



Utilities Tech Outlook

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Dr. Thomas Waite,
Founder and President

FERRATE SOLUTIONS

THE INTERNATIONAL
COMMERCIALIZATION OF
FERRATE

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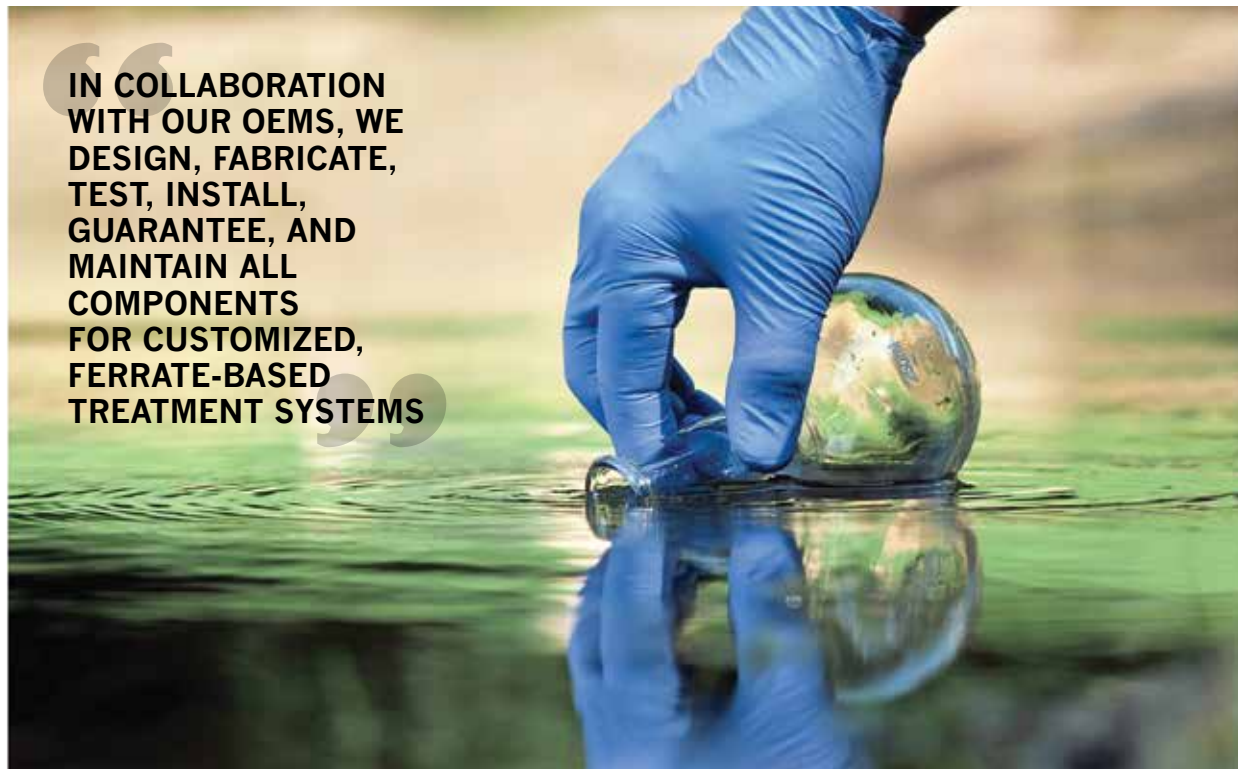
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What makes planet earth habitable? While there are multiple factors at play here, water is undoubtedly one of the crucial elements for sustaining life on the planet. Despite its vast abundance, nevertheless, increasing global pollution in the post-industrialization era has made a considerable volume of available water unsafe for usage. Contaminated water can pose a serious threat to both human health and the environment. With this concern in mind, successful wastewater management and treatment has become critically important for governments and private industries around the globe.

As water treatment needs continue to grow, many shortcomings in existing processes are also being revealed. For example, chlorination, in spite of being one of the most widely-used chemical processes, can cause long-term detrimental health effects as it forms cancer-causing disinfection by-products. Clearly, there is a global need for an ecologically safe and cost-effective chemical treatment system that can remove almost any contaminant from surface water or wastewater.

At this juncture, Dr. Thomas Waite, an internationally renowned environmental engineer with more than 40 years of experience, believes that the world already has an alternative solution for some of the most severe water contamination problems. According to Dr. Waite, Ferrate(FeO_4^{2-})—a high-valence oxo-anion of iron—

“IN COLLABORATION WITH OUR OEMS, WE DESIGN, FABRICATE, TEST, INSTALL, GUARANTEE, AND MAINTAIN ALL COMPONENTS FOR CUSTOMIZED, FERRATE-BASED TREATMENT SYSTEMS”



has been known to be a powerful treatment option for water for more than 50 years. Ferrate is a powerful oxidant and disinfectant, that quickly reduces to an effective coagulating agent, and its usage in treatment plants can easily improve the quality of water leaving those facilities. Yet, technical and cost barriers to its delivery for commercial usage previously kept Ferrate on the sidelines. Moreover, these “wonder compounds” have not been used as industrial water purifiers before because inexpensive, commercial scale quantities of the chemical were not available. To overcome these barriers, Dr. Waite perfected the chemistry of Ferrate (VI) blends after years of research and development, as well as the design of systems that can efficiently deliver liquid Ferrate (VI) products to customers. The success of his work led Dr. Waite to establish Ferrate Solutions (FS)—an environmental services company for the international commercialization of Ferrate (VI).

Notably, FS is a novel, first-of-its-kind provider of a ground breaking

water treatment technology. “It’s going to be a disruptive technology for wastewater treatment because it’s environment-friendly, inexpensive, multi-faceted, and it can treat many tough contaminants just with one dose,” comments Dr. Waite, the founder and president of FS.

FS tackles all environmental challenges including: nutrient contamination (phosphorus and nitrogen), pathogens, pesticides, pharmaceuticals, radionuclides, arsenic, and more. “In collaboration with our OEMs, we design, fabricate, test, install, guarantee, and maintain all components for a customized, Ferrate-based treatment system,” adds Dr. Waite. What’s more? The ingredients for creating and continually producing the right blends of Ferrate (VI) are readily available as they are common feedstock chemicals at most water and wastewater treatment plants in the world.

With such extensive capabilities and a kindling tagline—‘Purple is the new green’ (owing to Ferrate’s deep purple hue and its environmentally-friendly attributes)—Dr. Waite and

his team are in the early stages of launching projects all over the world. Customers in Europe, Southeast Asia, and the Middle East are coming online and their treatment needs include everything from removing radioactive particles from deep-aquifer drinking water to factory wastewater treatment and bacteria and virus disinfection.

And in the company’s home state of Florida, U.S., Ferrate Solutions was recently selected as a “new technology” to mitigate the state’s harmful algal blooms because of its proven ability to totally remove both phosphorus and nitrogen from agricultural canal drainages. The company has also begun testing work with on treating nutrients in muck dredge water. FS is set to develop strong partnerships with international organizations and materialize its mission-critical vision for cleaner, healthier water, all around the world. “At present, our effort and focus is to set up regional ventures and partnerships so that we can move our technology into those areas very quickly,” concludes the founder. 🍷

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The annual listing of 10 companies that are at the forefront of providing Wastewater Management solutions and impacting the industry