Aquitaine –Karnataka collaboration
Scientific Project for Pre-PhD student exchange

Scientific Proposal

Project Title	**Three – Body Abrasive Wear Behaviour of Aluminium Oxide Filled Glass Fabric Reinforced Epoxy Composites**	
Scientific domain	Material Science-Composite Materials, Mechanical Engineering	
Summary (ca. 10 lines)	In this study the abrasive wear behaviour of glass fabric reinforced epoxy (G-E) and Aluminium oxide filled G-E (Al_2O_3-G-E) composites will be carried out by using a rubber wheel abrasion test (RWAT) rig. Samples of G-E with 5, 7.5 and 10 wt% content of Al_2O_3 shall be tested under different loads and abrading distances. Also, conventional weighing, determination of wear volume, specific wear rate, and examination of the worn surface morphological features by scanning electron microscopy (SEM) could be done. The results may be showed varied responses under different abrading distance because of the inclusion of different wt.% of Al_2O_3 filler loading. Selected mechanical properties such as hardness, tensile strength, and elongation at fracture were analyzed for investigating wear property correlations. The worn surface morphology would be performed to investigate the wear mechanisms involved during abrasion process.	
Student profile wished	Mechanical Engineering, Material Science & Technology, Composite Materials-Polymer Composites.	
Supervisor Name	**Dr. Raju.B.R**	
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Timing & duration for project (give approximate ranges)	From 3 to 6 month, any time of the year	
Selected References	1. Visconti I.C. , Langella A. and Durante, M. The Wear Behaviour of Composite Materials with Epoxy Matrix Filled with Hard Powder, Applied Composite Materials, 2001, 8(3), pp 179-189. 2. Suresha B. Chandramohan, G. Siddaramaiah and Jayaraju T. Three-body Abrasive Wear Behavior of E-glass Fabric Reinforced/Graphite-filled Epoxy Composites, Polymer Composites, 2008, 29(6), pp 631-637.	

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