## 1. Introduction

The pulse sequence, SELTICS (Sideband Elimination by Temporary Interruption of Chemical Shift), has the effect of suppressing rotational sidebands in magic-angle spinning spectra.[1] The SELTICS sequence consists of pairs of *rf* pulses of equal intensities and opposite phases. The lengths of the pulses are certain fractions of the rotor cycle. Here we demonstrate N = 6 SELTICS sequence incorporated with cross-polarization (CP) excitation in acquiring ^{13}C spectra of hexamethylbenzene and tyrosine hydrochloride on Tecmag spectrometers.

2. Pulse sequence
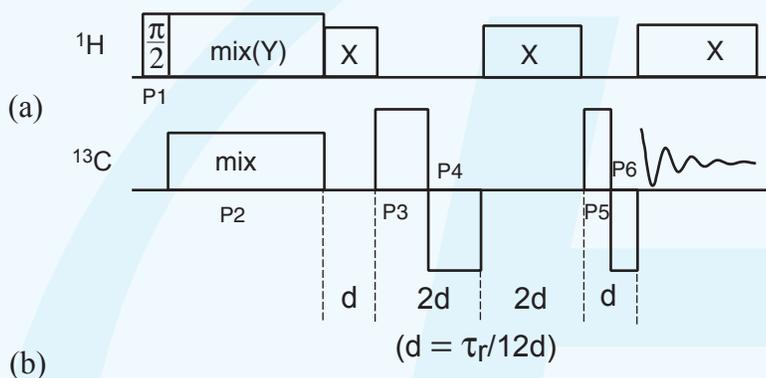
1D phase tables:

P1=ph_H90: 0, 0, 0, 0, 2, 2, 2, 2
P2 = ph_Cmix: 0, 1, 2, 3, 2, 3, 0, 1
ph_rx: 0, 1, 2, 3
P3 & P5 = ph_csl1: $(0)_4, (2)_4, (1)_4, (3)_4$
P4 & P6 = ph_csl2: $(2)_4, (0)_4, (3)_4, (1)_4$

Fig. 1. (a) The pulse sequence for the CP - SELTICS (N = 6) experiment. (b) The sequence in the NTNMR sequence editor.

3. Experiment (continued)

Sample:	*a*. hexamethylbezene (HMB), *b*. tyrosine hydrochloride
Spectrometer:	7 Tesla magnet with Tecmag HF3 Discovery
Probe:	DOTY HF3 MAS probe
^{1}H 90° pulse:	4 µs
Mixing field:	62.5 kHz
^{1}H decouple field:	45 kHz (HMB), 55 kHz (tyrosine)
^{13}C spinlock field:	71.4 kHz
Dwell time (1D):	20 µs
Acq. points:	1024
recyle time:	3s (HMB), 5s (tyrosine)
Scans 1D:	64 (HMB), 256 (tyrosine)

4. Results

Data processing:

(1) In the NDFT window,
click the "1D" tab and select: "Use 1D settings",
"Fourier Transform","Gaussian: 50,"

(2) Phase correction
click Option|Phase Adjustment, adjust both
Phase 0 and Phase 1.

3) Baseline fix (only for tyrosine)
click Option|Baseline fix, then click Calculate
button, move the baseline points to proper
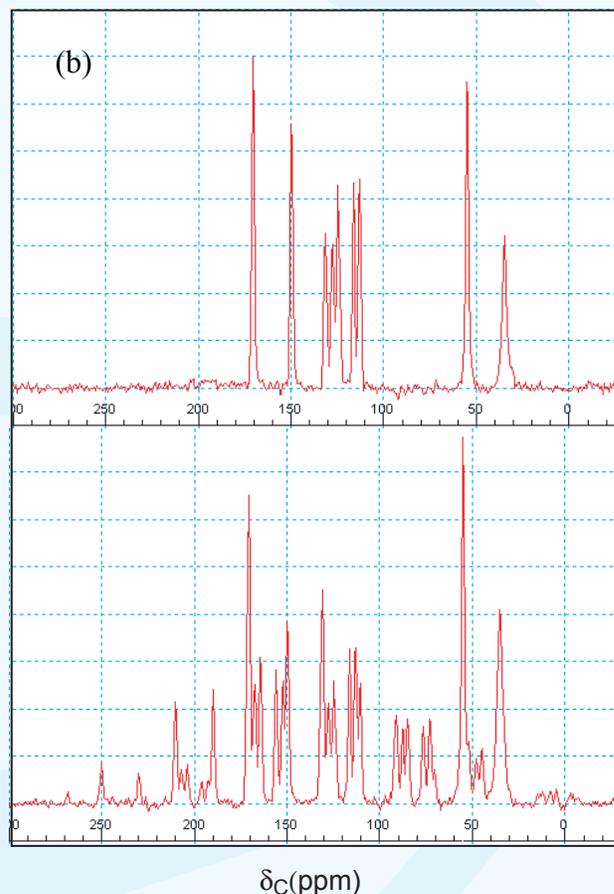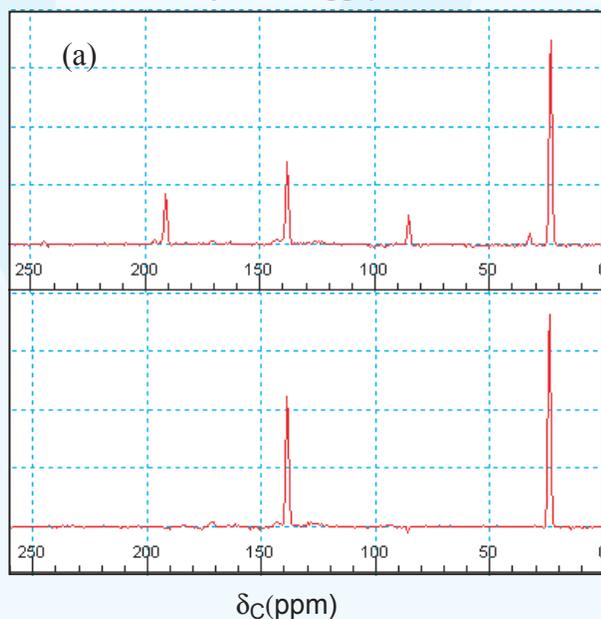positions and finally click Apply.

Fig. 2. The ^{13}C CP spectra of HMB (a) and
tyrosine hydrochloride (b) acquired with (top)
and without (bottom) SELTICS sequence.

5. Reference

1. J. Hong, G. Harbison, *J. Magn. Reson., Series A, 105,* **1993***,* 128-136.

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