

Nanoscale Organisation and Dynamics Group

University of Western Sydney



NMR studies of articulate cartilage.

Prof. Olle Söderman

**Division of Physical Chemistry
Department of Chemistry
Lund University, Sweden**

Abstract

Articulate cartilage is a complex material, composed of collagenous fibers, and cells called chondrocytes, all of which are embedded in a firm gel-like material. The chondrocyte cells produce proteoglycans which bind to hyaluronic acid, forming large highly hydrophilic aggregates. These aggregates are entangled with each other and with the collagen fibrils forming what can best be described as a hydrogel that sits within the collagen network. As a colloidal scientist, one would describe cartilage as a complex porous material which anisotropic orientation.

In this seminar I will discuss this important biological material and present NMR studies of diffusion in articulate cartilage. Moreover, a method based on the use of an anionic MRI contrast agent has been suggested as a diagnostic tool to determine early signs of cartilage breakdown. The method is termed delayed gadolinium enhanced MRI of cartilage (dGEMRIC) and I will describe it and present some NMR studies on a model system aimed at improving this method.

Profile

Prof Olle Söderman completed a chemical engineering degree at the technical faculty at Lund University. He received his PhD from Lund University under the supervision of Prof Göran Lindblom. He became full professor in physical chemistry at Lund University in 1999. His research interest is in the field of soft material, in particular surfactant and polymer solutions.

Staff and students at all levels are welcome to attend.

Venue and Time:

This talk will be held on Friday February 14 at 2 pm at the Campbelltown Campus in Building 4, Lecture Theatre 3 (CA 04.G.14).

Enquiries:

Prof. William S. Price

Ext. 3336

e-mail: w.price@uws.edu.au