Short Communication

Effect of silica fume in mortar mixes on seawater intrusion using complex impedance technique

Ashraf Mostafa Abdelmonem

ABSTRACT: This research aims to investigate the influence of silica fume (SF) additives in the mortar mixes on seawater intrusion through the AC electrical conductivity and dielectric constant measurements using complex impedance technique. Silica fume has been used as a partial replacement percentage 0, 5, 7, 10, 12, 15, 20 and 25% from cement weight in mortar with water to cement ratio, (w/c), 0.4. Measurements were performed at 295, 323 K and 373 K and over the frequency range from 1 KHz to 100 KHz for mortar with different SF% after submerged in seawater for 45 minutes and 7 days. The relations between conductivity and SF% at certain frequencies show that; as SF% increases, the conductivity value is increased for samples with SF up to 10 %. However, for further increase of SF% the conductivity decreases..

Biography

Ashraf Mostafa Abdelmonem received the M.Sc. and Ph. D. degrees in Radiation Physics from Mounifia University and Zagazig University, Egypt. Publications many published papers. Research Activities: Attending in physics research, teaching, measurement activities, and participated in some physics conferences. He participated as a main researcher in two IAEA projects (TC and CRP projects). The TC project was concerned with development of nuclear techniques for landmine detection (EGY101/024). The CRP was concerned with neutron based techniques for detection of explosives and illicit materials (IAEA CRP 13497). He participated as a researcher in Project: Investigation of the Radiation Shielding Properties of Alumina Reinforced Composite (Supported by Jouf university). He has got a training program for six months supported by International Atomic Energy Agency at Section of Radiation Detection & Matter, Faculty of Applied science, Delft University of Technology, Netherlands. He works as an associate professor at the Egyptian Atomic Energy Authority and currently with Jouf University in the Kingdom of Saudi Arabia. He appointed as editorial board and reviewer membership in many scientific journals

Recent Publications

1. The Annual Effective Dose of Natural Radioactivity Intake from Animal Products Consumption in Phosphate Polluted Area, Abdelmonem AM, El-Zohry M and El-Zayat MH, Journal of Nuclear Energy Science & Power Generation Technology 2019, 8:1. DOI: 10.4172/2325-9809.1000198..

2. Investigation the Shielding Properties of Alumina Reinforced Composites, A. M. Osman, A. M. Abdel-Monem and F. F. Mansour Aly, JCBPS; Section C; (November 2015 – January 2016) Vol. 6, No. 1; 302-315.

3. Experimental and theoretical characterization of lead glass composites as a gamma ray attenuator, A. M. Osman, M. A. El-sarraf, A.M. Abdel-Monem and A. A. Abd El-Latif, Journal of Nuclear and Radiation Physics volume 9 (2015).

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