

Curriculum Vitae

Celyna Rackov

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EDUCATION

- **PhD in Chemical Engineering** 2011-2014
University of Sao Paulo, Brazil
Dissertation: *Innovative method of oxidants activation in the treatment of emerging and priority pollutants.*
 - ✓ **Doctorate fellowship: University of Texas at Arlington, USA.** 07/2013 - 05/2014
Civil Engineering Department
- **M.S in Chemical Engineering** 2009-2011
Federal University of Rio Grande do Norte, Brazil
- **Postgraduate Specialization Course in On Shore Environmental Licensing** 2008-2009
Federal Institute of Education, Science and Technology of Rio Grande do Norte, Brazil
- **B.S. in Chemistry** 2006-2010
Federal University of Rio Grande do Norte, UFRN, Brazil.
- **Licentiate Degree in Chemistry** 2002-2005
Federal University of Rio Grande do Norte, UFRN, Brazil.

RELEVANT EXPERIENCE

- **Adjunct Faculty -Chemistry** 2017-present
STEM Division, El Centro College, Dallas County Community College District
 - ✓ Teaching General Chemistry (In Class) to undergraduate students.
- **Special Faculty Appointment in Chemistry** 10/2016-12/2016
Natural Sciences Department – Dickinson State University - USA
 - ✓ Prepared and delivered lectures to undergraduate students on topics such as general chemistry, analytical chemistry, and laboratory class for freshman and senior students.
- **Postdoctoral Researcher** 11/2014 – 05/2016
Chemical Engineering Department - University of Sao Paulo – Brazil
 - Visiting Postdoctoral Researcher - Chemical Engineering Depart – UFRN – Brazil
 - ✓ Conducted research experiments of soil and water treatment that involved remediation techniques, experimental design, material synthesis, and analytical method development;
 - ✓ Wrote manuscript for publication in scientific journals and/or presentations;
 - ✓ Co-supervision of undergraduate and graduate students.
- **Visiting Scholar** 2013-2014
Civil Engineering Depart. - University of Texas at Arlington - USA
 - ✓ Participated of researches on technologies for water treatment and in situ remediation of contaminated groundwater and soil.
- **Online Tutor** 08/2012- 07/2013
University of Sao Paulo / Federal Environmental Ministry – Brazil
 - Identification and Management of Contaminated Sites with PCBs Technical Training Course
 - ✓ Assisted, taught and assessed the student's progress in water and soil chemistry.
- **Assistant Teacher** 07/2012-11/2012
Chemical Engineering Depart - University of Sao Paulo – Brazil
 - Unit Operations and Reactors Laboratory

- ✓ Taught experiments and its concepts involved, and evaluated students' performances on chemical laboratory reactors.
- **Chemistry Teacher of High School** 04/2005-12/2006 and 03/2010 – 02/2011
Public Schools of the Rio Grande do Norte State – Brazil
 - ✓ Prepared my own lesson plans according to the book adopted by the school as well as ensuring no student fell behind in understanding.
- **Research Trainee** 2008-2009
Environmental Licensing – IFRN/ PETROBRAS /PROMINP
 - ✓ Research of environmental permit steps in the petroleum field, discussing this instrument of environmental and public management in a simplified way, conceptualizing and describing its procedures.
- **Monitor Lab** 10/2006-02/2008
Chemistry Depart – Federal University of Rio Grande do Norte - Brazil
 - ✓ Helped students by answering their questions, assisting them in organic chemistry experiments.

AWARDS, GRANTS AND SCHOLARSHIPS

- **CNPq – DTI Program Scholarship** – to develop research activities during postdoctoral fellowship at University of Sao Paulo and Federal University of Rio Grande do Norte Brazil, CNPq from Brazilian government, 2016.
- **CAPES-PROCAD Program Scholarship** – to develop research activities during postdoctoral fellowship at the University of Sao Paulo and the Federal University of Rio Grande do Norte Brazil, CAPES from the Brazilian government, 2014 – 2015.
- **CNPq Graduate Scholarship** - to obtain Doctoral studies at the University of Sao Paulo, CNPq from Brazilian government, 2011–2014.
- **CAPES-Science without Borders International Scholarship** - to develop research activities during doctorate at the University of Texas at Arlington, CAPES from Brazilian government, 2013-2014.
- **CAPES Graduate Scholarship** – to obtain Master’s degree at Federal University of Rio Grande do Norte, CAPES from the Brazilian government, 2009-2010.
- **PROMINP/PETROBRAS** – to obtain a specialization postgraduate course in environmental licensing, PROMINP from PETROBRAS and Brazilian government, 2008-2009.

TOPICS OF RESEARCH EXPERIENCE

- **Treatment of contaminated soil and water with micro pollutants** 2011-Present
The main objectives of this research were to study analytical method development for the determination of organic contaminants in water and soil; statistical optimization of synthesis procedure and characterization of catalysts; study of priority pollutants remediation by oxidants activated with catalysts; and statistical optimization of emerging pollutants treatments using oxidants activated with UV light.
- **Environmental Licensing and Permits Reviews** 2008-2009
This research studied the environmental permit steps in the petroleum field, discussing this instrument of environmental and public management in a simplified way, conceptualizing and describing its procedures.
- **Teaching innovation** 2006-2012
Development and application of chemistry games to aid in the learning process of the students.

ACADEMIC AND COMMUNITY SERVICES

- **Remote advisor of undergraduate and graduate students** 05/2016 – Present
 - Remotely advising students from Chemical Engineering Department of the Federal University of Rio Grande do Norte – Brazil.
- **Volunteer at Comet Chemistry Camp** 07/ 2016
University of Texas at Dallas

PROFESSIONAL MEMBERSHIP

- American Chemical Society (ACS) 2013 – Present

REVIEWER

- Journal of Environmental Chemical Engineering 2013 - Present

PUBLICATIONS IN SCIENTIFIC JOURNALS

- **Silva-Rackov, C.K.O.**; Lawal, W.A.; Nfodzo, P.A.; Vianna, M.M.G.R.; Nascimento, C.A.O.; Choi, H. *Degradation of PFOA by hydrogen peroxide and persulfate activated by iron-modified diatomite*. Appl. Catal. B. 192 (5), p. 253–259, 2016.
- **Silva, C.K.O.**; Vianna, M.M.G.R.; Foletto, E.L.; Chiavone-Filho, O.; Nascimento, C.A.O. *Optimizing phenanthrene and Anthracene Oxidation by Sodium Persulfate and Fe-Modified Diatomite Using the Response Surface Method*. Water, Air and Soil Pollution. v. 226, p. 88, 2015.
- **Silva, C.K.O.**; Aguiar, L.G.; Ciriaco, M.F.; Vianna, M.M.G.R.; Nascimento, C.A. O.; Chiavone-Filho, O.; Pereira, C.G.; Folleto, E.L. *Remediation of solid matrix containing anthracene and phenanthrene by permanganate oxidant*. Global NEST Journal, v. 16, p. 394-402, 2014.
- **Silva, C. K. O.**; Nogueira, J.P.A.; Souza, H.Y.S. *Application of an educational game as a resource for chemistry teaching*. Tchê Química Journal (Printed), v. Vol. 9, p. 42, 2012.
- Souza, H.Y.S.; **Silva, C.K.O.** *Organic dices: a didactic game in chemistry teaching*. Holos (Natal, Online), v. 3, p. 107-121, 2012.

RESEARCH PRESENTATIONS (CONFERENCES, SEMINARS AND MEETINGS)

- Camara, A. G.; Ferreira, T. A.; **Silva-Rackov, C. K. O.**; Oliveira, H.N. M.; Nascimento, C.A.O.; Chiavone-Filho. *Optimization of the synthetic hormone 17 α -ethinylestradiol oxidation by sodium persulfate using the response surface method*. XXI Brazilian Congress of Chemical Engineering, Fortaleza, Brazil, 2016.
- Silva, S. S. O.; Souza, A. R.; **Silva-Rackov, C. K. O.**; Vianna, M.M.G.R.; Nascimento, C.A.O.; Chiavone-Filho. *Removal of emerging pollutants EE2 using sodium persulfate activated by diatomite*. XXI Brazilian Congress of Chemical Engineering, Fortaleza, Brazil, 2016.
- Ferreira, T. A.; Camara, A. G.; **Silva-Rackov, C. K. O.**; Oliveira, H.N. M.; Nascimento, C.A.O.; Chiavone-Filho. *Degradation of the emerging pollutant 17 α -ethinylestradiol using persulfate activated by UV radiation*. XXI Brazilian Congress of Chemical Engineering, Fortaleza, Brazil, 2016.
- Souza, A. R.; Silva, S. S. O.; **Silva-Rackov, C. K. O.**; Vianna, M.M.G.R.; Nascimento, C.A.O.; Chiavone-Filho, O. *Remediation phenanthrene-contaminated soil using sodium persulfate activated with diatomite modified by iron*. XXI Brazilian Congress of Chemical Engineering, Fortaleza, Brazil, 2016.
- Silva, A. R. C.; Ciriaco, M.F.; **Silva-Rackov, C. K. O.**; Fontana, A.; Nascimento, C.A.O.; Chiavone-Filho, O. *Remediation of phenanthrene using sodium persulfate activated by endogenous iron in soils of the Espirito Santo city*. XXI Brazilian Congress of Chemical Engineering, Fortaleza, Brazil, 2016.
- Costa-Filho, D.B.; Chiavone-Filho, O.; Nascimento, C.A.O.; **Silva-Rackov, C.K.O.**; Souza, A.R.; Vianna, M.M.G.R. *Use of sodium persulfate activated by iron-modified diatomite to remediation of phenanthrene-contaminated soil*. XXI Regional Congress of Chemical Engineering, Sao Paulo, Brazil, 2016.

- Ferreira, T.A.; Chiavone-Filho, O.; **Silva-Rackov, C.K.O.**; Camara, A.G.; Nascimento, C.A.O. *Advanced oxidation of the emerging pollutant 17 α -ethinylestradiol by persulfate activated with UV radiation*. XXI Regional Congress of Chemical Engineering, Sao Paulo, Brazil, 2016.
- **Silva, C.K.O.**; Silva, S.S.O.; Souza, A.R.; Camara, A.G.; Vianna, M.M.G.R.; Nascimento, C.A.O.; Chiavone-Filho, O. *Treatment of contaminated sandy soil with phenanthrene using sodium persulfate activated with modified diatomite*. In: 8^o Brazilian Congress of P&D in Petroleum and gas, Curitiba, Brazil, 2015.
- **Silva, C.K.O.**; Ciriaco, M.F.; Fontana, A.; Vianna, M.M.G.R.; Chiavone-Filho, O.; Nascimento, C.A.O. *Treatment of phenanthrene using activated sodium persulfate with endogenous iron present in sandy soils*. In: XXXV Brazilian Congress of Soil Science, Natal, Brazil, 2015.
- Souza, A.R.; Câmara, A.G.; Silva, S.S.O.; **Silva, C.K.O.**; Vianna, M.M.G.R.; Chiavone-Filho, O.; Nascimento, C.A.O. *Treatment of contaminated sandy soil with diesel using an innovator activation method for hydrogen peroxide*. In: XI Brazilian Congress of Scientific Initiation in Chemical Engineering, Campinas, Brazil, 2015.
- Silva, S.S.O.; Souza, A.R.; Câmara, A.G.; **Silva, C.K.O.**; Vianna, M.M.G.R.; Chiavone-Filho, O.; Nascimento, C.A.O. *Treatment of phenanthrene using sodium persulfate activated by iron-modified diatomite*. In: XI Brazilian Congress of Scientific Initiation in Chemical Engineering, Campinas, Brazil, 2015.
- **Silva, C.K.O.**; Aguiar, L.G.; Vianna, M.M.G.R.; Nascimento, C. A. O. *Kinetic study of heterogeneous degradation of phenanthrene by sodium persulfate and modified diatomite*. XX Brazilian Congress of Chemical Engineering, Florianopolis, Brazil, 2014.
- **Silva, C.K.O.**; Lawal, W.; Vianna, M.M.G.R.; Nascimento, C.A.O.; Choi, H. *Decomposition of PFOA by hydrogen peroxide catalyzed by modified diatomite*. In: 248th ACS National Meeting and Exposition, Chemistry and Global Stewardship, San Francisco - CA, 2014.
- **Silva, C.K.O.**; Vianna; M.M.G.R.; Nascimento, C.A.O.; Choi, H. *PFOA decomposition by persulfate with modified diatomite*. In: 247th ACS National Meeting & Exposition, Chemistry of Energy / Advanced Materials for New Opportunities. Dallas – Texas, 2014.
- **Silva, C.K.O.**; Vianna, M.M.G.R.; Nascimento, C.A.O.; Choi, H. *Application of modified diatomite for the activation of persulfate to decompose PFOA*. In: Texas Water, Dallas-Texas, 2014.
- **Silva, C.K.O.**; Ciriaco, M.F.; Vianna, M.M.G.R.; Nascimento, C.A.O. *Application of modified diatomite-activate persulfate oxidation of the degradation of PAHs in contaminated soil*. In: 20th International Petroleum Environmental Conference, San Antonio-Texas, 2013.
- Ciriaco, M.F.; **Silva, C.K.O.**; Vianna, M.M.G.R.; Freire, R.S. *Evaluation of polycyclic aromatic hydrocarbons degradation (PAH) in sandy soils using sodium persulfate as oxidant activated by Iron*. In: 7th Meeting on Environmental Applications of Advanced Oxidation Process, 1st Iberoamerican Congress on Advanced Oxidation Processes, Recife, PE, Brazil, 2013.
- **Silva, C.K.O.**; Ciriaco, M.F.; Chiavone-Filho, O.; Pereira, C.G.; Vianna, M.M.G.R.; Nascimento, C.A.O. *Identification of intermediates formed during oxidative treatment of contaminated soil by anthracene and phenanthrene*. In: XIX Brazilian Congress of Chemical Engineering, Buzios – RJ – Brazil, 2012.
- Sambuichi, W. H.; **Silva, C.K.O.**; Vianna, M.M.G.R.; Nascimento, C.A.O. *Treatment of contaminated Soil with polycyclic aromatic hydrocarbons*. In: 20th Undergraduate Research Symposium, São Paulo. 2012.
- **Silva, C. K. O.**; Ciriaco, M.F.; Vianna, M.M.G.R.; Nascimento, C.A.O.; Chiavone-Filho, O.; Pereira, C.G. *Mass transport study in the in situ chemical oxidation*. In: VI Meeting on Environmental Applications of Advanced Oxidation Processes, Rio de Janeiro – Brazil, 2011.
- Ciriaco, M. F.; **Silva, C. K. O.**; Vianna, M.M.G.R.; Nascimento, C.A.O.; Freire, R. S. *Remediation of sandy soils contaminated with polycyclic aromatic hydrocarbons (PAH) via Fenton and Permanganate*. In: VI Meeting on Environmental Applications of Advanced Oxidation Processes, Rio de Janeiro – Brazil, 2011.
- **Silva, C. K. O.**; Ciriaco, M. F.; Vianna, M.M.G.R.; Nascimento, C.A.O.; Chiavone-Filho, O.; Pereira, C.G. *Chemistry oxidation process by potassium permanganate in the remediation of contaminated soil with phenanthrene and anthracene*. In: XVIII Brazilian Congress of Chemical Engineering, Foz do Iguacu, Brazil, 2010.
- **Silva, C. K. O.**; Costa, I.C.C.; Reis, L.M.M. *Phytoremediation of contaminated soil by oil activity*. In: Journey of Hispano-Latin American Water Management in Contemporary: Perspectives and Dilemmas. Natal, Brazil, 2009.
- **Silva, C. K. O.**; Marques, B.C.D.; Pegado, E.A.C. *Management of produced water in environmental studies of oil activity*. Journey of Hispano-Latin American Water Management in Contemporary: Perspectives and Dilemmas. Natal, Brazil, 2009.

- Nogueira, J.P.A.; Souza, H.Y.S.; **Silva, C.K.O.**; Fernandes, N.S.; Amaral-Filho, R.B. *Chemical games as an alternative method aimed at high school*. In: XLVIII Brazilian Congress of Chemistry, Chemistry in Protecting the environment and health, Rio de Janeiro, Brazil, 2008.
- **Silva, C.K.O.**; Silva, I.M.; Cruz, A.M.F.; Ataide, M.C.E.S.; Moura, M.F.V. *Quantification of phosphate in Equine Manure*. In: XLVII Brazilian Congress of Chemistry, Natal, Brazil, 2007.
- Cruz, I.V.M.; Souto, C.R.O.; Costa, M.; **Silva, C.K.O.** *Synthesis of organic ligands polydentate for metals*. In: Scientific Initiation Congress, Natal, Brazil, 2007.
- Souto, C.R.O.; Costa, M.; **Silva, C.K.O.**; Melo, I.S.; Silva, M.J.N. *Sites and software for organic chemistry teaching*. In: 3rd Seminar of Initiation to Teaching, Natal, Brazil 2006.
- **Silva, C. K. O.**; Ferreira, J.E.A.; de Melo, J.V.; Ataide, M.C.E.S.; Martins, I.S.B.; Silva, I.M. *Use of paper chromatography as an alternative to explain several concepts in High School*. In: XLVI Brazilian Congress of Chemistry, Salvador, Brazil, 2006.
- Silva, I.M.; **Silva, C.K.O.**; Ataide, M.C.E.S.; Moura, M.F.V.; CRUZ, A.M.F.; VIEIRA, M. F. P. *Determination of nitrogen in equine manure*. In: XLVI Brazilian Congress of Chemistry, Salvador, Brazil, 2006.