

Microstructure and tribology of carbon implanted high-speed-steel

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AISI-M2 high-speed-steel was implanted with different doses of carbon at energies of 60 kV and 100 kV. Tribological behaviour and microhardness were studied. The measurements reveal a dose dependence of the friction coefficient μ . For 60 kV the decrease of μ is more pronounced than for 100 kV. Microhardness does not show a dose dependence for both energies but a strong energy dependence. For both friction and hardness the carbon concentration seems to be the dominant factor, whereas carbide formation does not influence the hardness considerably.