Advanced Theory

The discussion presented in this module was intended to introduce NMR at an introductory level with a focus on its application for quantitative measurements. Students interested in a deeper treatment of NMR theory are encouraged to review the resources below:

Web Resources

- Fundamental's of NMR by Tom James
- Angel de Dios' Graduate NMR Course
- Introduction to 2D NMR
- James Keeler's Lectures on NMR

Books

- *Understanding NMR Spectroscopy* by James Keeler, Wiley (2005).
- *High-Resolution NMR Techniques in Organic Chemistry* by Timothy Claridge, Elsevier (1999).
- *Spin Choreography: Basic Steps in High Resolution NMR* by Ray Freeman, Oxford University Press (1999).
- "Modern NMR Spectroscopy: A Guide for Chemists", 2nd Edition, by Jeremy K. M. Sanders and Brian K. Hunter, Oxford University Press, 1993.

In addition to the additional references in the Advanced NMR Theory section, the resources listed below provide additional information on quantitative NMR measurements.

Web Resources

- The qNMR Portal

Selected Q-NMR Papers

- L. Orfi, C. K. Larive, D. Jayawickrama, L. Orfi "Quantitative Analysis of Peptides with NMR Spectroscopy" Appl. Spectrosc. (1997) 51:1531-1536.
- D.A. Jayawickrama, C.K. Larive "Analysis of the Trimethylsilylpropionic Acid -β (12-28) Peptide Binding Equilibrium with NMR Spectroscopy" Anal. Chem. (1999) 71:2117-2112.
- G. F. Pauli, B. U. Jaki, D. C. Lankin "A Routine Experimental Protocol for qHNMR Illustrated with Taxol" J. Nat. Prod. (2007)70:589-595.

Books

D. L. Rabenstein and D. A. Keire "Quantitative Chemical Analysis by NMR" in *Modem NMR Techniques and their Application in Chemistry* by A. I. Popov and K. Hallenga, Practical Spectroscopy Series, Vol. 11, Marcel Dekker (1990) ISBN 0824783328