8th International Conference on Information Warfare and Security, Denver, USA 25-26 March 2013

LASER ASSISTED COLD SPRAYING OF ALUMINIUM ALLOY POWDER ON STAINLESS STEEL SUBSTRATE

M. Tlotleng^{1, 2}; E.O. Olakanmi²; C. Meacock; Sisa Pityana^{1, 3}; E.T. Akinlabi²; M. Shukla²; and M. Doyoyo²

¹Department of Mechanical Engineering Science, University of Johannesburg, P.O.Box 524, Auckland Park, 2006, South Africa

²Department of Chemical and Metallurgical Engineering, Tshwane University of Technology, Private Bag X 680, Pretoria, 0001, South Africa, and

³National Laser Centre, Council for Scientific and Industrial Research, P.O. Box 395, Pretoria, 0001, South Africa

Abstract

A newly acquired, in-house assembled laser assisted cold spraying coating technique had to be commissioned for use in future for metal coating for different industrial application which include, but not limited to chemical and orthopedic industries. To achieve this aim the objective became depositing spherical aluminum powder onto stainless steel substrate thereby investigating the coatings' thickness and their microstructure as function of laser power.