



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

**Scientific Proposal**

Project Title	<b>STUDY ON SHEAR BEHAVIOUR OF SELF COMPACTING CONCRETE BEAMS WITH SUPPLEMENTARY CEMENTITIOUS MATERIALS</b>	
Scientific domain	Structural engineering, concrete	
Summary	<p>This project focuses on the partial replacement of cement with cementitious materials such as GGBS and Fly ash in self-compacting concrete(SCC), which is eco-friendly and economic construction material which gives good strength to certain percentage. Lot of research work on Fly ash &amp; GGBS is being carried out worldwide to test its suitability and successful usage of cementitious material in concrete and SCC, Very few works are available in literature on the usage of Fly ash and GGBS as cementitious material in SCC. Further to earlier works on suitability of GGBS and Fly ash in concrete , this experimental investigation is taken up to study the suitability of triple blend cementitious material in equal proportions such as 33.33% of cement,33.33% of Fly ash &amp; 33.33% of GGBS in reinforced concrete beams, to study its behaviour in beams. For the design mix arrived based on material properties, cubes are to be cast and to be tested to obtain its compressive strength for curing period of 28 days for M<sub>40</sub> grade.</p> <p>Simply supported beams with two point loading system is designed for shear 16 under Reinforced beams are to be cast with different percentage of reinforcement, beams are to be tested under constant loading <math>a/d &gt; 2.5</math>. The deflection of beam at regular load increment, load at first crack, second crack and failure loads are to be recorded to study the behaviour of RC beams in Flexure under two point loading.</p>	
Student profile wished	Civil, Structural Engineering	
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Timing & duration for Project	3 to 6 months	
Representative references	<p>1. <b>Appa Rao G, and Injaganeri S S</b> “Evaluation of size dependent design shear strength of reinforced concrete beams without web reinforcement” Sadhana Vol. 36, Part 3, June 2011, pp. 393–410. _c Indian Academy of Sciences.</p> <p>2 <b>Wassim M. Ghannoum</b> (1998)in the paper titled “Size Effect on Shear Strength of Reinforced Concrete Beams” Department of Civil Engineering and Applied Mechanics McGill University Montréal, Canada.</p>	