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Magneto-Electric Behavior a Couple Aluminum / Steel Xc48

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Abstract : The tribological behavior of a pin of paramagnetic material (aluminum), rolling on a rotating disk made of ferromagnetic material (steel XC48) in the presence of an externally applied alternating magnetic field, with the passage of electric current were studied. All tests were performed using a conventional tribometer pin- disk. Structural characterization of the surfaces in contact, oxides and wear debris, by X-ray diffraction (θ-2θ angle), showed the significant effect of magnetic field on the activation of the contact surface of the pin in no ferromagnetic material. The absence of the magnetic field causes a change of wear mode.

Keywords : structural characterization of the surfaces, oxides and wear debris, X-ray diffraction
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