Development of new a material for sea water substructures by seawater electrolysis

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A NEW, INNOVATIVE MATERIAL
The aim of this study is to investigate the applicability of a material made by seawater electrolysis as a subsea construction material for green offshore energy structures.

MINERAL COMPOSITION
An initial voltage interval for electrodeposited material has been established experimentally, indicating that only a narrow range of voltage will result in deposition of CaCO₃.

MINERAL ACCRETION
Among the ions dissolved in seawater calcium ions (Ca²⁺) and carbonate ions (CO₃²⁻) are of interest for mineral accretion by seawater electrolysis.

Calcium carbonate (CaCO₃) form two polymorphs in seawater, aragonite or calcite depending on factors like temperature and ion concentrations.

At relatively high voltages a softer material, magnesium hydroxide (Mg(OH)₂, brucite) can precipitate [2].

REFERENCES