

**PHYS3710 Short experimental projects I**  
**Department of Physics**  
**The Chinese University of Hong Kong, Hong Kong**

***Topic: Pulse Nuclear Magnetic Resonance (PNMR)***

***Topics you should know first:***

Pulse nuclear magnetic resonance

***Objectives:***

1. Understand the equipment setup (PR-1501 15Mhz Receiver, PP-101 Pulse Programmer, PT-1501 15 MHz OSC / AMP / MIXER, PM-1501 Magnet and oscilloscope).
2. To measure the spin lattice relaxation time  $T_1$  of samples.
3. To measure the spin spin relaxation time  $T_2$  of samples.

***Check-list for the project:***

1. Read references 1. Understand the theory of PNMR and relevant equations.
2. Setup the pieces of equipment according to reference 1.
3. Learn the techniques of generating pulse sequences.
4. Learn the techniques of obtaining optimized pulse nuclear magnetic resonance signals.
5. Measure the spin lattice relaxation time  $T_1$  and spin spin relaxation time  $T_2$  of samples and compare with accepted values.

***References:***

1. Teachspin, Inc. "Pulsed Nuclear Magnetic Spectrometer"

Reference folder is available.