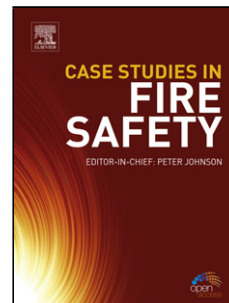


## Accepted Manuscript

Title: The study on the corrosion mechanism of protective ternary Zn–Fe–Mo alloy coatings deposited on carbon steel in 0.5 mol dm<sup>-3</sup> NaCl solution

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The study on the corrosion mechanism of protective ternary Zn–Fe–Mo alloy coatings deposited on carbon steel in 0.5 mol dm<sup>-3</sup> NaCl solution

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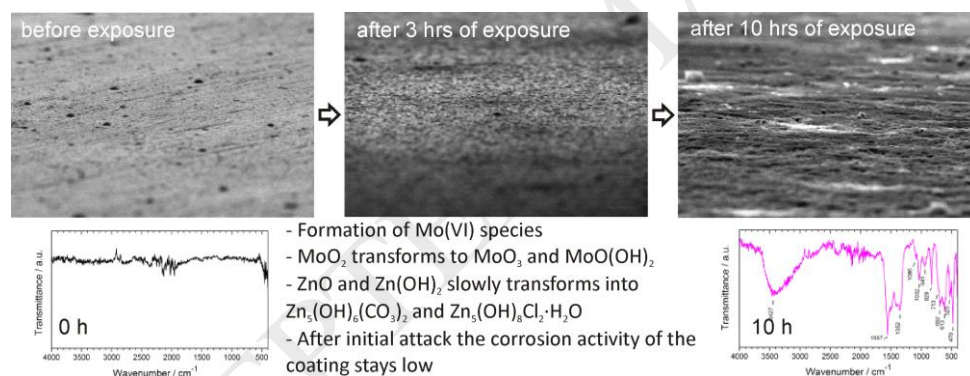
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## Graphical abstract



## Highlights

- The mechanism of oxidation of Zn–Fe–Mo coatings in the presence of chloride ions.
- Slow transformation of ZnO and Zn(OH)<sub>2</sub> into Zn<sub>5</sub>(OH)<sub>6</sub>(CO<sub>3</sub>)<sub>2</sub> and Zn<sub>5</sub>(OH)<sub>8</sub>Cl<sub>2</sub>·H<sub>2</sub>O.
- Oxidation of molybdenum in MoO<sub>2</sub> to Mo(VI) species: MoO<sub>3</sub> and MoO(OH)<sub>2</sub>.
- The fact that this is the first SVET measurement on a zinc alloy coating with Mo.
- Even under aggressive conditions the corrosion activity of the coating stays low.

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