



# Raquel Lobosco

## Curriculum Vitae

*"The shining trophies on our shelves never win tomorrow's game" - John Wooden*

### Education

- 2009–2013 **Doctor Hydraulic Engineering**, *São Paulo University, USP*, São Carlos, Brazil, GPA – A.  
Financial support from:  
National Counsel of Technological and Scientific Development support, CNPQ  
Coordination for Enhancement of Higher Education Personnel, CAPES  
São Paulo Research Foundation, FAPESP
- 2012–2012 **Doctoral Training**, *Polytechnic Institute of Setubal, IPS*, Barreiro, Portugal.  
Financial support from:  
Santander International Mobility
- 2007–2009 **Master Chemistry Engineering**, *Campinas University, UNICAMP*, Campinas, Brazil, GPA – A.  
Financial support from:  
National Counsel of Technological and Scientific Development support, CNPQ
- 1999–2004 **Bachelor Mechanical Engineering**, *Rio de Janeiro State University, UERJ*, Nova Friburgo, Brazil, GPA – 7.0.  
Termofluidynamic emphasis.  
Financial support of junior research activities from Rio de Janeiro Research Agency

### Doctoral Thesis

- Title *Computational analysis of air inception in the flow along stepped chutes*
- Supervisors Prof. Harry Edmar Schulz, USP, Prof. Antônio Amador, IPS
- Description This thesis investigates the breakup and coalescence of bubbles and the split of droplets which occur in the process of self-aeration of the flow along hydraulic structures with high slope.
- Extra activities Teaching skills improvement activities developed during first semester of 2011 in the transport phenomena lectures for civil engineering course at São Paulo University.

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## Masters Thesis

- Title *Thermodynamic and environmental analysis of a refrigerator cycle performance and propose of a global function evaluation*
- Supervisors Prof. José Vicente Hallak D'Ángelo
- Description This thesis explored the idea of an statistic efficiency analysis for refrigerators cycles using HYSYS software and Minitab.

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## Bachelor - Junior Research Activities

- Title *Software development for Transport Phenomena and Fluid Laboratory, LFFT.*
- Supervisors Prof. Carlos Frederico Estrada Alves
- Description Beginner research activities from June 2000 until June 2002 at LFFT

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## Experience

### Research and academic activities

- 2013– **Adjunt Professor**, FEDERAL TECNOLOGICAL UNIVERSITY OF PARANÁ, Brazil.  
Fluid mechanics and Hydraulics lectures for Enviromental, Food and Chemistry engineering courses.
- 2011–2013 **Substitute Professor**, FEDERAL UNIVERSITY OF SÃO CARLOS, Brazil.  
Transport phenomena lectures (Heat transfer, Fluid mechanics and Mass transfer) for Civil, Mechanic and Materials engineering graduation courses.
- 2013–2013 **Research activities**, TURKU UNIVERSITY, Finland.  
Iron production simulation process using free CFD package.

#### Further Details:

- Financial support from Coimbra Group Scholarship
- Activities abroad during the period of 3 months

### Professional experience

- 2007–2009 **Team coordinator**, T-SYSTEMS (DEUTSCH TELECOM), Blumenau, Brazil and Stuttgart, Germany.  
Software development of Finite Elemente Analysis for aeronautic and automobile industry.  
Responsable for Post-Processing

#### Further Details:

- Offshore Project developed with German leaders
- Three months of training in Germany for project transfer to Brazil
- Activities abroad during the period of 3 months
- Project management of code development
- C++ and Fortran programing tools
- Graphic interface with Qt
- Activities of training groups

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2005–2006 **Project developer**, ENGENDRAR, Campinas, Brazil.

Mixing project development for mining process industry.

Further Details:

- Impeler and mixer project development for most relevant Brazilian Mining industries
- Business with clients
- Technical coordination and support
- Project management
- Equipment project for several fluid processing including all kind of reology
- Consulting activities

2005–2005 **Software development**, THORUS SCRISOFT, Campinas, Brazil.

Fluid dynamics Project Developed to Embraer (Brazilian airplane industry)

Further Details:

- Handbooks and software specification
- Financial support from National Counsel of Technological and Scientific Development support, CNPQ
- Developed at Campinas University, Softex, New High Technology Industry

2002–2003 **Trainee**, GENERAL ELECTRIC, Petrópolis, Brazil.

Aeronautic turbines repair

Further Details:

- Development and draw specification of support tools for turbine pieces inspection
- Labour hour reduction control

2002–2002 **Trainee**, FRICON, Vila do Conde, Portugal.

Refrigerator production industry

Further Details:

- Efficiency Laboratory test
- Propose of new design improvements
- Energy efficiency evaluations

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## Awards

2010 One of the best work presented at Computational Academic Meeting, EAMC, at National Laboratory of Scientific Computation, LNCC

2002 Beginner research award, Rio de Janeiro State University

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## Complementar Education

2009 SHORT COURSE IN AN INTRODUCTION TO SYSTEM DYNAMICS. São Paulo University, Brazil

2010 SHORT COURSE IN OPENFOAM - ADVANCED. Aeronautic Technologic Institute, ITA, São Jose dos Campos, Brazil. Financial support from Coordination for Enhancement of Higher Education Personnel, CAPES

2010 SHORT COURSE IN OPENFOAM - BEGINNER. Aeronautic Technologic Institute, ITA, São Jose dos Campos, Brazil. Financial support from Coordination for Enhancement of Higher Education Personnel, CAPES

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## Languages

Portuguese **Mothertongue**

English **Advanced**      *Understanding Fluent, Speaking Fluent, Writing Fluent, Reading Fluent*

Espanish **Basic**      *Understanding Basic, Reading Basic*

German **Beginner**

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## Areas of Expertise

- Mechanic of Fluids
- Thermodynamics
- Project Management
- Phenomena of Transport
- Hydraulic Engineering
- Software development

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## Member of Editorial Books

Vol I Hydrodynamics - Optimizing Methods and Tools, 2011 - Open access Book Intech

Vol II Hydrodynamics - Natural Water Bodies, 2012 - Open access Book Intech

Vol III Hydrodynamics - Advanced Topics, 2012 - Open Access Book Intech

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## Full Articles

LOBOSCO, J. R. ; Schulz, H. E. . Análise computacional do escoamento em estruturas de vertedouros em degraus. *Mecânica Computacional*, v. XXIX, p. 3593-3600, 2010

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## Book Chapters

SIMOES, A. L. A.; Schulz, H. E.; LOBOSCO, J. R.. Stepped Spillways - Theoretical, experimental and numerical studies. In: Harry Edmar Schulz; André Luiz Andrade Simões; Raquel Jahara Lobosco. (Org.). *Hydrodynamics - Natural Water Bodies*. : InTech - Open Access Publisher, 2012, v. 1, p. 237-262.

LOBOSCO, J. R.; Schulz, H. E. ; SIMOES, A. L. A.. Analysis of two phase flows on stepped spillways. In: Harry Edmar Schulz; André Luiz Andrade Simões, Raquel Jahara Lobosco. (Org.). *Hydrodynamics - Natural Water Bodies*. : InTech - Open Access Publisher, 2011, v. 1, p. 285-308.

Schulz, H. E. ; LOPES JUNIOR, G. B. ; SIMOES, A. L. A. ; LOBOSCO, J. R. . One dimensional turbulent transfer using random square waves - Scalar/velocity and velocity/velocity interactions.. In: Harry Edmar Schulz; André Luiz Andrade Simões, Raquel Jahara Lobosco. (Org.). *Hydrodynamics - Advanced Topics*. : InTech - Open Access Publisher, 2011, v. 1, p. 3-34.

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## Full Article Published in Congresses

OLIVEIRA, A. B. F. ; CORREA, N. A. ; LOBOSCO, J. R.. Modelagem e Simulação em Turbulência. XI Simpósio de Recursos Hídricos do Nordeste, 2011, João Pessoa, 2012. PAP012175.

LOBOSCO, J. R. ; Schulz, H. E. ; Brito, R. J. R. ; SIMOES, A. L. A. . Análise computacional da aeração em escoamentos bifásicos sobre vertedouros em degraus.. In: 6 Congresso Luso-Moçambicano de Engenharia e 3 Congresso de Engenharia de Moçambique, 2011, Maputo. CLME'2011/IIICEM, 2011. v. 1. p. 1-10.

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SIMOES, A. L. A. ; Brito, R. J. R. ; Schulz, H. E. ; PORTO, R. M. ; LOBOSCO, J. R. . Aspectos numéricos e físicos de soluções das Equações de Saint Venant. In: 6 Congresso Luso-Moçambicano de Engenharia e 3 Congresso de Engenharia de Moçambique, 2011, Maputo. CLME'2011/IIICEM, 2011. v. 1. p. 1-32.

LOBOSCO, J. R. ; Schulz, H. E. ; OLIVEIRA, A. B. F. ; CORREA, N. A. . Numerical simulation of stepped spillway flow. In: Proceedings of the 21st International Congress of Mechanical Engineering COBEM, 2011, Natal. ABCM e UFRN, 2011. v. 1. p. 1-10.

SCHULZ, H. E. ; LOBOSCO, J. R. ; SIMOES, A. L. A. . Multiphase analysis of entrained air in skimming flows along stepped chutes. In: 5th International Conference on Advanced Computational Methods in Engineering, 2011, Liège. Proceedings of the ACOMEN 2011, 2011. v. 1. p. 1-10.

OLIVEIRA, A. B. F. ; CORREA, N. A. ; LOBOSCO, J. R. ; Schulz, H. E. . Modeling of oxygen transfer in forced aeration. In: 21st International Congress of Mechanical Engineering, 2011, Natal. Proceedings of the 21st International Congress of Mechanical Engineering., 2011. v. 1. p. 1-10.

OLIVEIRA, A. B. F. ; CORREA, N. A. ; LOBOSCO, J. R.. Modelagem da transferência de oxigênio em aeração forçada. XIX Simpósio Brasileiro de Recursos Hídricos, 2011, Maceió, 2011. PAP008369.

SCHULZ, H. E. ; Brito, R. J. R. ; SIMOES, A. L. A. ; Porto, R. M. ; PUCHE, A. A. S. ; LOBOSCO, J. R. . Modelos teóricos para análise de aeração em aeradores de fundo utilizando princípios físicos. In: XXIV congresso Latino Americano de hidráulica, 2010, Punta del Este. Hidráulica, 2010.

LOBOSCO, J. R. ; DANGELO, J. V. H. . Avaliação do desempenho termodinâmico de ciclos de refrigeração domésticos utilizando misturas de refrigerantes. In: XVII Congresso Brasileiro de Engenharia Química, 2008, Recife. IV - Congresso Brasileiro de Termodinâmica Aplicada, 2008. v. 1. p. 1-8.

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## Expanded Abstract

LOBOSCO, J. R. ; Schulz, H. E. . Análise computacional do escoamento em estruturas de vertedouros escalonados através do uso de software livre. In: Encontro acadêmico de modelagem computacional, 2011, Petrópolis. Modelagem Computacional, 2011.

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## Abstract

LOBOSCO, J. R. ; Schulz, H. E. . Multiphase analysis of skimming flow. In: 3rd Workshop on Fluids and PDE, 2011, Campinas. Proceedings of Workshop on Fluids and PDE, 2011. v. 1.

LOBOSCO, J. R. ; Schulz, H. E. . Hydraulic analysis of skimming flows along stepped chutes. In: 6th OpenFOAM Workshop, 2011, State College. Proceedings of 6th OpenFOAM Workshop, 2011.

LOBOSCO, J. R. ; DANGELO, J. V. H. . Avaliação do desempenho Termodinâmico de ciclos de Refrigeração utilizando Misturas de Refrigerantes. In: Encontro de Pesquisa da Faculdade de Engenharia Química, 2007, Campinas. V- Encontro de Pesquisa da Faculdade de Engenharia Química, 2007.

LOBOSCO, J. R. ; ALVES, C. F. E. . Desenvolvimento de códigos computacionais didáticos para a solução numérica de problemas experimentais do Laboratório de Fluidos e Fenômenos de Transporte. In: Semana de Iniciação Científica, 2002. 11 Semana de Iniciação Científica.

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LOBOSCO, J. R. ; ALVES, C. F. E. . Desenvolvimento de códigos computacionais didáticos para a solução numérica de problemas experimentais do laboratório de Fluidos e Fenômenos de Transporte. In: Semana de Iniciação Científica, 2001, Rio de Janeiro. 10 Semana de Iniciação Científica.

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## Presented works

LOBOSCO, J. R. ; Schulz, H. E. . Análise computacional do escoamento em estruturas de vertedouros escalonados através do uso de software livre. 2011. Petropolis, Brazil.

LOBOSCO, J. R. . Multiphase analysis of skimming flow. 2011. Pennsylvania, United States.

LOBOSCO, J. R. ; Schulz, H. E. . Hydraulic analysis of skimming flows along stepped chutes. 2011. Campinas, Brazil.

LOBOSCO, J. R. ; Schulz, H. E. . Análise computacional do escoamento em estruturas de vertedouros em degraus. 2010. São José dos Campos, Brazil.

LOBOSCO, J. R. ; Schulz, H. E. . Computacional analysis of flow along stepped spillways. 2010. Buenos Aires, Argentina.

LOBOSCO, J. R. ; DANGELO, J. V. H. . Avaliação do desempenho termodinâmico de ciclos de refrigeração domésticos utilizando misturas de refrigerantes. 2008. Recife, Brazil

LOBOSCO, J. R. ; DANGELO, J. V. H. . Avaliação do desempenho Termodinâmico de ciclos de Refrigeração utilizando Misturas de Refrigerantes. 2007. Campinas, Brazil.

LOBOSCO, J. R. ; ALVES, C. F. E. . Desenvolvimento de códigos computacionais didáticos para a solução numérica de problemas experimentais do Laboratório de Fluido e Fenômenos de Transporte. 2002. Rio de Janeiro, Brazil.

LOBOSCO, J. R. ; ALVES, C. F. E. . Desenvolvimento de códigos computacionais didáticos para a solução numérica de problemas experimentais do Laboratório de Fluido e Fenômenos de Transporte. 2001. Rio de Janeiro Brazil.

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## Further publications

Schulz, H. E. ; SIMOES, A. L. A. ; LOBOSCO, J. R. . Hydrodynamics - Natural Water Bodies, 2012. (Preface).

Schulz, H. E. ; SIMOES, A. L. A. ; LOBOSCO, J. R. . Optimizing methods and tools, 2011. (Preface)

Schulz, H. E. ; SIMOES, A. L. A. ; LOBOSCO, J. R. . Hydrodynamics - Advanced Topics, 2011. (Preface)

LOBOSCO, J. R. . Reviewer of IX Scientific Journey at Federal University of São Carlos, 2011. (Editor).

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