Estudos de Adsorção e Dessorção de Piridina e n-Butilamina pelo Método Gravimétrico  
➤ Adsorption and desorption studies of pyridine and n-butyl amine by micro gravimetric method.
- Scientific Initiation Supervision**
- 2008 (Clederson Ferreira) Utilização de genes de *Chromobacterium violaceum* para otimização da produção de polihidroxialcanoatos (PHA).  
➤ Use of *Chromobacterium violaceum* genes aiming polyhydroxyalkanoate (PHA) production optimization.
- (Diogo Marques de Abreu Sá) Estudo da Produção de Celulose por *Gluconacetobacter xylinus*.  
➤ Production of cellulose by *Gluconacetobacter xylinus*.
- 2007 (Barbara Yuri de Oliveira) Engenharia de Tecidos Molecular: Desenvolvimento de Polímeros Biocompatíveis Produzidos por Via Bacteriana.  
➤ Molecular tissue engineering: development of biocompatible polymers produced



- by bacteria.
- (Priscila Teruko Kondo) Engenharia de Tecidos Molecular: Desenvolvimento de Polímeros Biocompatíveis Produzidos por Via Bacteriana.  
 ➤ Molecular tissue engineering: development of biocompatible polymers produced by bacteria.
- 2006 (Gustavo Lopes Colpani) Regulação por quorum sensing em *Chromobacterium violaceum*.  
 ➤ Quorum sensing regulation in *Chromobacterium violaceum*.
- (Gabriel Vilella Kozakevich) Produção de biopolímeros para engenharia de tecidos molecular.  
 ➤ Production of biopolymers for molecular tissue engineering applications.
- 2004 (Patricia de Mello Tostes) Genômica comparativa do gene FMR1.  
 ➤ Comparative genomics of the FMR1 gene.
- (Julia de Vasconcellos Castro) Estudo de modelos *Drosophila melanogaster* para a síndrome do X-frágil.  
 ➤ Study of *Drosophila melanogaster* models of fragile-X syndrome.
- (Maria Tereza Nagel) Metabolic IsaViz: Representando Vias Metabólicas em Grafos RDF Customizados.  
 ➤ Metabolic IsaViz: Representing metabolic pathways by customized RDF graphs.
- (Alexandre Vidal Riso) Modelagem e Criação de Objetos visando a Construção de um Organismo Genômico *in silico*.  
 ➤ Modeling and creation of objects for the construction of an *in silico* genomic organism.
- 2003 (Ricardo Vicente de Paula Rezende) Análise de redes regulatórias - Programa BioBASES.  
 ➤ Regulatory network analysis – BioBASES project.
- (Guilherme Adolfo Wiggers) Desenvolvimento de infra-estrutura computacional para apoio à bioinformática - Programa BioBASES.  
 ➤ Development of bioinformatics infrastructure – BioBASES project.
- (Marianne Neves Manjavachi) Farmacogenômica - Programa BioBASES  
 ➤ Pharmacogenomics – BioBASES project.
- (Suellen Pericolo) Farmacogenômica - Programa BioBASES  
 ➤ Pharmacogenomics – BioBASES project.
- (Manoela Maria Bagestan) Farmacogenômica - Programa BioBASES  
 ➤ Pharmacogenomics – BioBASES project.
- 2001 (Liliane Rinaldin Sganzerla) Recuperação de argilas para clarificação de óleos.  
 ➤ Clay recovering for the clarification of oils.

- 1999 (Alex Dal Pont) Desenvolvimento de Simuladores para Reatores Químicos com Desativação Catalítica.  
➤ Development of computer simulations for chemical reactors undergoing catalyst deactivation.
- (Claudiomira Zardo) Refino de Óleos Vegetais.  
➤ Vegetable oil refining.
- 1998 (Cassiano BRINGHENTI) Caracterização da Heterogeneidade de Superfícies Catalíticas e Dinâmica de Desativação de Reatores de Leito Fixo.  
➤ Characterization of catalytic surface heterogeneity and the dynamics of fixed bed reactor deactivation.
- (Martinho L Nunes Jr) Técnicas de HACCP.  
➤ HACPP techniques.
- (André Carpalhoso de Abreu) Técnicas de HACCP.  
➤ HACPP techniques.
- (Fernando Cesar T Soares) Técnicas de HACCP.  
➤ HACPP techniques.
- 1997 (Marcelo Curtis Martins) Modelagem e simulação de processos de adsorção  
➤ Modeling and simulation of adsorption processes.
- 1996 (André Schäfer) Preparação e Caracterização de Catalisadores Ácidos para Estudos de Superfícies Heterogêneas.  
➤ Preparation and characterization of acid catalysts for the study of heterogeneous surfaces.
- 1995 (Leandro Trois Moreau) Estudos de Adsorção/Dessorção em um Sistema de Reação Microgravimétrico.  
➤ Study of adsorption/desorption in a micro gravimetric reaction system.
- (Rafael Hernandes Ogeda) Sítios Ativos para Windows – Um Simulador de Reatores Químicos com Desativação Catalítica.  
➤ Active sites for Windows – a simulator for chemical reactors undergoing deactivation.
- (Claudimir Antonio Carminatti) Suporte de Redes Locais.  
➤ Support for local area networks (LANs).
- 1994 (Sandra Lorena Muñoz Rojas) Separação e Reação em Unidades de Ultrafiltração.  
➤ Separation and reaction in ultrafiltration units.
- 1988 (Leonardo L. Cesconetto) Desenvolvimento, Adaptação e Implementação de Softwares para Solução de Problemas de Engenharia.  
➤ Development, adaptation and implementation of software solutions for chemical engineering problems.

(Dachamir Hotza) Desenvolvimento, Adaptação e Implementação de Softwares para Solução de Problemas de Engenharia.

➤ Development, adaptation and implementation of software solutions for chemical engineering problems.

(Antônio J T Paro) Desenvolvimento, Adaptação e Implementação de Softwares para Solução de Problemas de Engenharia.

➤ Development, adaptation and implementation of software solutions for chemical engineering problems.

(Rogério R Marchiotti) Desenvolvimento, Adaptação e Implementação de Softwares para Solução de Problemas de Engenharia.

➤ Development, adaptation and implementation of software solutions for chemical engineering problems.

1997 (André Luiz Sardá) Adequação e Implementação de Programas, em Linguagem BASIC, para Simulação de Sistemas de Controle de Processos.

➤ Adaptation and implementation of software, in BASIC language, for the simulation of process control systems.

#### **Undergraduate Projects Supervision**

2005 (Débora Peterman) Estágio Supervisionado – Duas Rodas Industrial - Jaraguá do Sul, SC.  
 ➤ Supervised field studies – Duas Rodas Industrial - Jaraguá do Sul, SC, Brazil.

2004 (Thiago Fernandes de Aquino) Estágio na Perdigão - Unidade Industrial de Videira - Rações e Óleos (UIViRO).  
 ➤ Supervised field studies – Perdigão - Unidade Industrial de Videira - Rações e Óleos (UIViRO), Videira, SC, Brazil.

2003 (Alessandra Carboni) Estágio Supervisionado - MULTIBRÁS (Joinville, SC).  
 ➤ Supervised field studies – MULTIBRÁS, Joinville, SC, Brazil.

(Thiago Rodrigo Fronza) Fertilizantes/Petroquímica - Ultrafertil S.A. (Estágio Supervisionado).

➤ Supervised field studies – Ultrafertil S.A. (Fertilizers/Petrochemicals).

2002 (Franci Daniele Prochnow) Relatório de Estágio HOFFMANN-LA ROCHE.  
 ➤ Supervised field studies – HOFFMANN-LA ROCHE.

2000 (Regiane Machado Westphal) Controle de Qualidade - Laticínios – Fleischmann Royal Nabisco (Estágio Supervisionado).  
 ➤ Supervised field studies – Quality control of dairy products – Fleischmann Royal Nabisco.

(Claudiomira Zardo) Produção - Óleo de soja – ADM Exportadora e Importadora S.A. (Estágio Supervisionado).

➤ Supervised field studies – Production of soybean oil – ADM Exportadora e Importadora S.A.

- 1999 (Leda Battestin) Controle de Qualidade - Embalagens – Perdigão Agroindustrial S.A. (Estágio Supervisionado).  
➤ Supervised field studies – Quality control of packings – Perdigão Agroindustrial S.A.
- (Henry Galañena Brandolt) Controle de Qualidade - Tintas – WEG S.A. Divisão WEG Química (Estágio Supervisionado).  
➤ Supervised field studies – Quality control of dyes – WEG S.A. Chemical Division.
- 1997 (Alexandre Keller Abalustro) Gerenciamento de Informações em Processos de Tratamento de Efluentes Líquidos Industriais baseado em um Modelo Cliente/Servidor – Porta Digital Internet Ltda. (Estágio Supervisionado).  
➤ Supervised field studies – Information management in liquid effluents treatment process based on a client/server model – Porta Digital Internet Ltda.
- 1996 (Luiz Fernando Alves Viana Monteiro) Craqueamento Catalítico Fluido – Petrobrás REPLAN Paulínia (Estágio Supervisionado).  
➤ Supervised field studies – Fluid catalytic cracking unit – Petrobrás REPLAN Paulínia, SP, Brazil.
- 1995 (Leandro Trois Moreau) Petrobrás - SIX (Estágio Supervisionado).  
➤ Supervised field studies – Petrobrás – SIX.
- 1994 (Cíntia Fanchin) Petrobrás - REPAR (Estágio Supervisionado)  
➤ Supervised field studies – Petrobrás – REPAR.
- 1998 (Sandra Zanette Massambani) Cia. Industrial de Plástico CIPLA (Estágio Supervisionado)  
➤ Supervised field studies – Cia. Industrial de Plástico CIPLA.

#### Other Undergraduate Supervision

- 2003 (Liliane Rinaldin Sganzerla) Apoio a trabalhos de engenharia metabólica.  
➤ Metabolic engineering studies.
- (Margot Erika Caris) Sinalização e controle do ciclo celular.  
➤ Cell cycle signaling and regulation.
- 2002 (Renata Gonçalves Clemente) Apoio a trabalhos de engenharia metabólica - Programa BioBASES.  
➤ Metabolic engineering studies.
- (Josiane Thomazi Coral) Monitoria da disciplina EQA 5341 Termodinâmica para Engenharia Química I.  
➤ Teaching assistance for the course EQA 5341 Thermodynamics for Chemical Engineering I.
- 1997 (Krischimann P. de Arruda) Estágio Extracurricular.  
➤ Extracurricular activities.

- (André L. Nogueira) Estágio Extracurricular.  
 ➤ Extracurricular activities.
- 1987 (Marilene Mazzuchi Zepka) Estudo de Catalisadores Bimetálicos à Base de Níquel para a Reação de Metanação.  
 ➤ Study of bimetallic nickel-based catalysts for methanation reaction.

## Memberships

- 2005 – date Mentor of the Genetics Mentor Network, sponsored by The American Society of Human Genetics, The National Human Genome Research Institute, The Genetic Alliance, and the Genetics Society of Mentorship Program (Serve as volunteer)
- 2004 – date Member of the Brazilian Genetics Society (SBG)
- 2002 – date Member of the Brazilian Association of Chemical Engineers (ABEQ)
- 1981 – date Registered Chemical Engineer with the Professional Board of Engineers, Architects and Agronomists (CREA/SC)
- Registered Chemical Engineer with the Professional Board of Chemists, (CRQ/SC)

## Patents, Products and Softwares

### Patents

- 2009 Porto, L.M.; Recouvreux, D.O.S.; Rambo, C.R.; Dias, P.F.; Ribeiro-do-Vale, R.M.; Costa, C.M.; Koep, J.; Campestrini, L.H.; Berti, F.V.; Caminatti, C.A.; Antônio, R.V. Biocomposite material of bacterial cellulose and acemmanan (Patent, under revision).
- Porto, L.M.; Recouvreux, D.O.S.; Berti, F.V. Rambo, C.R.; Dias, P.F.; Ribeiro-do-Vale, R.M.; Antônio, R.V. 3D vascularized bacterial cellulose hydrogels (Patent, in preparation).
- 2008 Porto, L.M.; Recouvreux, D.O.S.; Rambo, C.R.; Carminatti, C.A.; Antônio, R.V.; Costa, C.M. Tridimensional macroscopic bodies of bacterial cellulose: Production process and their use (Patent pending - INPI no. 017080001145, 28/Jul/2008)

### Commercial Products

- 1999 Porto, L.M.; DeMarchi, A.; Foletto, E.L. Rafinol® Colza. Industrial adsorbent for edible oil bleaching

Porto, L.M.; DeMarchi, A.; Foletto, E.L. Rafinol<sup>®</sup> Helyanthus. Industrial adsorbent for edible oil bleaching

Porto, L.M.; DeMarchi, A.; Foletto, E.L. Rafinol<sup>®</sup> Palma. Industrial adsorbent for edible oil bleaching

Porto, L.M.; DeMarchi, A.; Foletto, E.L. Rafinol<sup>®</sup> Soja. Industrial adsorbent for edible oil bleaching

Porto, L.M.; DeMarchi, A. Seed free. Industrial adsorbent for insect protection of vegetable oil seeds

#### Academic and Educational Softwares

2009 Oliveira, I.L.; Porto, L.M. GenSys Toolbox – A Genomic Engineering System Toolbox for Matlab<sup>®</sup> (Available upon request)

2007 Oliveira, I.L.; Porto, L.M. GenSys – Genomic Engineering Systems Biology Server <http://gensys.intelab.ufsc.br>

2006 Goudel, A.M.; Porto, L.M. CvioCyc – A pathway/genome database for *Chromabacterium violaceum* <http://cviocyc.intelab.ufsc.br>

2003 Veiga, D.F.; Porto, L.M. mIsaViz – Metabolic IsaViz, a biological representation system in RDF/XML <http://www.intelab.ufsc.br/misaviz>

Veiga, D.F.; Porto, L.M. RDFgenLib – Application library for mIsaViz <http://www.intelab.ufsc.br/misaviz>

1999 Ogeda, R.H.; Porto, L.M. Java Package Labore.math – An ODE solver for Java applications

Bagnara, F.; Porto, L.M. Monte Carlo Phase Transition Simulator. A C program to predict phase transition in a gas adsorption process

1998 Ogeda, R.H.; Porto, L.M. SemiBatch v.1.1 – Semi-batch chemical reactor simulator with cooling jacket (Simulador de reator semi-contínuo com camisa de resfriamento). Educational software

Ogeda, R.H.; Porto, L.M. CatalystDecay v.1.1 – CSTR fluidized reactor simulator for catalytic cracking of gasoil, with deactivating catalyst (Simulador de um reator CSTR fluidizado para o craqueamento catalítico em fase gasosa de gasóleo leve, com decaimento catalítico). Educational software

Ogeda, R.H.; Porto, L.M. AdiabaticBatch v.1.11 – Adiabatic reactor simulator for batch production of propylene glycol (Simulador de um reator adiabático em

	<p>batelada para produção de propilenoglicol). Educational software</p> <p>Ogeda, R.H.; Porto, L.M. OxydationSO<sub>2</sub> v.1.1 – Industrial SO<sub>2</sub> converter for sulfuric acid production (Simulador de um conversor industrial de SO<sub>2</sub> para a produção de ácido sulfúrico). Educational software</p> <p>Ogeda, R.H.; Porto, L.M. RLFDispAxial v.1.01 – Fixed bed isothermal steady state chemical reactor simulator with axial dispersion (Simulador de um reator de leito fixo com dispersão axial, para um modelo isotérmico estacionário). Educational software</p> <p>Ogeda, R.H.; Porto, L.M. SisEquacoesLineares v.1.1 – Java applet to solve systems of linear equations of any order (Applet Java para resolução de sistema de equações algébricas lineares de qualquer ordem). Educational software</p>
1995	<p>Ogeda, R.H.; Porto, L.M. Sites for Windows V. 1.0 – An MS-Windows program written in C++, with user friendly interface, to simulate catalyst deactivation in packed bed reactor. Educational/industrial software</p>

## Computer Skills

### Operating Systems Administration and Network Management

Unix systems: IBM AIX, SunOS, and Linux (Red Hat, Fedora, FreeBSD)  
 MS-Windows: XP Professional, Windows 2000, Windows 2003, Windows Vista; Apache web server, DNS, SSH, server applications installation and configuration

### Programming Languages

FORTRAN, C/C++, Visual Basic, MATLAB, Java

### Scripting Languages (basic knowledge)

Bash, Perl, Python, JavaScript, PHP, XML

### Database Systems

MySQL, phpMyAdmin

### Computational Fluid Dynamics (basic knowledge)

COMSOL, CFX, OpenFOAM

### Bioinformatics and Systems Biology software

dChip, R/Bioconductor, Matlab Bioinformatics Toolbox, Modeller, SwissPDBViewer, Web applications such as NCBI tools, rVista server, Genome Browsers, and KEGG databases

### Web development and publishing software

Dreamweaver, FrontPage, Joomla, MediaWiki, TWiki

### Desktop office, design and electronic forms applications

MS-Office 2007, Macromedia Fireworks, Adobe Acrobat Professional, EndNote (library and reference manager)

## Professional References

### Joe Da Costa, Ph.D.

Associate Director, Centre for Functional Nanomaterials  
The University of Queensland  
Brisbane, QLD 4072, Australia  
Email: joedac@cheque.uq.edu.au  
Tel: +617 3365 6960

### Elazer R. Edelman, M.D., Ph.D., F.A.C.C.

Thomas D. and Virginia W. Cabot Professor  
Director, Biomedical Engineering Center  
Harvard-MIT Division of Health Sciences and Technology  
77 Massachusetts Ave., Bldg. 16-343  
Cambridge, MA 02139  
Email: ere@mit.edu  
Tel: + 1 (617) 253-1569

### Rambo, Carlos Renato, Dr.

Chemical Engineering & Materials Science and Engineering  
Universidade Federal de Santa Catarina  
Centro Tecnológico  
Departamento de Engenharia Química e Engenharia de Alimentos  
Caixa Postal 476, Trindade, C.P. 476  
88040900 – Florianópolis, SC - Brazil  
E-mail: rambo@enq.ufsc.br  
Tel.: +55 48 3721-9822 Ext. 233  
Fax: +55 48 3721-9687



LUISMAR MARQUES PORTO