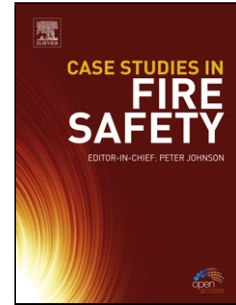


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## Ceramic oxide coating formed on beryllium by micro-arc oxidation

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### Highlights

- Beryllium is oxidized in a  $\text{Na}_2\text{CO}_3$  electrolyte using DC micro-arc oxidation.
- The coating consists of an inner barrier layer and an outer porous layer.
- The coating shows improved corrosion resistance and insulation properties.
- XPS and XRD indicate that the coating is crystalline BeO

### Abstract

Beryllium was oxidized at a current density of  $10 \text{ mA cm}^{-2}$  in a  $0.5 \text{ M Na}_2\text{CO}_3$  (pH=11.2) electrolyte to understand the micro-arc oxidation (MAO) process. Different oxidation stages were investigated by analysing the voltage–time responses and coating

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