Bárbara Alencar, B. Sciences, Ph.D.

Av. João Batista Morato do Canto, 1400, Campinas - SP, 13031-390. Phone: +55 (11) 97605-6739;
barbara.ribeiro.dbbs@gmail.com

CURRICULUM VITAE

RESUME

I am a biologist with a PhD in Biological Sciences, an MBA in Project Management and a solid background in applied research in the areas of fermentation, bioenergy, bioprocesses and biorefineries. I have experience in microbial cultivation, chromatography, fermentation, enzymatic conversion and product separation and purification steps. In other words, I have extensive experience in the upstream and downstream stages of bioprocesses, from laboratory to pilot scale. I have also worked with molecular techniques, from qPCR to cell transformation processes. I have experience with statistical tools (such as DOE - Design of Experiments), as well as mastery of analytical techniques (HPLC, GC/MS, NMR, among others). I communicate fluently in English and Spanish, both written and oral. I have managed multidisciplinary projects funded by CNPq and FACEPE, and have a good command of tools such as the PMBOK guide, SWOT analysis and Microsoft Project. I have a highly collaborative and results-oriented profile, with strong analytical skills for planning, execution, data analysis and troubleshooting bioprocesses. I believe in the power of collaboration, innovation and technical leadership as key elements for the success of research and technological development centers.

SKILLS

Biofuel production (1G, 1.5G and 2G)
Experience in cellulosic ethanol production, biomass pre-treatment, fermentation and valorization of co-products.

Project management and strategic decision-making
Expert in tools such as SWOT analysis, the PMBOK guide and Microsoft Project, among others, which help to manage projects and decision-making more efficiently.

Upstream Processing (USP) & Bioreactor Operation
Extensive background in upstream processing, including operation of laboratory and pilot-scale bioreactors (100 mL to 350 L).

Mentoring and team leadership
Experienced leader, mentor and instructor of research lines and undergraduate and postgraduate students, promoting skills development and knowledge transfer in research groups.

Analytical Methods
Skilled in HPLC, GC/MS, NMR, XPS, SEM-EDS, and other analytical methods supporting upstream process development and validation.

Problem-solving and process optimization
Strong problem-solving skills and application of statistical tools (e.g. Design of Experiments) for continuous improvement and process robustness.

EDUCATION

MBA in Project management **2024 - 2025**
Anhanguera University, São Paulo, Brazil

Artificial intelligence and Science data specialist **2024-2024**
Anhanguera University, São Paulo, Brazil

Ph.D. in Biological Sciences (10/10) **2018–2022**
Federal University of Pernambuco, Pernambuco, Brazil
Thesis: Evaluation of the Potential for Ethanol Production from Lignocellulosic Biomass and Molasses as an Energy Alternative for the Sugarcane Off-Season in the State of Pernambuco

M.S. in Biotechnology (10/10) **2016–2018**
Federal University of Pernambuco, Pernambuco, Brazil
Thesis: Optimization of High-Solids Enzymatic Hydrolysis of Cactus Pear for Bioethanol Production

B.S. in Biological Sciences (9.3/10) **2011–2015**
Federal University of Pernambuco, Pernambuco, Brazil
Thesis: Effect of Pretreatment and Surfactant Addition on the Enzymatic Hydrolysis of Office Paper Waste

PROFESSIONAL APPOINTMENTS

Biologist Researcher for Bioprocess Development **08/2025 - currently**
Syngenta Crop Protection
Paulínia, Brazil

Senior Technology Development Analyst **01/2025 - 08/2025**
Brazilian Center for Research in Energy and Materials – CNPEM
Campinas, SP, Brazil

Postdoctoral Researcher **09/2023 – 12/2024**
Brazilian Center for Research in Energy and Materials – CNPEM
Campinas, SP, Brazil

Visiting Researcher **03/2023 – 08/2023**
University of Manitoba
Winnipeg, Manitoba, Canada

Professor **08/2022 – 02/2023**
Escada University
Escada, Pernambuco, Brazil

Partner and scientific consultant **07/2022 – 08/2023**
Biotec Innovations Startup
Recife, Pernambuco, Brazil

Postdoctoral Researcher **02/2022 – 03/2023**
Federal University of Pernambuco
Recife, Pernambuco, Brazil

Undergraduate Teaching Assistant **02/2012 – 12/2015**
Federal University of Pernambuco
Recife, Pernambuco, Brazil

TEACHING EXPERIENCE

Professor **08/2022 – 02/2023**
Escada University
Responsibilities: Taught biochemistry and biophysics to nutrition, pharmacy, nursing and physical education students.

Undergraduate Teaching Assistant **2012-2015**
Federal University of Pernambuco
Course: Experimental chemistry, Bachelor's in Biological sciences
Responsibilities: I delivered all the lectures for the course under the supervision of the course professor. Additionally, I prepared and taught practical lab classes.

Undergraduate Teaching Assistant **2014-2014**
Federal University of Pernambuco
Course: Biotechnology
Responsibilities: I delivered several lectures and tutorials, substituting for the course professor as needed. I also assisted in the practical classes at the laboratory.

RESEARCH EXPERIENCE

Postdoctoral Researcher **09/2023 – 12/2024**
Brazilian Center for Research in Energy and Materials – Campinas, SP, Brazil
Brazilian Biorenewables Laboratory
Supervisor: Dr. Carlos Driemeier
My research is focused on the production of biochar and bio-oil from the enzymatic hydrolysis of sugarcane bagasse, with the objective of mitigating greenhouse gas emissions. I have conducted pre-treatments by steam explosion and enzymatic hydrolysis in bench-scale reactors and in a pilot plant, for both processes. In addition, I supervise trainees. I employ analytical techniques such as HPLC, GC/MS, NMR, and XPS.

Visiting Researcher **03/2023 – 08/2023**
University of Manitoba, Winnipeg – MB, Canada
Department of Biosystems Engineering
Supervisor: Prof. Dr. David Levin
I undertook a research project investigating the degradation of polycyclic aromatic hydrocarbons by bacteria isolated from oil deposits on the Brazilian coast. I employed high-performance liquid

chromatography (HPLC) for the quantification of the samples, in addition to DNA extraction and quantitative polymerase chain reaction (qPCR) for genomic analysis. This research was funded by the National Council for Scientific and Technological Development – CNPQ.

Postdoctoral Researcher **03/2022 – 02/2023**
Federal University of Pernambuco – Recife, PE, Brazil
Energy Nuclear Department
Supervisor: Prof. Dr. Romulo Menezes
I have developed a research project investigating the integrated production of ethanol and 1,3-PDO from food waste. To quantify the compounds, I employed high-performance liquid chromatography (HPLC). I also carried out the physico-chemical characterization of the biomass, as well as pre-treatment and enzymatic hydrolysis tests. The findings were disseminated in Bioresource Technology Reports (CiteScore 7.2) and scientific events. I had co-advised master's and doctoral students and managed research projects. This research was funded by the Science and Technology Support Foundation of Pernambuco – FACEPE.

PhD Researcher **03/2018 – 02/2022**
Federal University of Pernambuco – Recife, PE, Brazil
Genetic Department
Supervisor: Prof. Dr. Marcos Morais
I conducted research on ethanol production by formulating blends with acid hydrolysates of sweet sorghum, cactus pear, and sugarcane bagasse and molasses. The blends were fermented by Saccharomyces cerevisiae *and* Meyerozyma caribbica. *At the same time, research was also carried out into the appropriate solids content, harvest time and drying time for cactus pear to optimize enzymatic hydrolysis. In addition, I also researched the evaluation of the recycling of the liquid fraction from acid, alkaline and oxidative-alkaline pre-treatments in the treatment of sugarcane bagasse biomass. During this period, 7 papers were published, among which we highlight those published in Renewable Energy (I.F. 9.0), Journal of Fungi (I.F. 4.2), Biomass Conversion and Biorefinery (I.F 3.5).*

MS Researcher **03/2016 – 02/2018**
Federal University of Pernambuco – Recife, PE, Brazil
Genetic Department
Supervisor: Prof. Dr. Marcos Morais
I carried out research to optimize the enzymatic hydrolysis of cactus pear with a high solids load. The hydrolysates were fermented by Saccharomyces cerevisiae. *I also researched the recycling of the liquid fraction from alkaline hydrogen peroxide pretreatment for corn stover treatment. I also published a review of this type of pretreatment and research on the production of first- and second-generation ethanol from sweet sorghum. During this period, 5 papers were published, including two in Bioresource Technology (I.F. 9.7) and one in Biomass Conversion and Biorefinery (I.F. 3.5).*

Undergraduate Researcher
Federal University of Pernambuco – Recife, PE, Brazil **08/2013 – 12/2015**
Antibiotics Department
Supervisor: Prof. Dr. Ester Andrade
I conducted research on the production of ethanol from acidic and enzymatic hydrolysates of waste office paper. The hydrolysates were fermented by Saccharomyces cerevisiae *and* Spathaspora passalidarum. *The influence of pre-treatment with dilute acid and the addition of surfactants on the enzymatic hydrolysis was also evaluated. Two papers were published in Cellulose Chemistry and Technology (I.F. 1.47).*

PUBLICATIONS

Published In Peer-Reviewed Journals

GOMES, GUSTAVO R.; DE JESUS, ESTER G.; JACINTHO, JAQUELINE C. C.; GARCÍA, DIANA L. G.; **ALENCAR, BÁRBARA R. A.**; GABETTO, FERNANDA P.; GOMES, JOICE J.; CARVALHO, JOÃO L. N.; STRAUSS, MATHIAS; DRIEMEIER, CARLOS. Peculiarities of bio-oil and biochar obtained from the lignin-rich residue of the enzymatic hydrolysis of sugarcane bagasse. Renewable Energy, 122282, 2025**.**
DOI: https://doi.org/10.1016/j.renene.2024.122282

ALENCAR, BÁRBARA RIBEIRO ALVES; DA SILVA, SUZYANE PORFÍRIO ; DA SILVA, TASSIA CRISTINA ; DO VALLE, DANIELA SILVA GOMES MOREIRA ; DE SOUZA, RAFAEL BARROS ; DUTRA, EMMANUEL DAMILANO ; JÚNIOR, MARCOS ANTONIO MORAIS ; MENEZES, RÔMULO SIMÕES CEZAR. Integrated production of ethanol and 1,3-propanediol from food waste enzymatic hydrolysates in a biorefinery approach. Bioresource Technology Reports, v. 1, p. 101934, 2024.
DOI: doi.org/10.1016/j.biteb.2024.101934

ALENCAR, BÁRBARA RIBEIRO ALVES; DE FREITAS, RENAN ANDERSON ALVES ; GUIMARÃES, VICTOR EMANUEL PETRÍCIO ; SILVA, RAYSSA KARLA ; ELSZTEIN, CAROLINA ; DA SILVA, SUZYANNE PORFÍRIO ; DUTRA, EMMANUEL DAMILANO ; DE MORAIS JUNIOR, MARCOS ANTONIO ; DE SOUZA, RAFAEL BARROS . Meyerozyma caribbica Isolated from Vinasse-Irrigated Sugarcane Plantation Soil: A Promising Yeast for Ethanol and Xylitol Production in Biorefineries. JOURNAL OF FUNGI, v. 9, p. 789, 2023.
DOI: doi.org/10.3390/jof9080789

VAZ, FERNANDA LEITÃO ; DA ROCHA LINS, JENNYFER ; **ALVES ALENCAR, BÁRBARA RIBEIRO** ; SILVA DE ABREU, ÍTHALO BARBOSA ; VIDAL, ESTEBAN ESPINOSA ; RIBEIRO, ESTER ; VALADARES DE SÁ BARRETTO SAMPAIO, EVERARDO ; CEZAR MENEZES, RÔMULO SIMÕES ; DUTRA, EMMANUEL DAMILANO. Chemical pretreatment of sugarcane bagasse with liquid fraction recycling. RENEWABLE ENERGY, v. 174, p. 666-673, 2021.
DOI: doi.org/10.1016/j.renene.2021.04.087

PADILHA, CARLOS EDUARDO DE ARAÚJO ; NOGUEIRA, CLEITIANE DA COSTA ; **ALENCAR, BÁRBARA RIBEIRO ALVES** ; DE ABREU, ÍTHALO BARBOSA SILVA ; DUTRA, EMMANUEL DAMILANO ; RUIZ, JUAN ALBERTO CHAVEZ ; SOUZA, DOMINGOS FABIANO DE SANTANA; DOS SANTOS, EVERALDO SILVINO . Production and Application of Lignin-Based Chemicals and Materials in the Cellulosic Ethanol Production: An Overview on Lignin Closed-Loop Biorefinery Approaches. Waste and Biomass Valorization, v. 1, p. 1-29, 2021.
DOI: doi.org/10.1007/s12649-021-01455-5

DE MORAIS ANDRADE, MONALIZA MIRELLA; **ALENCAR, BÁRBARA RIBEIRO ALVES**; LEITE, NATHALIA PEREIRA ; FIRMO, ALESSANDRA LEE BARBOSA ; DUTRA, EMMANUEL DAMILANO ; DE SÁ BARRETTO SAMPAIO, EVERARDO VALADARES ; MENEZES, RÔMULO SIMÕES CEZAR . Biogas production from co-digestion of different proportions of food waste and fresh bovine manure. BIOMASS CONVERSION AND BIOREFINERY, v. 1, p. 1-8, 2020.
DOI: doi.org/10.1007/s13399-020-00833-8

ALENCAR, BÁRBARA RIBEIRO ALVES; MEDEIROS, NILSON ; DA SILVA, CAROLAINE LARISSA LIRA ; TORRES, ALDO ; DUTRA, EMMANUEL DAMILANO ; DE SÁ BARRETO SAMPAIO, EVERARDO VALADARES ; MENEZES, RÔMULO SIMÕES CEZAR ; MORAIS JÚNIOR, MARCOS ANTÔNIO . Bioethanol production

from cactus cladode biomass: considerations of harvesting time, dry matter concentrations, and enzymatic hydrolysis. BIOMASS CONVERSION AND BIOREFINERY, v. 1, p. 1-8, 2020.
DOI: doi.org/10.1007/s13399-020-00960-2

ALENCAR, BÁRBARA RIBEIRO ALVES; VAZ, FERNANDA LEITÃO ; BARBOSA NETO, ADAUTO GOMES ; AQUINO, KATIA APARECIDA ; SAMPAIO, EVERARDO VALADARES DE SA BARRETTO ; MENEZES, RÔMULO SIMÕES CEZAR ; DUTRA, EMMANUEL DAMILANO . Concentration of Alkaline Hydrogen Peroxide (AHP) Affects the Recycle of the Liquid Fraction in the Pre-treatment and Enzymatic Hydrolysis of Corn Stover. Waste and Biomass Valorization, v. 11, p. 6179-6188, 2020.
DOI: doi.org/10.1007/s12649-019-00884-7

VAZ, FERNANDA LEITÃO ; DE SOUZA, RAQUEL DE FÁTIMA RODRIGUES ; DUTRA, EMMANUEL DAMILANO ; **ALENCAR, BÁRBARA RIBEIRO ALVES** ; VIDAL, ESTEBAN ESPINOSA . Valorization of Sugar-Ethanol Industry Waste Vinasse for Increased Second-Generation Ethanol Production Using Spathaspora passalidarum Yeast Strains. Sugar Tech, v. 1, p. 1-8, 2019.
DOI: doi.org/10.1007/s12355-018-0691-2

ALENCAR, BÁRBARA RIBEIRO ALVES; DUTRA, EMMANUEL DAMILANO ; DE SÁ BARRETTO SAMPAIO, EVERARDO VALADARES ; MENEZES, RÔMULO SIMÕES CEZAR ; ANTÔNIO MORAIS, MARCOS . Enzymatic hydrolysis of cactus pear varieties with high solids loading for bioethanol production. BIORESOURCE TECHNOLOGY, v. 250, p. 273-280, 2018.
DOI: doi.org/10.1016/j.biortech.2017.11.042

DUTRA, EMMANUEL DAMILANO ; **ALENCAR, B.R.A.** ; J.J. Galdino ; J. N. Tabosa ; MENEZES, R. S. C. ; R. N. A. Filho ; PRIMO, D. C. ; PISCOYA, V. C. ; ANTUNES, J. E. L. . First and Second Generation of Ethanol Production for Five Sweet Sorghum Cultivars During Soft Dough Grain. Journal of Experimental Agriculture International, v. 25, p. 1-12, 2018.
DOI: 10.9734/JEAI/2018/42742

ALENCAR, B.R.A.; ROCHA, J. M. T. S. ; GOUVEIA, E. R. . Effect of the addition of Tween-80 in dilute acid pretreatment of waste Office paper on enzymatic hydrolysis for bioethanol production by SHF and SSF processes. CELLULOSE CHEMISTRY AND TECHNOLOGY, v. 51, p. 121-126, 2017.

MANUSCRIPTS SUBMITTED OR UNDER REVIEW

VALLE, D. S. G. M.; TEOTÔNIO, M. A.; SECUNDINO, J. M. G.; SILVA, T. C.; BENVENUTO, E. A. S.; ALBUQUERQUE, A. A.; **ALENCAR, B. R. A.**; SILVA, A. N.; SILVA, S. P. R. da; CARVALHO, R. R. C. e; DUTRA, E. D.; MENEZES, R. S. C. Reclaimed Water for Anaerobic Digestion of Cattle Manure in Semiarid Regions: Enhancing Biogas Yield and Biofertilizer Efficiency for Sustainable Resource Management. Bioresource Technology.

BOOK CHAPTERS

Menezes, R. S. C. ; **ALENCAR, B.R.A.** ; DUTRA, E. D. ; J. N. Tabosa . POTENCIAL DE PRODUÇÃO DE ETANOL A PARTIR DA BIOMASSA DE SORGO SACARINO. In: José Nildo Tabosa. (Org.). POTENCIAL DE PRODUÇÃO DE ETANOL A PARTIR DA BIOMASSA DE SORGO SACARINO. 2ed.recife: Editora UFRPE, 2020, v. 15, p. 71-74.

PATENTS

ALENCAR, BÁRBARA RIBEIRO ALVES; DA SILVA, SUZYANE PORFÍRIO; DOS SANTOS, IZABELA MARIA. Patent: Innovation Privilege. Register number: BR102024012211-9, title: “PROCESS FOR PECTIN EXTRACTION FROM CACTUS (*Opuntia ssp*.). 2024, Brazil”, Registration institution: INPI - Instituto Nacional da Propriedade Industrial. Deposit: 15/06/**2024.**

SANTOS, S. F. M.; PARAIBA, U. F.; SOUSA, C. A. B.; OLIVEIRA, C. Z. ; MELO, D. J. N. ; SILVA, D. C. ; GUEDES JUNIOR, G. A. ; NOBREGA, R. Q. ; SANTOS, F. A. ; **ALENCAR, B. R. A**. . Patent: Innovation Privilege. Register number: BR1020210260408, title " PROCESS FOR OBTAINING BIOSURFACTANT IN CULTURE MEDIA WITH SUGARCANE JUICE AND AVOCADO OIL. 2021, Brazil.", Registration institution: INPI - Instituto Nacional da Propriedade Industrial. Deposit: 22/12/**2021**.

PRESENTATIONS

I BRAZILIAN CONGRESS OF INDUSTRIAL BIOTECHNOLOGY. Transforming the lignin-rich residues of sugarcane bagasse bioconversion into bio-oil and biochar. 2024. Oral Presentation.

I BRAZILIAN CONGRESS OF INDUSTRIAL BIOTECHNOLOGY. Integrated production of ethanol and 1,3-propanediol from food waste enzymatic hydrolysates in a biorefinery approach. 2024. Poster Presentation.

VIII ENVIRONMENT WEEK of the Federal Institute of Pernambuco - Cabo de Santo Agostinho Campus. EXPERIENCES IN SOLID WASTE MANAGEMENT - BERSO. 2022. Oral Presentation.

XXIII National Bioprocess Symposium / XIV Seminar on Enzymatic Hydrolysis of Biomass / XIV Brazilian Seminar on Enzymatic Technology. INFLUENCE OF CARBOHYDRATES CONCENTRATION FROM MOLASSES AND ACIDS HYDROLYSATES BLENDS ON ETHANOL PRODUCTION BY Meyerozyma Caribbica. 2022. Poster Presentation.

XXIII National Symposium on Bioprocesses / XIV Seminar on Enzymatic Hydrolysis of Biomasses / XIV Brazilian Seminar on Enzymatic Technology. BIOETHANOL FROM FOOD WASTE: A COMPARATIVE STUDY OF AN ACIDIC AND AN ENZYMATIC PATHWAYS. 2022. Poster Presentation.

XXII NATIONAL SYMPOSIUM ON BIOPROCESSES - SINAFERM XIII SEMINAR ON ENZYMATIC HYDROLYSIS OF BIOMASS - SHEB. “RECYCLING THE LIQUID FRACTION IN ALKALINE PRE-TREATMENT OF SUGARCANE BAGASSE”. 2019. Poster Presentation.

II Meeting of the Postgraduate Program in Biotechnology. Optimization of enzymatic hydrolysis of cactus pear varieties for bioethanol production. 2018. Oral Presentation.

XXI NATIONAL BIOPROCESS SYMPOSIUM - SINAFERM XII SEMINAR ON ENZYMATIC HYDROLYSIS OF BIOMASS - SHEB. What is the influence of recycling the liquid fraction of pretreatment with alkaline hydrogen peroxide in the corn stover biomass? Part 1. 2017. Poster Presentation.

XII Brazilian Seminar on Enzymatic Technology. Influence of biosurfactant rhamnolipid on the enzymatic hydrolysis of waste office paper. 2016. Poster Presentation.

XX NATIONAL SYMPOSIUM ON BIOPROCESSES - SINAFERM XI SEMINAR ON ENZYMATIC HYDROLYSIS OF BIOMASS - SHEB. Effect of the addition of Tween-80 in dilute acid pretreatment of waste Office paper on enzymatic hydrolysis for bioethanol production by SHF and SSF processes. 2015. Poster Presentation.

Workshop on Yeasts of Industrial Interest. Increased ethanol production from enzymatic hydrolysis of sugarcane bagasse in fed batch. 2014. Poster Presentation.

XX Brazilian Congress of Chemical Engineering. Comparison of bioethanol production from waste office paper by Spathaspora passalidarum HMD 14.2 using acid and enzymatic hydrolysis. 2014. Poster Presentation.

XX Brazilian Congress of Chemical Engineering. Enzymatic hydrolysis of waste office paper with and without pretreatment with dilute sulfuric acid. 2014. Poster Presentation.

FELLOWSHIPS

Postdoctoral fellowship **2023 – 2025**
Sao Paulo Research Foundation – FAPESP
Role: Postdoctoral Fellow; US$ 30,000.00

Visiting Researcher **2023 – 2023**
National Council for Scientific and Technological Development – CNPQ
Role: Visiting researcher; US$ 13,800.00

Postdoctoral fellowship **2022 – 2023**
Science and Technology Support Foundation of Pernambuco – FACEPE
Role: Postdoctoral Fellow; US$ 10,000.00

PhD scholarship **2018 – 2022**
National Council for Scientific and Technological Development – CNPQ
Role: PhD fellow; US$ 34,000.00

MS scholarship **2016 – 2018**
Coordination for the Improvement of Higher Education Personnel – CAPES
Role: Graduate fellow; US$ 13,000.00

GRANTS

Evaluation and improvement of the Biodigestor Sertanejo in the generation of biogas and production of biofertilizer and food from the use of wastewater, saline water and manure of different qualities **2022 – 2023**
Principal Investigator: Dr. Romulo Menezes
Federal University of Pernambuco – Recife, PE, Brazil
Science and Technology Support Foundation of Pernambuco – FACEPE; US$ 50,000.00
Role: Co-author and ongoing collaborator. I contributed to the writing and submission of the project and collaborated in training graduate students.

Consolidation of the Biodigestor Sertanejo as a social technology and an inclusive tool for economically vulnerable rural families in Pernambuco's semi-arid region **2022 – 2023**

Principal Investigator: Dr. Antonio Antonino
Federal University of Pernambuco – Recife, PE, Brazil
Science and Technology Support Foundation of Pernambuco – FACEPE; US$ 50,000.00
Role: Co-author and ongoing collaborator. I contributed to the writing and submission of the project and collaborated in training graduate students.

Valorization of organic waste from the sugar-energy sector to produce sustainable energy and high added-value chemical products (VALORA-SUCRO SP/PE) **2022 - 2023**

Principal Investigator: Dr. Marcos Morais
Federal University of Pernambuco – Recife, PE, Brazil
Science and Technology Support Foundation of Pernambuco – FACEPE and Sao Paulo Research Foundation – FAPESP; US$ 150,000.00
Role: Co-author and ongoing collaborator. I contributed to the writing and submission of the project and collaborated in training graduate, master's and PhD students.

Chemical and Energy Recovery of the Organic Fraction of Municipal Solid Waste: Biotechnological Routes for Obtaining Biofuels, Chemical Products, Fertilizers and Energy (VALORA-FORSU) **2022 - 2023**

Principal Investigator: Dr. Romulo Menezes
Federal University of Pernambuco – Recife, PE, Brazil
Science and Technology Support Foundation of Pernambuco – FACEPE; US$ 50,000.00
Role: Co-author and ongoing collaborator. I contributed to the writing and submission of the project and collaborated in training graduate, master's and PhD students.

Energy use of cactus pear: selection of genotypes, development of processing routes and evaluation of the life cycle of biomass production **2018 - 2022**

Principal Investigator: Dr. Romulo Menezes
Federal University of Pernambuco – Recife, PE, Brazil
National Council for Scientific and Technological Development – CNPQ; US$ 100,000.00
Role: I conducted research on the physicochemical characterization of biomass and the production of ethanol from enzymatic hydrolysates of cactus pear.

Integrated Research for the Guarantee of Water, Food and Energy Sustainability in the Caatinga Biome (PEGASUS) **2017 - 2022**

Principal Investigator: Dr. Antonio Antonino
Federal University of Pernambuco – Recife, PE, Brazil
National Council for Scientific and Technological Development – CNPQ; US$ 1,000,000.00
Role: I conducted research on the physicochemical characterization of biomass and the production of ethanol from enzymatic hydrolysates of cactus pear.

MENTORING EXPERIENCE

Mentor for Suzyane Porfirio as PhD Student in Energy and Nuclear Technologies 2023 – 2025
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Izabella Santos as Masters Student in Energy and Nuclear Technologies 2022 – Present
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Ithalo Abreu as PhD Student in Energy and Nuclear Technologies — 2022 – 2023
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Luiz Pereira as Masters Student in Energy and Nuclear Technologies — 2022 – 2024
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Maisa Silva as Undergraduate Student in Energy engineering — 2022 – 2023
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Tássia Cristina da Silva as Masters Student in Energy and Nuclear Technologies — 2021 – 2023
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Diego Amaral as Undergraduate Student in Energy engineering — 2019 – 2021
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Gabriel Siqueira as Undergraduate Student in Energy engineering — 2019 – 2020
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Maria Emilia Silva as Undergraduate Student in Energy engineering — 2019 – 2021
Federal University of Pernambuco , Pernambuco, Brazil

Mentor for Carolaine Lira as Undergraduate Student in Energy engineering — 2018 – 2020
Federal University of Pernambuco , Pernambuco, Brazil

SERVICE & OUTREACH

PANEL MEMBER IN MS THESIS DEFENSE

Tássia Cristina da Silva – Master's in Energy and Nuclear Technologies — **2023**
Title: Energy use of green residual sisal biomass: ethanol and biochar.
Federal University of Pernambuco , Pernambuco, Brazil

Victor Emanuel Petrício Guimarães - Master's in Biotechnology — **2022**
Title: Evaluation of the yeast Meyerozyma carribica *in the fermentation of sugarcane bagasse acid hydrolysates for the bioproduction of xylitol*.
Federal University of Pernambuco , Pernambuco, Brazil

AD HOC REVIEWER

Biomass and Bioenergy (IF: 5.8) — Since 2024
Biomass Conversion and Biorefinery (IF: 3.6) — Since 2023

PROFESSIONAL MEMBERSHIPS

The Bioenergy Society - SBE — 2023 – Present

LANGUAGES

Spanish and English – Fluent
Portuguese – Native

LINKS FOR IDENTIFIERS

ORCID

https://orcid.org/0000-0002-5733-2773

Google scholar

https://scholar.google.com/citations?user=UrXdquwAAAAJ&hl=pt-BR