

Accepted Manuscript

A Resistive Q-switch for Low-field NMR Systems

J.Z. Zhen, K.T. O'Neill, E.O. Fridjonsson, P.L. Stanwix, M.L. Johns

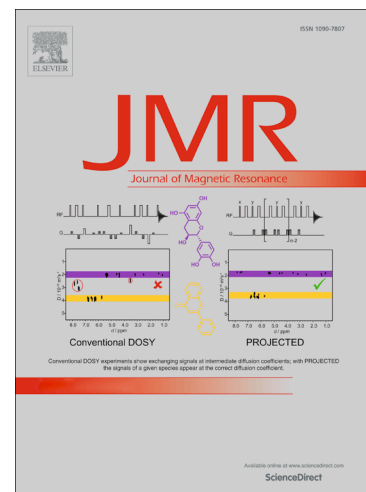
PII: S1090-7807(17)30298-7
DOI: <https://doi.org/10.1016/j.jmr.2017.12.006>
Reference: YJMRE 6208

To appear in: *Journal of Magnetic Resonance*

Received Date: 10 November 2017
Revised Date: 6 December 2017
Accepted Date: 7 December 2017

Please cite this article as: J.Z. Zhen, K.T. O'Neill, E.O. Fridjonsson, P.L. Stanwix, M.L. Johns, A Resistive Q-switch for Low-field NMR Systems, *Journal of Magnetic Resonance* (2017), doi: <https://doi.org/10.1016/j.jmr.2017.12.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



A Resistive Q-switch for Low-field NMR Systems

J.Z. Zhen ^{a, 1}, K.T. O'Neill ^{a, 1}, E.O. Fridjonsson ^a, P.L. Stanwix ^a, M.L. Johns ^{a, *}

^a *School of Mechanical and Chemical Engineering, University of Western Australia, Crawley, WA 6009, Australia.*

Abstract

A NMR Q-switch was designed and constructed specifically for use with low-field NMR apparatus. This featured a comparatively simple resistive damping design. It served to reduce the r.f. probe ring-down time, and hence reduced the signal acquisition delay from 25 ms to 9 ms, on an Earth's magnetic field NMR system. The advantage of this earlier acquisition was demonstrated for both an aqueous suspension of iron oxide particles and using an NMR flow meter.

Keywords: Q-switch; Ring-down; Damping; Low-field NMR; Earth's field NMR; Flow meter.

* Electronic mail: michael.johns@uwa.edu.au

Download English Version:

<https://daneshyari.com/en/article/7841416>

Download Persian Version:

<https://daneshyari.com/article/7841416>

[Daneshyari.com](https://daneshyari.com)