

# SUPPORTING INFORMATION

for

## Clinical-Scale Batch-Mode Production of Hyperpolarized Propane Gas for MRI

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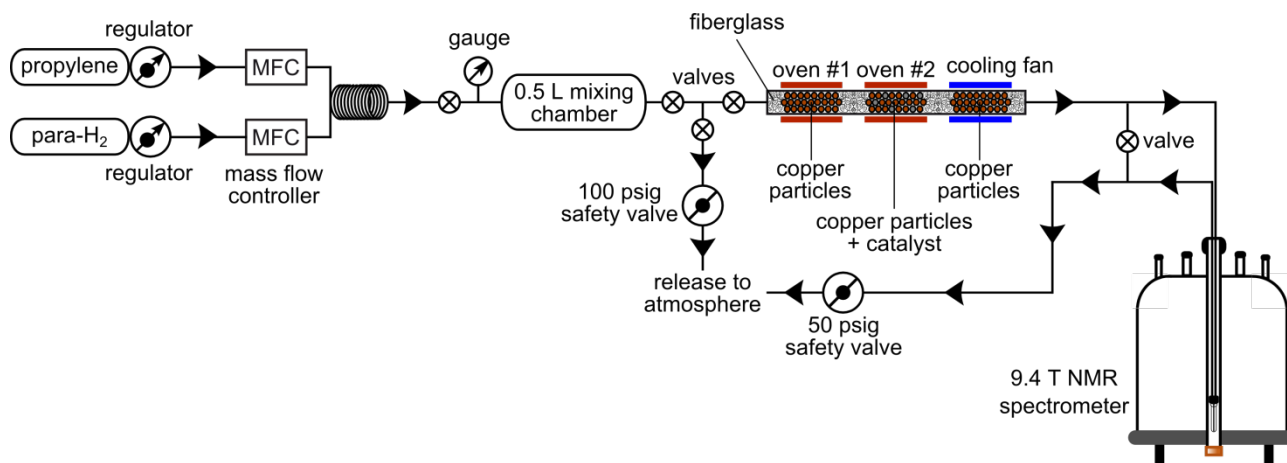
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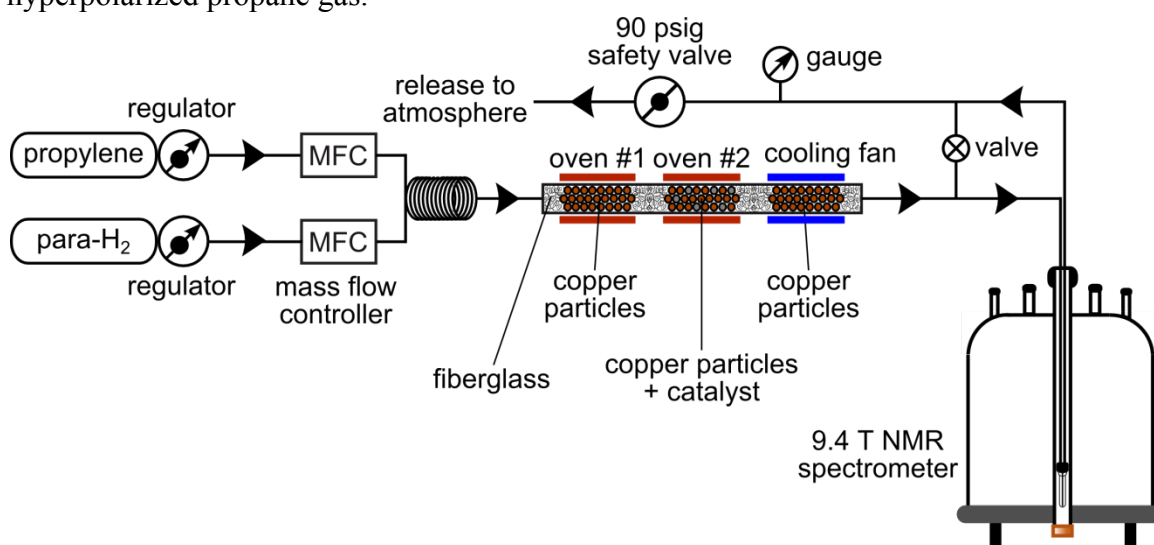
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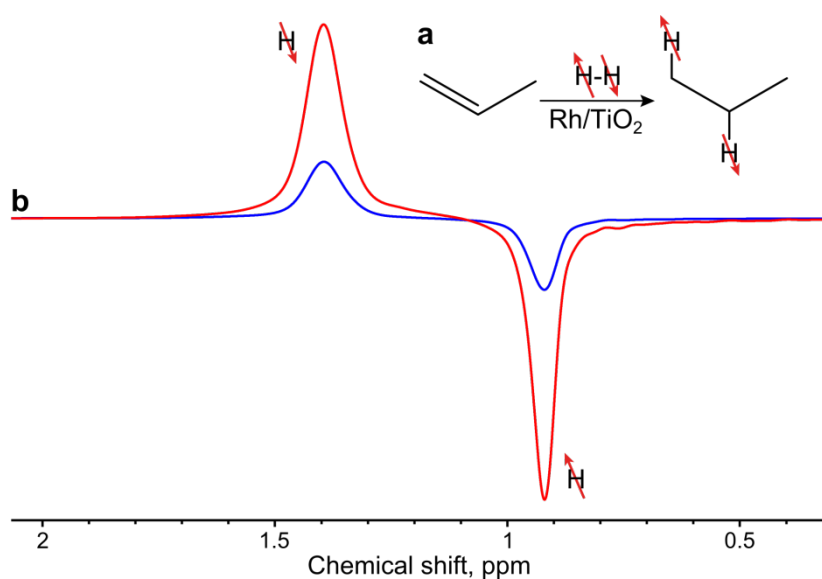
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**Figure S1.** Scheme of experimental setup for batch-mode production and NMR detection of hyperpolarized propane gas.

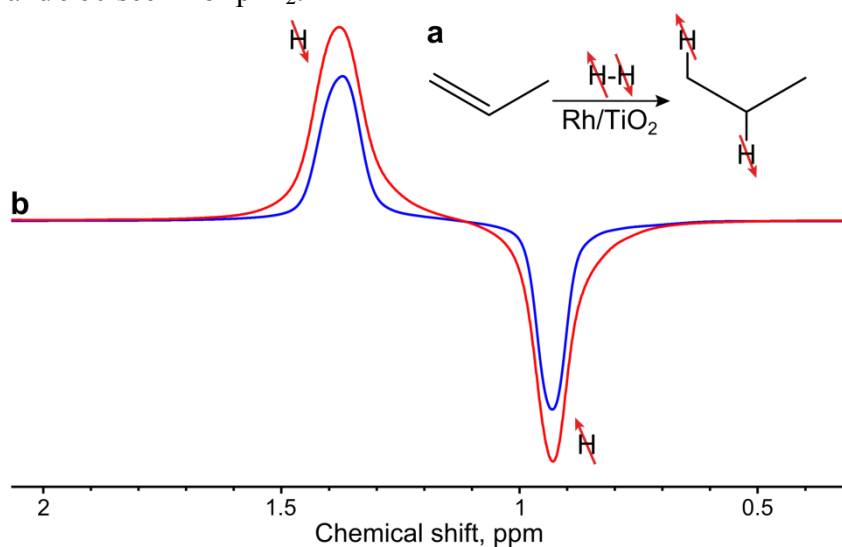


**Figure S2.** Scheme of experimental setup for continuous mode production and NMR detection of hyperpolarized propane gas.

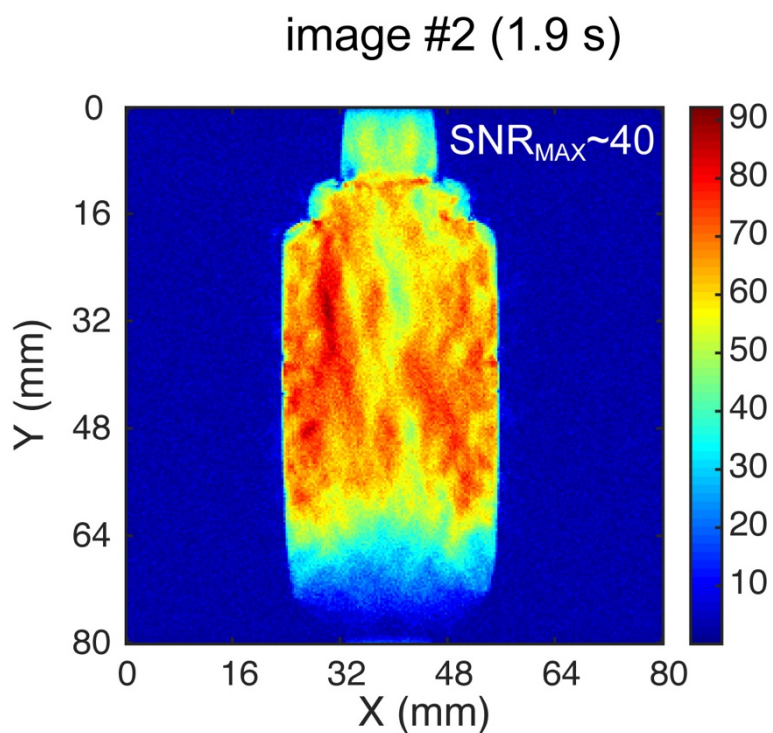


**Figure S3.** (a) Reaction scheme of pairwise addition of parahydrogen to propylene to form hyperpolarized propane. (b) ALTADENA  $^1\text{H}$  NMR spectra of continuously flowing HP propane gas

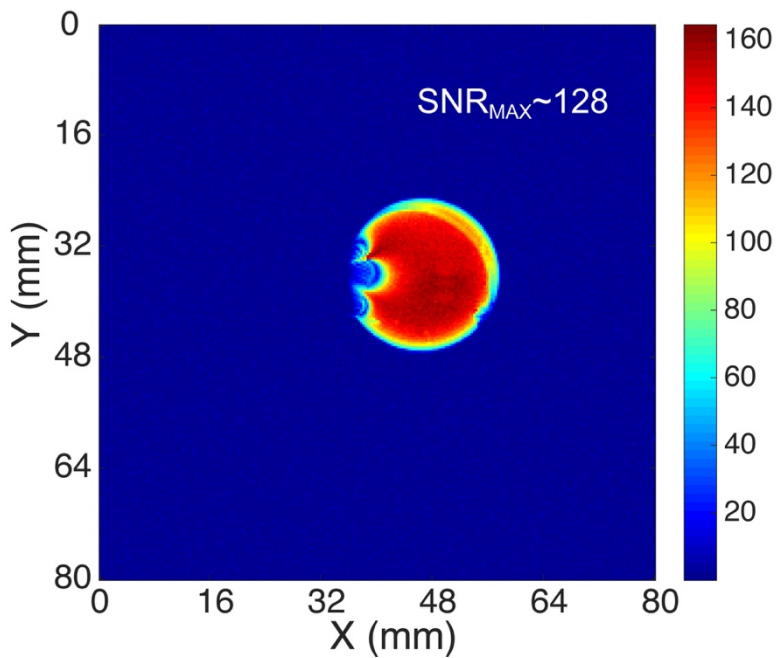
before (blue trace) and after (red trace) the catalyst employment in cyclopropane hydrogenation. Conditions: catalyst mass = 118 mg, T = 100 °C, P = 90 psig, gas flow rates 480 sccm for propylene and 960 sccm for p-H<sub>2</sub>.



**Figure S4.** (a) Reaction scheme of pairwise addition of parahydrogen to propylene to form hyperpolarized propane. (b) ALTADENA <sup>1</sup>H NMR spectra of continuously flowing HP propane gas before (blue trace) and after (red trace) the catalyst employment in cyclopropane hydrogenation. Conditions: catalyst mass = 280 mg, T = 130 °C, P = 90 psig, gas flow rates 480 sccm for propylene and 960 sccm for p-H<sub>2</sub>.



**Figure S5.** Enlarged version of the second image from the series of MRI HP propane images shown in Figure 4a.



**Figure S6.** Corresponding image of thermally polarized neat water phantom for comparison with series of HP propane images shown in Figure 4a.