

EFFECT OF N₂:H₂ RATIO ON SURFACE MODIFICATIONS OF AISI 316 PLATES BY PLASMA NITRIDING PROCESS

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ABSTRACT

Plasma nitriding is used for improving the tribomechanical and chemical properties of the engineering components. In this study, plasma nitriding of AISI 316 substrate has been carried out using microwave plasma enhanced chemical vapour deposition (MPECVD) process by varying the nitrogen and hydrogen ratios. (90:10, 80:20, 70:30, 60:40). Whereas the other deposition parameters such as power, temperature, pressure, deposition duration were kept constant. After deposition process, each sample was then subjected to hardness test, atomic force measurement and microstructural examination. The effect of N₂:H₂ ratio on the mechanical and tribological characteristics of AISI plasma nitrated samples will be discussed in this paper.

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