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Properties of Steel Construction Surfaces Affecting Corrosion Resistance
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K. Darowicki[1, a], J. Orlikowski[1,b], A. Arutunow[1,c], W. Jurczak [2]

[1]Gdańsk University of Technology, Chemical Faculty, Department of Electrochemistry, Corrosion & Materials Engineering, 11/12 Narutowicza Str., PL-80-952 Gdansk, Poland

[2] Naval University of Gdynia, Division of Mechanical and Electrical Engineering, 69 Śmidowicza Str., PL-81-109 Gdynia 3, Poland

[a]zak@chem.pg.gda.pl, [b]juliuszo@chem.pg.gda.pl, [c]anka@chem.pg.gda.pl

Portevin-Le Chatelier process also known as serration is important from the point of view of mechanical properties of many industrial alloys including aluminium alloys. In this group of engineering materials one should also remember about 5xxx series aluminium alloys.
In this paper the authors show dependence between mechanical manifestation of serration and electrochemical changes of passive layer properties. Analysis of current observed during anodic polarization of investigated material demonstrated presence of its oscillatory changes which are strictly correlated with serration process what justifies introduction of new phenomenon named electrochemical Portevin-Le Chatelier effect.

Keywords: PLC effect, electrochemical serrations