**The use of alumina-chrome refractories in the high wear areas of anode refining vessels**

**First Name Last name, Company or University, Country**

**First Name Last name, Company or University, Country**

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**Abstract**

Refractory lining designs based on products containing direct-bonded or rebounded fused grain magnesia-chrome have been the industry-wide standard for anode refining vessels in all primary copper smelters. These linings are usually zoned with the denser rebounded fused grain material at the severe wear areas at the tuyeres, taphole, skimming ports and charging mouth. This zoning aids to improve the lining performance in these areas but commonly the vessels must be taken out of service every 4-6 months for maintenance. It has been shown in the past that wear mechanisms leading to severe joint penetration at the skimming ports and significant spalling of the brick in the tuyere areas are a result of copper oxide penetration and reaction.

**INFORMATION REQUIRED**

Author´s name for contact:

Institution:

Position:

Direction:

Phone:

Mail:

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