PABLO ANDRÉS SILVA ORTIZ

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PERSONAL PROFILE

I am an Energy Engineer with an interdisciplinary background in energy resources management and energy conversion technologies, experience obtained through participation in research projects in recognized higher education institutions worldwide. I was working in the *valorization of feedstock and co-products involved in biomass conversion* at the University of Campinas (Brazil) in collaboration with the Delft University of Technology (The Netherlands). I am also a project collaborator in the *International Energy Agency* (IEA-Task 39, Brazilian Chapter). Since 2019, we have been working on *analyzing biofuel production and exploring opportunities in non-IEA countries/emerging economies*. Furthermore, I started as an *energy consultant* at the E+ Energy Transition Institute (Brazil). In this position, I am actively participating in debates related to the pillars of the energy transition in Brazil and worldwide. Thus, some contacts with sectorial institutions were established aiming to identify potential/strategic areas to implement energy efficiency/transition programs in this country and in Latin America (**i.e.** *decarbonization of the industry, low technologies in the steel sector, and hydrogen roadmap in Brazil*).

I consider myself as a responsible and committed professional, able to easily adapt to new environments and working groups, in continuous learning and personal development. I have the knowledge and ability to **select and implement energy efficient projects involving thermal areas, as well as skills concerning renewable energy sources** based on *energy and exergy analysis, techno-economic and environmental analysis/LCA, process integration and optimization of energy systems.* My goal has been to **contribute to the energy transition of a fossil-based economy to a Low Carbon bio-based economy** through Research, Teaching and Consulting activities.

EDUCATION

Post-graduate

Ph.D. MECHANICAL ENGINEERING — *Sep. 2011 - Oct. 2016*
Area of concentration: Energy and Fluids
Polytechnic School, University of São Paulo – USP (Brazil)
Ph.D. thesis: *Exergy and environmental ranking of bioethanol production routes*

Academic exchange at Industrial Process and Energy Systems Engineering (IPESE) — *(Jun. 2015 - Nov. 2015)*
Swiss Federal Institute of Technology of Lausanne (EPFL) — *Visiting researcher*

MSc. MECHANICAL ENGINEERING — *Mar. 2009 - March 2011*
Emphasis in Energy Conversion
Federal University of Itajubá – UNIFEI (Brazil)
Master thesis: *Technical and economic evaluation of IGCC systems using coal*

Graduate

Bsc. ENERGY ENGINEERING — *Mar. 2001 - March 2006*
Universidad Autónoma de Bucaramanga – UNAB (Colombia)
- *Academic scholarship (2001) and Sports scholarship (2002 - 2005)*

Graduate project: *Application of computational tools for simulating thermo-fluids processes*

OTHER COURSES

Selected activities

SPECIALIST IN ENERGY RESOURCES MANAGEMENT — *April 2006- Oct. 2007*
Universidad Autónoma de Bucaramanga - UNAB
- *Specialization scholarship from UNAB (2006 - 2007)*

Research project: *Feasibility study for the installation of a plant of biodiesel from African oil palm*

DEGREE COURSE — *July 2007*
Qualified teaching skills at UNAB

SUMMER SCHOOLS

BBW ForWerts Graduate Program Summer School - Visions in Bioeconomy — *July - Aug. 2018*
Heidelberg University-Annweiler am Trifels, Germany

BECY Summer School - Strategic Network Bioeconomy — *September 2017*
Universität Hohenheim, Germany

São Paulo Advanced School on the Present and Future of Bioenergy-FAPESP — *October 2014*
University of Campinas-UNICAMP, Brazil

UK Energy Research Centre — *July 2013*
University of Warwick-UK

PROFESSIONAL EXPERIENCE

POSTDOCTORAL FELLOW

University of Campinas-UNICAMP, Brazil — *March 2017 – June 2022*
School of Chemical Engineering (FEQ)
Laboratory of Optimization, Design and Advanced Process Control (LOPCA)
Delft University of Technology-TU Delft, the Netherlands — *(Dec. 2017 - Nov. 2018)*
Faculty of Applied Sciences, Department of Biotechnology — *Visiting researcher*
Biotechnology and Society (BTS) group
Research project: *Techno-economic and environmental assessment of biorefinery technologies*

[1] E+ Energy Transition Institute. Rio de Janeiro, Brazil
AUG. 2021 – SEP. 2022
Technical Coordinator
Research Activities:
- Support medium and long-term planning strategy, aligned with the E+ Institute strategic goals;
- Establish contacts with sectorial institutions; seeking, receiving and evaluating collaboration proposals, identifying potential partners for joint activities;
- Build relationships and articulation with stakeholders, partners and technical service providers (national and international);
- Active monitoring of debates on energy transition in Brazil and worldwide.

[2] University of Campinas (UNICAMP), Brazil
MAR. 2017 – JUN. 2022
Postdoctoral researcher at the Laboratory of Optimization, Design and Advanced Process Control (LOPCA), School of Chemical Engineering
Teaching Assistant: **Courses**
- Unit Operations III - EQ852
- Techno-Economic Analysis - EQ791
- Topics in Chemical Engineering III - IQ474A

[3] Delft University of Technology (TU Delft), the Netherlands
DEC. 2017 – Nov. 2018 (collaboration research in progress)
Postdoctoral researcher at the Biotechnology and Society (BTS) group
Project: 'Techno-economic and environmental assessment of biorefinery technologies'
Teaching Assistant: Sustainable Entrepreneurship - 4052MAVEOY

[4] École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
JUN. 2015 - NOV. 2015
Researcher at the Industrial Process and Energy Systems Engineering group
Project: 'Exergy and environmental ranking of bioethanol production routes'

[5] Polytechnic School - University of São Paulo (USP), Brazil
AUG. 2011 – OCT. 2016
Researcher and teaching assistant
Laboratory of Environmental and Thermal Engineering (LETE)
Project: 'Exergetic, Thermo-economic and Exergo-environmental Analysis of Energy Conversion Processes'
Teaching Assistant: Mechanical Engineering Department

[6] Universidad Autónoma de Bucaramanga (UNAB), Colombia
Researcher and teaching assistant at the Energy Engineering Faculty.
Research Activities:
- Selective Dissemination Information Research Group
  FEB. 2004 – DEC. 2006 (*Coordinator*)
  Energy Engineering and Systems Engineering programs

Teaching Assistant:
- Electrical Machines Laboratory
  JUN. 2005 – DEC. 2005

Courses: APR. 2007 – DEC. 2007
- Colombian Energy Systems,
- Resources and the Geopolitics of Energy,
- Power Transmission and Distribution.

[7] Universidad Autónoma de Bucaramanga (UNAB) and Colombian Petroleum Institute (ICP-ECOPETROL)
JUN. 2006 – DEC. 2007
Technological Forums Coordinator
Research field: Natural Gas Liquid, Mature Field, Knowledge Management, Maintenance, Integrity and Operational Equipment Reliability.
FEB. 2008 – JUN. 2008
Research Project: Energy Project Analyst

HONOURS

PRIZES

Best Poster Award for presenting the poster entitled "*Exergy analysis of thermochemical and biochemical pathways for bioethanol production"* at the International Congress and Expo on Biofuels and Bioenergy held on August 25-27, 2015 Valencia, Spain.

FELLOWSHIPS

- Postdoctoral fellow from FAPESP-São Paulo Research Foundation (2017 – 2022), Brazil.
- COIMBRA GROUP Scholarship Programme for Young Professors and Researchers from Latin American (KU Leuven, Belgium, 2022).
- Ph.D. scholarship from FAPESP-São Paulo Research Foundation (2013 – 2016), Brazil.
- Ph.D. scholarship from CNPq-National Council for Scientific and Technological Development (2011 – 2012), Brazil.
- Master scholarship from CAPES-Coordination for the Improvement of Higher Education Personnel (2009 - 2011), Brazil.
- Specialization scholarship from UNAB (2006 - 2007), Colombia.
- Graduate scholarship from UNAB (Academic 2001) and (Sports 2002 to 2005), Colombia.

ADDITIONAL INFORMATION

General Skills	▪ Ability to select and implement energy efficient projects. ▪ Basic knowledge of the main applications of renewable energy sources. ▪ Industrial experience in energy markets and best practices in the energy sector.
Soft Skills	*Communication - Professionalism - Responsibility* *Teamwork - Self-Motivation - Leadership*
Technical Skills	*Software and Programming Languages:* GATECYCLE, ASPEN PLUS, ASPEN HYSYS, CYCLEPAD, Open LCA, SIMAPRO, EES, MATLAB, Python, C++, Macromedia, CorelDraw, AutoCAD and MS-Office.
Interests	*Sport: Tennis, Badminton, Chess, Soccer and Mountain biking.* *Music: Guitar player, Instrumental music, Jazz and Blues.*

LANGUAGES

SPANISH	*mother language*
ENGLISH	*advanced level*
PORTUGUESE	*advanced level*
FRENCH	*intermediate level*

PUBLICATIONS:

I am the author/co-author of **11 publications** in peer-reviewed scientific journals. I am also the author of 19 and co-author of 3 conference proceedings (**22 peer-reviewed**) papers. *More details*:
ORCID: https://orcid.org/0000-0002-8352-7961
Scopus: https://www.scopus.com/authid/detail.uri?authorId=56179227100
Google Scholar: https://scholar.google.com.br/citations?hl=pt-BR&user=wuxwaEEAAAAJ

JOURNAL REVIEWER

Applied Energy - Elsevier Journal; Chemical Engineering Science - Elsevier Journal; Energy - Elsevier Journal;
Energy Conversion and Management - Elsevier Journal; Journal of Cleaner Production - Elsevier; Int. Journal of Exergy - Inderscience.

ASSOCIATIONS

- Member of the Life Cycle Initiative

Since 2020 collaborating in LCA and circular economy.

- Collaborator of the International Energy Agency (IEA), Chapter Brazil.

From 2019 to 2022 working in the analysis of biofuels production and use in non-IEA countries/emerging economies.

- Member of the Bioenergy Society, Brazil

Since 2014 collaborating in the Brazilian Bioenergy Science and Technology Conference.

- IAEE - International Association for Energy Economics. Brazilian Group.

Participation in the Future of Energy: Global Challenges, Diverse Solutions - A Latin America Perspective meeting and Member of the Renewable Energy Systems group (2009-2011).

LIST OF PUBLICATIONS

PEER-REVIEWED PAPERS

[1] *EXERGY AND ECONOMIC ASSESSMENT OF RENEWABLE ELECTRICITY GENERATION FROM SUGARCANE STRAW FOR IMPROVED EFFICIENCY OF SUGARCANE BIOREFINERIES*
Pablo Silva Ortiz, Daniel Flórez-Orrego, Adriano Pinto Mariano, Vyacheslav Kafarov, Silvio de Oliveira, Rubens Maciel Filho
Int. J. Exergy, Vol. 38, No. 2 (2022), https://www.inderscienceonline.com/doi/abs/10.1504/IJEX.2022.123606

[2] *SUSTAINABILITY ASSESSMENT OF ETHANOL AND BIODIESEL PRODUCTION IN ARGENTINA, BRAZIL, COLOMBIA, AND GUATEMALA*
Nicholas Canabarro, Pablo Silva Ortiz, Luiz Horta Nogueira, Heitor Cantarella, Rubens Maciel Filho, and Glaucia Mendes Souza
Renewable and Sustainable Energy Reviews, October 2022

[3] *COMPARATIVE TECHNO-ECONOMIC AND EXERGETIC ANALYSIS OF CIRCULATING AND DUAL BED BIOMASS GASIFICATION SYSTEMS*
Pablo Silva Ortiz, Simon Maier, Ralph-Uwe Dietrich, Adriano Pinto Mariano, Rubens Maciel Filho, John Posada
Front. Chem. Eng. (2021), Open Access. https://www.frontiersin.org/articles/10.3389/fceng.2021.727068/full

[4] *GRAPHICAL ANALYSIS OF PLANT-WIDE HEAT CASCADE FOR INCREASING ENERGY EFFICIENCY IN THE PRODUCTION OF ETHANOL AND SUGAR FROM SUGARCANE*
Jean-Christophe Bonhivers, Pablo Silva Ortiz, Christopher Reddick, Carlos Vaz Rossell, Adriano Pinto Mariano, Rubens Maciel Filho
Process Integr Optim Sustain (2021), Springer. https://doi.org/10.1007/s41660-020-00149-0

[5] *UNIT EXERGY COST AND SPECIFIC CO_2 EMISSIONS OF THE ELECTRICITY GENERATION IN THE NETHERLANDS*
Pablo Silva Ortiz, Daniel Flórez-Orrego, Silvio de Oliveira Jr., Rubens Maciel Filho, Patricia Osseweijer, John Posada
Energy, 118279, 2020. https://doi.org/10.1016/j.energy.2020.118279

[6] *EXERGY ASSESSMENT AND TECHNO-ECONOMIC OPTIMIZATION OF BIOETHANOL PRODUCTION ROUTES*
Pablo Silva Ortiz, François Maréchal, Silvio de Oliveira Jr.
Fuel (279), 118327, November 2020. https://doi.org/10.1016/j.fuel.2020.118327

[7] *MASS AND HEAT INTEGRATION IN ETHANOL PRODUCTION MILLS FOR ENHANCED PROCESS EFFICIENCY AND EXERGY-BASED RENEWABILITY PERFORMANCE*
Pablo Silva Ortiz, Rubens Maciel Filho, John Posada
Processes 7 (10), 670, 2019. https://doi.org/10.3390/pr7100670

[8] *EXERGETIC, ENVIRONMENTAL AND ECONOMIC ASSESSMENT OF SUGARCANE FIRST-GENERATION BIOREFINERIES*
Pablo Silva Ortiz, Daniel Flórez-Orrego, Silvio de Oliveira Junior, François Maréchal, Rubens Maciel Filho
Journal of Power Technologies 99 (2), 2019. https://papers.itc.pw.edu.pl/index.php/JPT/article/view/1517

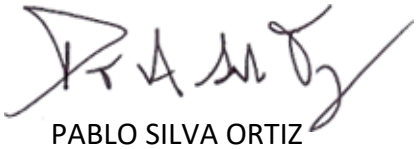
[9] *COMPARATIVE PERFORMANCE INDEXES FOR ETHANOL PRODUCTION BASED ON AUTONOMOUS AND ANNEXED SUGARCANE PLANTS*
Pablo Andrés Silva Ortiz, Rubens Maciel Filho
ISBN 978-88-95608- 62-4; ISSN 2283-9216. Chemical Engineering Transactions, Vol. 65, 2018. https://doi.org/10.3303/CET1865105

[10] *COMPARED EXERGY ANALYSIS OF SUGARCANE BAGASSE SEQUENTIAL HYDROLYSIS AND FERMENTATION AND SIMULTANEOUS SACCHARIFICATION AND FERMENTATION*
Pablo A. Silva Ortiz, Silvio de Oliveira Junior
Int. J. Exergy, Vol. 19, No. 4, 2016. https://doi.org/10.1504/IJEX.2016.075880

[11] *EXERGY ANALYSIS OF PRETREATMENT PROCESSES OF BIOETHANOL PRODUCTION BASED ON SUGARCANE BAGASSE*
Pablo A. Silva Ortiz, Silvio de Oliveira Junior
Energy 76, p. 130-138, 2014. https://doi.org/10.1016/j.energy.2014.04.090

REFERENCES

Available upon request.



PABLO SILVA ORTIZ
24 - 10 - 2022