STUDY OF TRIBOLOGICAL BEHAVIOR OF FERROUS AND NON FERROUS METALS BY USING PIN ON DISC APPARATUS

GUNTAKA AJAY PRASANNA¹, S. RAMA KRISHNA² & M. TARUN³

¹Research Scholar, Department of Mechanical Engineering, Gayatri Vaidya Parishad College of Engineering (Autonomous) Madhurawada, Visakhapatnam, Andhra Pradesh, India

²Associate Professor, Department of Mechanical Engineering, Gayatri Vaidya Parishad College of Engineering (Autonomous) Madhurawada, Visakhapatnam, Andhra Pradesh, India

³Assistant Professor, Department of Mechanical Engineering, Gayatri Vaidya Parishad College of Engineering (Autonomous) Madhurawada, Visakhapatnam, Andhra Pradesh, India

ABSTRACT

The wear and coefficient of friction plays a vital role in designing of gears and bushes. In the present paper experimental investigation is carried out on pairs of materials like Brass-Steel, Al-Steel and Steel-Steel to obtain coefficient friction and wear using a pin-on-disc apparatus. Experiments are performed on the flat circular disk and circular pin and these are perpendicular to each other. The present study focusing on a parametric study of the frictional coefficient and wear by varying speed, wear track diameter, contact pressure and temperature as design variables. Also, develop a regression equation by using Data Fit software. The results are also compared with disk and pin contact temperature with respect to the coefficient of friction.

KEYWORDS: Steel, Aluminum, Brass, Wear Rate, Coefficient of Friction & Regression Equation

Received: Apr 13, 2018; Accepted: May 04, 2018; Published: Jul 27, 2018; Paper Id.: IJMPERDAUG201879