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Xiao-Tao Luo, Yu-Juan Li, Cheng-Xin Li, Guan-Jun Yang, Chang-Jiu Li

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Effect of spray conditions on deposition behavior and microstructure of cold sprayed Ni coatings  
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Xiao-Tao Luo, Yu-Juan Li, Cheng-Xin Li, Guan-Jun Yang, Chang-Jiu Li\*

State Key Laboratory for Mechanical Behavior of Materials, School of Materials Science and  
Engineering, Xi'an Jiaotong University, Xi'an Shaanxi 710049 China

Corresponding author:

State Key Laboratory for Mechanical Behavior of Materials

School of Materials Science and Engineering, Xi'an Jiaotong University

Xi'an, Shannxi, 710049, P. R. China

Tel.: ++86-29-82660970; Fax: ++86-29-83237910; E-mail: licj@mail.xjtu.edu.cn

Abstract

Cold sprayed Ni and Ni based protective coatings are potential alternatives to electroplated counterparts due to non-pollution feature of the cold spray process. However, it was found that, it is not easy to obtain completely dense Ni coatings with high deposition efficiency by using conventional gas atomized Ni powder. In this study, the deposition behavior of a porous dendritic electrolytic Ni (E Ni) powder was examined under series of spray parameters in terms of gas temperature and spray angle. The results show that, as the nitrogen gas temperature rises from 350°C to 400°C and 450°C, the coating porosity decreases from 4.4% to 0.6% and 0.4%,

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