5. Conclusions:

1. The wear rate of the aluminum alloy coating can be found with the help of pin on disc test under dry sliding conditions.
2. The ANOVA analysis of the variable showed that the variable chosen that was load (29.9, 44.4 and 58.8 N) and sliding speed (150, 200, and 250 RPM) and their interaction was significant.
3. The wear rate was depended on the sliding speed and the load. With increase in sliding speed and load the wear rate was found to be increased. The wear rate was also found depend on the pin material, the wear rate in case of high carbon steel pin was higher than that of medium carbon steel pin. The wear rate of coating with medium carbon steel pin was found higher than brass pin that is 0.0014 gm, whereas 0.0493 gm with medium carbon steel pin and with high carbon steel under same loading and sliding conditions it was found to be 0.0666 gm.
4. The coefficient of friction was found low at high load and high sliding speed condition. The coefficient of friction of coating with brass pin at 29.4 N loads was found to be 0.72279. It was found decreased to 0.63531 at a load of 58.8 N and the sliding speed was kept similar.
5. The micro hardness of coating worn surfaces was found more near to the wear track at their cross section. It was found decreased in a direction away from the wear track. The micro hardness of the worn surfaces with high carbon steel was found more near the wear track. However, away from the wear track it was found very less as compared to worn surfaces with the other two pin material that was medium carbon steel and brass.
6. The SEM micrographs showed that the wear mechanism of the coating was accompained by abrasion, micro cutting and adhesion.
7. The rise of temperature during the wear test was very low due to high heat conduction capacity of aluminum.
8. The coating can be used for self standing coating, and can be used as a light weight and high strength application such as bonnet and bumper of cars.