



**TIFR Centre for Interdisciplinary Sciences,  
Narsingi, Hyderabad 500075**

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**Seminar**

**Theoretical and Computational Studies of Atherosclerosis**

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Atherosclerosis is a chronic disease responsible for ischemic heart disease and strokes which are a leading cause of deaths in the world and in India. Atherosclerosis is characterized by formation of lipid-filled plaque which blocks flow in arteries: such a formation is known as a stenosis. It is known that such stenoses are localized at regions of disturbed flow in the human circulation like, for example, bifurcations and bends. Hence, it is pertinent to study atherosclerosis as a problem of blood flow in a complex geometry with flexible walls. Our approach is to study the problem in three different sub-parts: a constitutive model to describe blood rheology, a procedure to simulate flow of blood in a rigid-walled stenosed channel, and a procedure to study fluid-structure interaction during flow of a blood in a flexible-walled arterial geometry. I present results for two of these problems.

***Thursday, Feb 20<sup>th</sup> 2014***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Seminar Hall, TCIS***