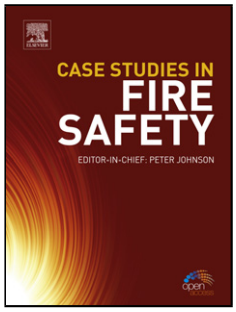

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Tribocorrosion behaviour of aluminium bronze in 3.5 wt.% NaCl solution

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Research highlights

- Tribocorrosion behaviour of aluminium bronze CuAl10Fe5Ni5 was of interest
- Environment 3.5 wt.% NaCl, sliding wear under alumina ball at 10 and 20 N loads
- Corrosion occurred as the selective dissolution of α phase in the eutectoid structure
- Contact situation yielded plastic deformation, material extrusion and abrasive wear
- Wear-corrosion interactions varied between the two loads (contact pressures)

Abstract

Tribocorrosion behaviour of aluminium bronze CuAl10Fe5Ni5 in 3.5 wt.% NaCl solution was investigated in a pin-on-disc facility containing an electrochemical cell. Oxidising capacity and contact pressure to alumina counterbody were varied. Pure corrosion occurred as selective dissolution of α phase included in the eutectoid structure. Contact to counterbody introduced plastic