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Evaluation of properties for hybrid Al-SiC-carbon fiber reinforced metal matrix composite for brake pads

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In engineering application MMC is playing vital role due to its mechanical and physical properties. In automobile sector they are mainly used due to its high strength to weight ratio, light weight, low cost and good behavior. The aim of this research is to develop carbon fiber and SiC reinforced hybrid Aluminium metal matrix composite for automotive brake pad application. In present study the mechanical and wear behavior of hybrid aluminium metal matrix composite reinforced with SiC and carbon fiber with five different formulation of varying carbon fiber content by 0.5, 0.6, 0.7, 0.8 and 0.9 volume fraction along with fixed content of SiC (20%) reinforcement has been discussed. Brake pad is manufactured via route of powder metallurgy which is widely preferred due to its low cost, high volume production, ease of operation, sustainability and attractive manufacturing process. Also brake pads are developed with hybrid composite (Light alloy Aluminium 6061 reinforced with SiC and carbon fiber (3K Grade of 0.5 mm) to augment the strength and wear resistance and explores the advantage of low density of the matrix.

Biography

Abhik Rathod has completed his BTech from Gujarat Technological University in June 2012 and MTech from VIT University, Vellore in May 2015. Currently he is an Intern at Volvo India Pvt. Ltd. (VIPL) Bangalore. He has presented 1 research paper in international conference "Global Congress on Manufacturing and Management (GCMM 2014)" held on 8-10 December, 2014 at VIT University, Vellore and published 2 research papers in reputed journals. He has participated in Summer School on Automotive Manufacturing and management held on 21st July 2014 to 1st August 2014 at Technische Hochschule Ingolstadt (THI), Germany.

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