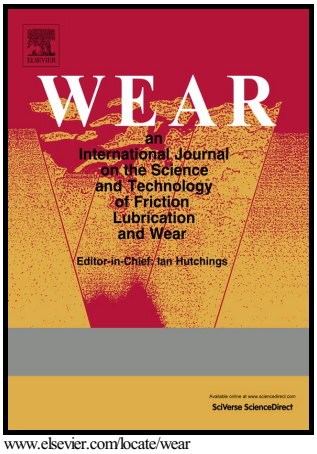
Author's Accepted Manuscript

Experimental research on ice particle impact on aluminum alloys

Y.K. Hong, K.H. Moon



www.elsevier.com/locate/wear

PII: S0043-1648(16)30378-7
DOI: http://dx.doi.org/10.1016/j.wear.2017.04.024
Reference: WEA102153

To appear in: *Wear*

Received date: 29 September 2016
Revised date: 24 April 2017
Accepted date: 25 April 2017

Cite this article as: Y.K. Hong and K.H. Moon, Experimental research on ice particle impact on aluminum alloys, *Wear* http://dx.doi.org/10.1016/j.wear.2017.04.024

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

ACCEPTED MANUSCRIPT

Experimental research on ice particle impact on aluminum alloys

Y. K. Hong[1] and K. H. Moon[2]
Agency for Defense Development,
Daejeon, 305-600, Republic of Korea

In this research, an experimental study on impact by an ice particle was performed. Aluminum alloys were impacted by spherical ice particles with a diameter of 2 mm launched using a two-stage light gas gun. Maximum impact pressure was measured using photon Doppler velocimetry in a velocity range up to approximately 800 m/s. The maximum impact pressure was found to be approximately 4.57 times the theoretical pressure estimated using planar impact approximation. Erosion tests were also performed on aluminum alloys in a velocity range up to approximately Mach 3.5. Craters that formed on the surface of the specimens were measured and fitted using an existing power law based on impact velocity.

Keywords: ice, impact, erosion, aluminum alloy

Accepted manuscript

1 Senior Researcher, Deference Material and Evaluation Technology Directorate, shinehyk@gmail.com.
2 Principle Researcher, Deference Material and Evaluation Technology Directorate, magnus9939@paran.com.

Download English Version:

https://daneshyari.com/en/article/4986524

Download Persian Version:

https://daneshyari.com/article/4986524

Daneshyari.com