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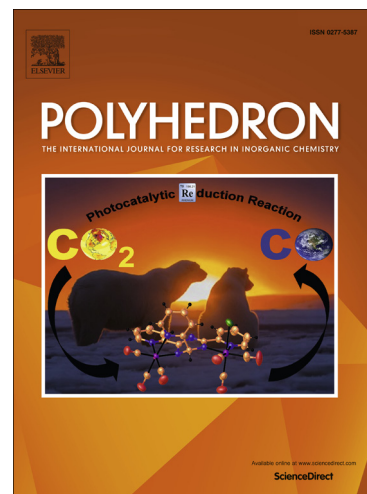
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Synthesis, X-ray structure, theoretical investigation, corrosion inhibition and antimicrobial activity of benzimidazole thioether and their metal complexes

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Keywords

Benzimidazole complexes; X-Ray determination structure; Corrosion inhibition; Antimicrobial activity; Electronic structure.

Abstract

Synthesis, characterization, corrosion inhibition as well as antimicrobial activity of the coordination compounds $\{\text{Co}(\text{bbms})\text{Cl}_2\}$, $\{\text{Zn}(\text{bbms})\text{Cl}_2\}$, $\{\text{Co}(\text{btmb})\text{Cl}_2\}$ and $\{\text{Zn}(\text{btmb})\text{Cl}_2\}$ containing benzimidazole thioether have been described. $\text{Co}(\text{bbms})$ and $\text{Zn}(\text{bbms})$ as well as $\text{Co}(\text{btmb})$ and $\text{Zn}(\text{btmb})$ are isostructural with space group Pbca and P21 respectively.

The coordination polyhedron around the metal center for all complexes may be described as a quasi-regular tetragonal geometry. The corrosion inhibition study of these complexes for steel in 0.5 M H_2SO_4 medium has been investigated using potentiodynamic polarization and EIS techniques. These later show the corrosion inhibition ability of the prepared complexes for steel in acid medium. A new procedure has been developed for antimicrobial assay using a solid tablet of the corresponding complexes. These later show moderate to significant

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