INFLUENCE OF LASER POWER ON THE MICROHARDNESS AND WEAR RESISTANCE PROPERTIES OF LASER METAL DEPOSITED 17-4 PH STAINLESS STEEL

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ABSTRACT

This aim of this research is to investigate the impact of laser power on the hardness and the wear resistance properties of laser metal deposited 17-4 PH stainless steel. Hardness was studied using the Zwick/Roell microhardness tester and the wear resistance property was carried out using the ball-on-disc Anton Paar-tribometer wear tester. The study revealed that an irregular increase and decrease in the average hardness value and wear behaviour were observed. This could be attributed to the presence of copper precipitate which was more concentrate at the overlapping region because of the reheating activity that is happening between the succeeding and preceding track layers.

KEYWORDS: Laser Metal Deposition, Laser power, 17-4 PH stainless steel, microhardness, wear resistance.

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