The Testing of the Mpemba Effect at Varying Salinities

Senegal, II, Samuel

The Mpemba Effect is a rare phenomenon that results in the freezing of hot water faster as opposed to cold water temperatures. The foundation of this finding were the studies done by the Tanzanian scientist, Erasto Mpemba, also other observations were done by other scientist. The purpose of my experiment was to test this occurrence with different variables. Using thermal probes (Lascar EL-USB_TC), water temperatures of 90 degrees Celsius and 15 degrees Celsius of the same conditions including: hardness and salinity were tested in triplicates. My original hypothesis was rejected in that the results showed significant difference between the hot and cold water samples. This refuted the occurrence of the Mpemba Effect in my tests. More interestingly, the experiment revealed that soft water produced more consistent freezes. My research has concluded that the higher the temperature of the water, the slower it will freeze with the tests that were conducted, and that increasing the salt (NaCl) slows the freezing process.

Awards Won: