

Outstanding Distinguished Scientist Lecture

Ferrate in Population Health Care: Enhanced Hospital Disinfection and Water Purification

10 a.m.
Monday, February 10, 2020

White Creek Community Center

667 W Campus Blvd., Multipurpose Room 116

Reception Immediately Following

Pay parking in Lot 122, Business permit holders may park in Lot 114



Virender K. Sharma

*Professor
Director of the Program on Environment
and Sustainability
Department of Environmental and
Occupational Health
School of Public Health
Texas A&M University*

Ferrate is an earth abundant iron-based molecule, in which iron is in the plus 6-oxidation state, i.e., it is depleted of its electrons, hence extremely efficient as a surface disinfectant in hospital settings and as a water treatment oxidant. The high oxidation capability of ferrate is in decontamination processes (e.g., military vehicles and wastewater). The theme of the presentation will be to demonstrate the multiple roles of ferrate in performing disinfection, coagulation, and oxidation in population health care.

Examples include disinfecting chlorine resistant bacteria (e.g., *Clostridium difficile*), inactivating viruses (e.g., murine norovirus), coagulating toxic metals (e.g., arsenic and lead), and oxidizing emerging contaminants (e.g., antibiotics) in water and urine. A wide range of recalcitrant pollutants in water can be degraded by “activated ferrate” with high efficiency in seconds, which would otherwise take several minutes or hours by ferrate without activation. The current research on “activated ferrate” will also be discussed.

Questions:
dgaddy@tamu.edu