crystals

an Open Access Journal by MDPI

IMPACT FACTOR 2.4

CITESCORE 5.0

Stress Corrosion in Magnetite

Guest Editors:

Dr. Soon-Hyeok Jeon
Korea Atomic Energy Research Institute, Daejeon, Republic of Korea

Dr. Geun Dong Song
Future Energy Plant Convergence Research Center, Korea Research Institute of Standards and Science, Daejeon, Korea

Deadline for manuscript submissions:
closed (30 June 2021)

Message from the Guest Editors

Magnetite sludge depositing inside steam generators is the major root cause of loss of heat transfer, impurity accumulation, and materials corrosion and degradation. So far, stress corrosion cracking of steam generator tubes has mainly focused on water chemistry in the crevices, such as chemical impurity concentrations, pH values, and temperature. However, it should be considered that the actual stress corrosion cracking occurs on the surface of a steam generator tube covered with magnetite deposits under operating condition of nuclear power plants. Magnetite is an oxide, but it shows almost metallic behavior with respect to its electrical properties. Hence, numerous microgalvanic cells can be formed on the surface of steam generator tubes within the porous magnetite and can be affected by corrosion phenomena.

We invite investigators to submit papers that discuss the various corrosion phenomena in magnetite, including stress corrosion cracking, general corrosion, flow-accelerated corrosion, pitting corrosion, intergranular attack, etc. Furthermore, mitigation technologies for magnetite deposition on steam generator tubing based on coating and surface property control are welcomed.

crystals

an Open Access Journal by MDPI

IMPACT FACTOR 2.4

CITESCORE 5.0

Editor-in-Chief

Prof. Dr. Alessandra Toncelli
Department of Physics, University of Pisa, 56126 Pisa, PI, Italy

Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.
Journal Rank: JCR - Q2 (Crystallography) / CiteScore - Q2 (Condensed Matter Physics)

Contact Us

Crystals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/crystals
crystals@mdpi.com
𝕏@Crystals_MDPI