

## **Depth distribution and wear behaviour of ion implanted Ti6Al4V**

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The effect of ion implantation of carbon, nitrogen, oxygen and noble metals (Pd, Ir, Pt, Au) with different energy-dose combinations on the tribological behaviour of the alloy Ti6Al4V was investigated. Depth distributions were determined using Rutherford and high energy backscattering spectrometry. Wear tests were performed against UHMWPE. Implantation of noble metals leads to reduction of wear provided the enrichment of implanted atoms starts at the alloy surface. After nitrogen or carbon implantation the most pronounced wear reduction occurs when the enrichment is high directly below the oxide film on the surface, followed by a continuous decrease of the concentration of implanted atoms with increasing depth.