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**Sonochemistry: A New Route to Alumoxane Gel –
A Versatile Precursor to γ -Alumina and Alumina Based Ceramic Oxides**

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Supplementary Material

Ultrasonication - Sonics, Model VC 601, 1.25 cm Ti horn, 20 KHz, 100 W/cm²

¹³C-NMR and ²⁷Al-NMR - Varian Instrument Unityplus 300 wide bore spectrometer)

Thermogravimetric analysis - TA instruments, model 2950

Fluorescence spectroscopy – Leica Confocal Microscope

Solid-state ¹³C NMR expanded spectra for the Al(HEH) starting material (a) and for the aluminoxane gel after drying (b).

TG analysis of dried Alumina Gel (heating rate 10° per minute)

Figure 5. ²⁷Al MAS NMR spectrum of a γ -Al₂O₃ after being heated at 900°C for 5 h.

^{27}Al MAS NMR spectrum of the YAG nanoparticles.

A $60 \times 60 \mu\text{m}$ fluorescence image of a YAG sample, using 480 nm excitation wavelength. The emission is at 510 nm.