

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

Scientific Proposal

Project Title	Effect of Binder and Mix Ageing on Properties of Asphalt Concrete Mix and Film Thickness	
Scientific domain	Pavement Materials	
Summary (ca. 10 lines)	<p>Durability of asphalt is a prime consideration in the economics of all asphaltic layers. When an asphalt binder is used in the production of asphalt concrete, it has to be heated to an elevated temperature and mixed with heated aggregate. The hot asphalt mixture is then hauled to the job site, placed and compacted. By the time the compacted asphalt concrete cools down and attains the normal pavement temperature, significant hardening of the asphalt binder would have taken place. Thus properties of the asphalt in service differ significantly from those of the original asphalt.</p> <p>This project proposes to investigate short term and long term aging effect on asphalt mixes. The asphaltic concrete mix has to be prepared and tested for Marshall Properties with Viscosity grade and modified bitumen binders. Thus studied Marshall Properties of the mix can be compared with that of the specimen made by mix ageing i.e. short term and long term ageing of the asphalt mix by exposing it to heat and pressure. Effects of short term and long term aging on bitumen properties like ductility, softening point, elastic recovery, viscosity and film thickness shall also be studied.</p>	
Student profile wished	Transportation Engineering (Pavement Materials)	
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Timing & duration for project (give approximate ranges)	4-6 months
Representative References	<ul style="list-style-type: none">• Effect of Asphalt Film Thickness on Short and Long Term Aging of Asphalt Paving Mixtures -Prithvi S. Kandhal Sanjoy Chakraborty• Effects of Exposure Time and Temperature in Aging Test on Asphalt Binder Properties - Engin Yener and Sinan Himshoglu• Indian Standard “Paving Bitumen — Specification” IS 73-2006

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