

# **Seminar Notice**

*INTERNATIONAL YEAR OF CHEMISTRY - 2011*  
*SEMINAR SERIES -03*

Department of Chemistry  
Pondicherry University, Puducherry – 605 014

**Title: Sweet side of the Human Neutrophils:  
Functional Glycomics**

By

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Date: 29<sup>th</sup> (Monday) August 2011

Time: 3.30 pm

Venue: Seminar hall, Department of Chemistry, PU

Head of the Department

Seminar Convener

## Abstract

Eukaryotic cell surface is covered with a thick layer of complex carbohydrates which are conjugated to proteins and lipids, called 'glycocalyx'. The complex carbohydrates are also known as glycans. The entire repertoire of glycans present on the cells, tissues of an organism is called 'Glycome' and the study of structure and functions of glycome is referred to as Glycomics. Glycans are important for cell-cell communication, cell-matrix and cell-pathogen interactions and consequently are involved in numerous functions including development, signaling, immune response, glycoprotein quality control, and disease progression, etc. The structures of N- and O-glycans are not only complex and diverse but are also cell-type dependent. Thus, the structural elucidation of glycans remains a major challenge. Recent advancements in tandem mass spectrometric techniques like MALDI-TOF/TOF, in conjunction with glycolytic enzymes have made possible to obtain in-depth structural information about glycans.

Neutrophils are the most abundant white blood cells in humans and are essential part of innate immune system. During inflammation/infection neutrophils gets activated and move to the site of inflammation/infection through chemotaxis. Neutrophil chemotaxis is mediated through binding of selectins with sialyl lewis<sup>x</sup> ligands. In this presentation, ultra-high sensitive MALDI-MS and MS/MS analysis of N- and O-glycans from resting and activated human neutrophils will be discussed.