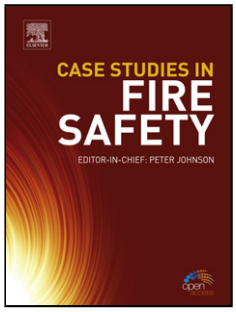

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Ceramic oxide coating formed on beryllium by micro-arc oxidation

Shixiong He[a], Yanlong Ma[b]*, Hong Ye[b], Xiangdong Liu[a], Zuoyong Dou[a], Qingdong Xu[a], Haijun Wang[a], Pengcheng Zhang[a]*

[a]Science and Technology on Surface Physics and Chemistry Laboratory, Mianyang, Sichuan, China. E-mail: zpc113@sohu.com

[b]College of Materials Science and Engineering, Chongqing University of Technology, Chongqing 400054, PR China. E-mail: myl@cqut.edu.cn

Address: P.O.Box No.9-35, Huafengxincun, Jiangyou City, Sichuan Province, 621908, PR China.

Highlights

- Beryllium is oxidized in in a Na_2CO_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 mA cm^{-2} in a 0.5 M Na_2CO_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