

Renan L. Valenca

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WEBSITES	Official: http://www.renanvalenca.com Laboratory: https://sites.google.com/g.ucla.edu/uclasealab	
RESEARCH AND DEVELOPMENT INTERESTS	<ul style="list-style-type: none">• Improvement of climate-resilient stormwater treatment systems• Development of sustainable biotechnology for water treatment• Post-wildfire water quality management• Application of machine learning to solve environmental problems	
EDUCATION	Ph.D., Environmental Engineering, University of California, Los Angeles M.S., Civil Engineering, University of California, Los Angeles B.Sc., Chemical Engineering, Universidade Federal de Alfenas, Brazil B.Sc., Science and Technology, Universidade Federal de Alfenas, Brazil	Exp. 2022 2018 2016 2013
AWARDS	Dissertation Year Fellowship, UCLA. National Science Foundation Research Traineeship – INFEWS, UCLA. Los Angeles Urban Center Fellowship. Martin Rubin Scholarship, UCLA Minas Gerais State Agency for Research and Development Sponsorship Science Without Borders Scholarship, Università di Bologna - Italy	2021-22 2021-22 2021 2020 2016 2013
JOURNAL PUBLICATIONS	Published: (Total Articles: 11; Google Scholar Citations: 209, h-index: 7, i10-index: 5) <ol style="list-style-type: none">1. Ghavanloughajar, M., Borthakur, A., Valenca, R., McAdam, M., Khor, C., Dittrich, T.M., Stenstrom, M., and Mohanty, S.K. (2021) Iron amendment minimizes the first-flush release of pathogens from stormwater biofilters. <i>Environmental Pollution</i>. 116989. https://doi.org/10.1016/j.envpol.2021.1169892. Valenca, R., Le, H., Zu, Y., Dittrich, T., Tsang, D.C.W., Datta, R., Sarkar, D., and Mohanty, S.K. (2021) Nitrate removal uncertainty in stormwater control measures: Is the design or climate a culprit? <i>Water Research</i>. 190, 116781. https://doi.org/10.1016/j.watres.2020.116781.3. Tirpak, A., Afrooz, N., Winston, R.J., Valenca, R., Schiff, K., and Mohanty, S.K. (2021) Conventional and Amended Bioretention Soil Media for Targeted Pollutant Treatment: A Critical Review to Guide the State of the Practice. <i>Water Research</i>. 189, 116648. https://doi.org/10.1016/j.watres.2020.116648.4. Valenca, R., Borthakur, A., Zu, Y., Stenstrom, M. K., and Mohanty, S.K. (2021) Biochar selection for Escherichia coli removal in stormwater biofilters. <i>Journal of Environmental Engineering</i>. https://doi.org/10.1061/(ASCE)EE.1943-7870.0001843.5. Le, H., Valenca, R., Ravi, S., Stenstrom, M., and Mohanty, S.K. (2020) Size-dependent biochar breaking under compaction: Implications on clogging and pathogen removal in biofilters. <i>Environmental Pollution</i>.. 266, 115195. https://doi.org/10.1016/j.envpol.2020.115195.	

6. Ghavanloughajar, M., Le, H., Rahman, M.D., **Valenca, R.**, Borthakur, A., Ravi, S., Stenstrom, M., and Mohanty, S.K. (2020) Compaction conditions affect the capacity of biochar-amended sand filters to treat road runoff. *Science of the Total Environment*. 735, 139180. <https://doi.org/10.1016/j.scitotenv.2020.139180>.
7. **Valenca, R.**, Ramnath, K., Dittrich, T.M., Taylor, R. E., and Mohanty, S.K. (2020) Microbial quality of surface water and subsurface soil after wildfire. *Water Research*. 175, 115672. <https://doi.org/10.1016/j.watres.2020.115672>.
8. Baalousha, M., Wang, J., Nabi, M., Loosli, F., **Valenca, R.**, Mohanty, S.K., Afrooz, N., Cantando, E., Aich, N. (2020) Stormwater green infrastructures retain high concentrations of TiO₂ engineered (nano)-particles. *Journal of Hazardous Materials*. 392, 122335. <https://doi.org/10.1016/j.jhazmat.2020.122335>.
9. Berger, A., **Valenca, R.**, Miao, Y., Ravi, S., Mahendra, S., and Mohanty, S.K. (2019) Biochar alters nitrate removal capacity of woodchip biofilters during high-intensity rainfall. *Water Research*. 165, 115008. <https://doi.org/10.1016/j.watres.2019.115008>.
10. Mohanty, S.K., **Valenca, R.**, Berger, A., Xiong, X., Yu, I.K.M., Saunders, T.M., and Tsang, D.C.W. (2018) Plenty of room for carbon on the ground: Potential applications of biochar for stormwater treatment. *Science of the Total Environment*. 625, 1644-1658.
11. **Valenca, R.** and Ferração, F. (2018) Reutilization of the Solid Waste Materials Produced by a Ceramic Tiles Industry as a Raw Material for the Production of New Ceramic Tiles. *Materials Science Forum*, 912, 180-184.

Submitted/In Review:

1. **Valenca, R.**, Garcia, L., Flor, D., Espinosa, C., and Mohanty, S.K. Impact of local weather on fecal indicator bacteria removal in retention ponds: Field data analysis and machine learning. *Environmental Pollution*.
2. Raelison, O., **Valenca, R.**, Lee, A., Karim, S., Pouline, B.A., Webster, J.P., and Mohanty, S.K. Analysis of wildfire impacts on surface water quality parameters: Implications on monitoring needs. *Environmental Pollution*.

In Preparation:

1. **Valenca, R.**, McKnight, Q., Mahendra, S., Mohanty, S.K. Wildfire residue deposits accelerate methane emission in wetlands. *Nature Geoscience or Environmental Science & Technology*.
2. **Valenca, R.**, Borthakur, A., Karim, S., Mohanty, S.K. Critical role of biochar in building climate-resilient stormwater infiltration system. *Water Research or Environmental Pollution*.
3. Raelison, O.D., Indiresan, S., **Valenca, R.**, Yang, K., Das, T., Mahendra, S., and Mohanty, S.K. Wildfire residue deposition can alter biofilter functions: infiltration capacity, metal leaching, and microbiome shift. *Water Research*.
4. Indiresan, S. **Valenca, R.**, Raelison, O.D., Mahendra, S., and Mohanty, S.K. Wildfire residue deposition affects biochemical cycling of nitrogen, sulfur, and carbon in wetland. *Water Research*.

BOOK CHAPTER

1. **Valenca, R.**, Borthakur, A., Le, H., and Mohanty, S.K. (2021) Biochar Role in Improving Pathogens Removal Capacity of Stormwater Biofilters. *Advances in Chemical Pollution, Environmental Management and Protection: Biochar: Fundamentals and Applications in Environmental Science and Remediation Technologies*. Volume 6. Editor: Ajit Sarmah. doi: <https://doi.org/10.1016/bs.apmp.2021.08.007>

CONFERENCE
ABSTRACTS

1. **Valenca, R.** and Mohanty, S.K. The relative importance of climate and design on nitrate removal in stormwater control measures. American Chemical Society Spring 2021 National Meeting. USA (online), April 5-30, 2021.
2. Raelison, O.D., **Valenca, R.** and Mohanty, S.K. Wildfire impacts on surface water quality: Effects of the burned area, flow rate, and sampling time. American Chemical Society Spring 2021 National Meeting, United States (online), April 5-30, 2021.
3. **Valenca, R.** and Mohanty, S.K. Turning the Nation's road infrastructure into a network of stormwater treatment systems. Council for Watershed Health (CWH) Rain or Shine: Soaking Up Success Symposium, Los Angeles, CA, United States (online), October 15, 2020.
4. **Valenca, R.** and Mohanty, S.K. Designing Resilient Stormwater Treatment Systems to Mitigate Climate Change Impact. ASCE International Conference on Sustainable Infrastructure. Los Angeles, CA. November 7-9, 2019.
5. **Valenca, R.** and Mohanty, S.K. Microbial risk from wildfire residues. 258th American Chemical Society National Meeting, San Diego, CA, August 25-29, 2019.
6. **Valenca, R.**, Kalra, S., Lothe, A., Mahendra, S., and Mohanty, S.K. Fungi-augmented biofilters for the removal of energetic compounds from stormwater runoff and groundwater. 256th American Chemical Society National Meeting, Boston, MA, August 19 - 23, 2018.
7. Mohanty, S. K., **Valenca, R.**, et al. In 256th American Chemical Society National Meeting, Resiliency of biochar-amended woodchips-biofilter to remove nitrate from urban stormwater during climate change, Boston, MA, Aug 19-23, 2018
8. **Valenca, R. L.**, Ferraco, F. In 60th Brazilian Congress on Ceramics, Reutilization of the Solid Waste Materials Produced by a Ceramic Tiles Industry as a Raw Material for the Production of New Ceramic Tiles, Águas de Lindóia, SP, Brazil, May 15-18, 2016.

EMPLOYMENT	<p>Senior Researcher and Laboratory Manager Subsurface Engineering and Analysis Laboratory (SEALab) University of California Los Angeles, CA, USA</p> <p>Teaching Assistant Department of Civil and Environmental Engineering University of California Los Angeles, CA, USA</p> <p>Chemical Engineering Intern Cerâmica Porto Ferreira Porto Ferreira, SP, Brazil</p> <p>Research and Development Laboratory Analyst Intern Cerâmica Porto Ferreira Porto Ferreira, SP, Brazil</p>	<p>2017 to present</p> <p>2018 to present</p> <p>2015</p> <p>2012</p>
COURSES TAUGHT	<p>University of California, Los Angeles</p> <p>CEE 159/259 - Green Infrastructure CEE 153 - Introduction to Environmental Engineering and Science ENGR 87 - Introduction to Engineering Disciplines</p>	
PROFESSIONAL SERVICE	<p>Reviewer of Peer-reviewed Journals</p> <p>Ain Shams Engineering Journal Blue Green Systems Science of Total Environment Water Research</p>	<p>2021 - Present 2020 - Present 2020 - Present 2021 - Present</p>
MEDIA & POPULAR PRESS	<p>1. Local Production Process of Parmesan Cheese and its Impact on Greenhouse Gas Emissions. November 9, 2021. INFEWS, UCLA</p> <p>2. Stormwater Biofilters and Resiliency under Climate Change. January, 2020. NeuPlanet, Spotify</p>	