OntarioTech UNIVERSITY

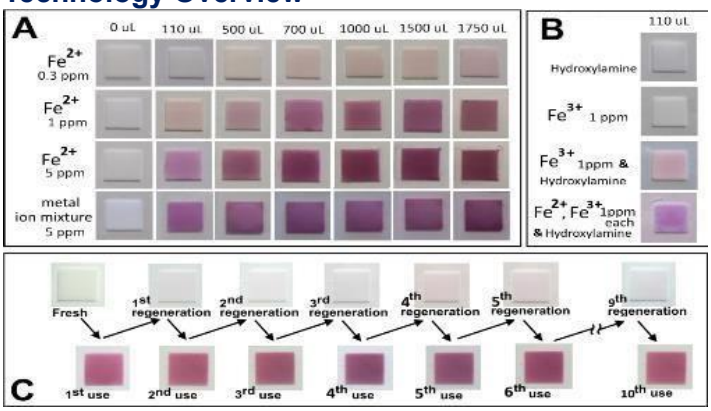
TECHNOLOGY OVERVIEW

Material for Rapid Detection and Removal of Dissolved Iron

Background

Iron is the most abundant essential trace element in the human body. It plays crucial roles in physiological processes such as oxygen transport, electron transfer, and enzymatic catalysis. Currently, the amount of dissolved iron in samples is normally determined through atomic absorption spectroscopy. This method includes sampling, sample transport, and pre-treatment. Therefore, there is a direct need for the development of a rapid, low-cost assay that can be performed in field conditions by untrained personnel.

Technology Overview



The research led by Dr. Olena Zenkina has led to a novel technology that enables users the ability to quantify the amount of dissolved Ferrous Iron in a sample, while another aspect is the removal of ferrous iron. The technology utilizes a chemically - functionalized terpyridine–based composite material. This platform enables the chemical absorption of dissolved iron. The iron adsorption process is accompanied by the rapid color change of the material to varying shades of magenta (the intensity of the color change is proportional to the amount of iron adsorbed). It is viewed that this technology will have useful applications as a research tool for biotech (measurement of soluble iron), water analysis, water purification, and food & beverage quality assurances.)

Business Opportunity

Ontario Tech University looks to work with companies in a way that helps develop a relationship that is tailored to their interests. Thus, we are happy to explore collaborations, licenses, options, assignments, etc. It is the belief that only through enabling the company to utilize its business model will Ontario Tech University technology be able to make an impact within the marketplace.

Inventors:

Olena Zenkina, et al.

Publication:

Rational Design of a Material for Rapid Colorimetric Fe2+ Detection

About Ontario Tech University

Ontario Tech University conducts high-quality, rigorous research designed to meet the research and development needs of business and industry and benefit society. Whether the focus is on developing hydrogen-from-nuclear or fuel-cell technologies, improving network security, or understanding youth crime, we are committed to interdisciplinary research and development that addresses social, environmental, health, and economic challenges.