The Singapore Bioimaging Consortium (SBIC)
presents a seminar

on

"Optimum Pulse Flip Angles for Multi-Scan Acquisition of hyperpolarized NMR and MRI"

Speaker: **Dr Kaz Nagashima**
Date : **Tuesday, 13 December 2011**
Time : **3.00pm – 4.00pm**
Venue : **SBIC Seminar Room, 11 Biopolis Way**
Level 2, Helios Building
Singapore 138667
(Please use Level 1 entrance)

Abstract

The optimum pulse flip angles were calculated for multi-scan acquisition of hyperpolarized magnetic resonance. Although single-shot acquisition has been popular in hyperpolarized measurements, increasing scan counts may be effective for enhancing total signal amplitude, especially when the sample's relaxation time (T1) is long. Constant and variable flip angle cases are discussed, both of which yield similar cumulative signal amplitudes. For the constant angle case, a numerically calculated semi-universal curve is presented for the rough estimation of the best angle. For the variable angle case, the best angles could be directly calculated from a clean trigonometric series relation, wherein the initial pulse becomes near the Ernst angle and the last pulse is always 90.

About the Speaker

Dr Kaz Nagashima was born and raised up in Tokyo, Japan. He got a PhD degree in physical chemistry at the University of Missouri, and was a postdoc working on PFG NMR diffusion studies at the University of Toronto (1998-1999) and the University of North Carolina (1999-2001). He worked at PARI and AIST national research institutes in Japan as a Researcher (2001-2007), at MKS Instruments Inc. in the US and Japan as a Senior Scientist (2007-2009), and at the University of Toronto in Canada, again, as a Research Associate (2009-2011). His main research interest is the development of new NMR/MRI methodologies, such as sensitivity/signal enhancement, system miniaturizing, and high-speed acquisition. His recent publications include Langmuir 27, 4838 (2011); J. Am.Chem. Soc. 133, 5036 (2011).

--- Admission is free and all are welcome ---