



Contribution ID: 258

Type: POSTER

## New advances in supercritical water oxidation technology

Supercritical water oxidation technology has a wide potential application in the treatment of radioactive organic waste because of its high efficiency, no by-products and comprehensive waste degradation. In this research, nickel foam was filled into the pilot plant to form a fine channel supercritical water oxidation reactor, which achieved the goal of miniaturization and efficiency of supercritical technology wastewater treatment device. Tributyl phosphate was used as the reaction material, and the results showed that the ignition temperature of the pilot equipment was reduced by 42.19%, and the operating temperature was reduced by 3.63%. At the same time, the nickel foam surface oxidant provided oxygen source, which could continue the reaction within 10min of oxygen break. Therefore, the reactor reduces the energy consumption in the starting process of the equipment, enhances the performance of mass transfer and heat transfer, and improves the stability and safety of the equipment operation.

**Primary authors:** Mr LIU, Yi (CIAE); LI, Yi-Ning (CIAE); Ms MA, Su-Ning

**Presenter:** Mr LIU, Yi (CIAE)

**Track Classification:** Track 5 - Practical experiences in integrating safety and sustainable development