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Water Environment Federation Honors Industrial Wastewater Management Research

Authors to be recognized for papers on refinery wastewater, reclaimed water and more

ALEXANDRIA, Va.— The Water Environment Federation (WEF) proudly announces the 2019 WEF Awards recipients for published papers. The WEF Published Papers Awards recognize WEF members for valuable research that has the potential for broad contribution to industrial wastewater management.

"Research is vital to the advancement of the water sector," said Eileen O'Neill, WEF Executive Director. "The Water Environment Federation is extremely proud to honor the incredible work of these individuals who contribute to the body of knowledge regarding one of the world's most valuable resources."

The 2019 recipients for Published Papers are:

Eddy Wastewater Principles/Processes Medal

"Acute Impact of Chlortetracycline on Nitrifying and Denitrifying Processes," Rama Pulicharla, Mehdi Zolfaghari, Satinder Kaur Brar, Patrick Drogui, Serge Auger, Mausam Verma, and Rao Y. Surampalli, *Water Environment Research*, Volume 90, p. 604 (2018)

The research reported in this paper investigates the effects of chlortetracycline on nitrification and denitrification in activated sludge processes. The authors discovered that chlortetracycline at as low as 0.5 mg/L had adverse impacts on nitrification, whereas the effects were less impactful on denitrification process. The study provides key insights into the broader effects of trace organic constituents such as antibiotics on nitrogen removal in microbial communities in water reclamation.

The Eddy Medal honors Harrison Prescott Eddy, a prominent engineer and a pioneer in the field of wastewater treatment. The medal is awarded for research that makes a vital contribution to the existing knowledge of the fundamental principles or process of wastewater treatment, as comprehensively described and published in a Federation periodical.

Gascoigne Wastewater Treatment Plant Operational Improvement Medal

“Doubling Down on Disinfection,” Michael J. Watts, Walter Collins, Aaron Stallmann, and J. Paul Strickland, *Water Environment & Technology*, Volume 30, Number 28 (February 2018), p. 42

The authors detail how staff and consultants at the Adams Field Water Reclamation Facility in Little Rock, Ark. corrected disinfection deficiencies caused by increasing influent flow rate or decreasing UV transmittance during abnormal influent wastewater conditions. Using a minimal-cost, on-site pilot plant facility, the pilot plant program investigated the effects of peracetic acid on disinfection results from the full-scale water reclamation facility during both high flow conditions and under conditions causing low UV transmittance. The pilot plant indicated that the proposed intermittent dosing of peracetic acid improved disinfection within permit requirements, and a full-scale trial of the peracetic system was conducted at the facility.

Plant staff also constructed the full-scale trial facility by repurposing unused existing equipment associated with a former chlorine disinfection system. The full-scale trial facility has run automatically and intermittently as needed for its planned year-long trial, consistently producing plant effluent that meets permit levels for fecal coliform concentrations. Although approval from the Arkansas Department of Environmental Quality is pending, it is anticipated that such approval will come. Pending approval, the Adams Field Water Reclamation Facility will have an effective, minimally used, and safe supplemental disinfection system that will ensure permit compliance.

The Gascoigne Medal was established in recognition of George Bradley Gascoigne, a prominent consultant who exhibited a great deal of interest in the operation of wastewater treatment plants. The medal is awarded to the author(s) of an article that presents the solution of an important and complicated operational problem within a full-scale, operating wastewater treatment plant that is appropriately staffed.

McKee Groundwater Protection, Restoration or Sustainable Use Award

“Sustainability Assessment for Indirect Potable Reuse: A Case Study from Reno, Nevada,” Laura Haak, Vijay Sundaram, and Krishna Pagilla, *Water Environment Research*, Vol. 90, No. 8 (August 2018), pp. 748-760

The authors examine how potable reuse of reclaimed water addresses water needs, and focuses on Reno, Nev. As a part of the study, the authors address how potable reuse of reclaimed water impacts balancing groundwater extraction rates with inflows. The authors used the TBL approach to evaluate the impacts of a status quo scenario and a potable reuse scenario. A number of assumptions were required to allow quantification of the results. The decision-making trade-offs for the various criteria used to evaluate the two scenarios were well set out. The value of the paper was setting out the procedure used for this type sustainability assessment.

The McKee Award recognizes significant contributions to groundwater science or engineering research published in a WEF or WEF Member Association periodical. The award is named in honor of Dr. Jack McKee, the 1962-63 president of the Water Environment Federation, a founder of the consulting firm of Camp, Dresser and McKee, Inc., and a longtime professor at the California Institute of Technology.

Rudolfs Industrial Waste Management Medal

“Evaluation of Kinetic and Stoichiometric Parameters for Denitrification of a Petroleum Refinery Wastewater,” Dan Carey, Ph.D, David Marrs, P.E., and Everett Gill, P.E., 2018 WEFTEC Proceedings

This paper provides valuable results of research into biological nitrogen removal in petroleum refinery wastewaters. Site-specific modelling parameters were developed at the bench scale using water from the Pembroke Refinery in Pembrokeshire, Wales, United Kingdom. These parameters were then applied to a site calibrated BioWin model to optimally modify the refinery’s biological treatment system. The insight into the estimation of kinetic and stoichiometric parameters will be valuable for modeling and design efforts to improve refinery wastewater treatment systems.

The Rudolfs Medal was established in 1949 and is named after Willem Rudolfs, an active WEF member and primary force in industrial waste research. This award recognizes noteworthy accomplishments in any aspect of industrial waste management research published in WEF or WEF Member Association periodicals.

These awards will be presented during WEFTEC® 2019, the Federation’s 92nd Annual Technical Exhibition and Conference, September 21-25 in Chicago.

For more information about the WEF Awards, visit <https://www.wef.org/awards>

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About WEF

The Water Environment Federation is a not-for-profit technical and educational organization of 35,000 individual members and 75 affiliated Member Associations representing water quality professionals around the world. Since 1928, WEF and its members have protected public health and the environment. As a global water sector leader, our mission is to connect water professionals, enrich the expertise of water professionals, increase the awareness of the impact and value of water, and provide a platform for water sector innovation. To learn more, visit www.wef.org.