

Supplementary information

SI-A: Measurement were performed using a Bruker Avance III spectrometer (700 MHz, magnetic field of 16.5 T), rotation frequency at magic angle. According to the fitting curve it is possible to extract several contributions. Thus the rate of gallium in octahedral site increase with the calcination step at the expense of gallium in antisite (tetrahedral site).

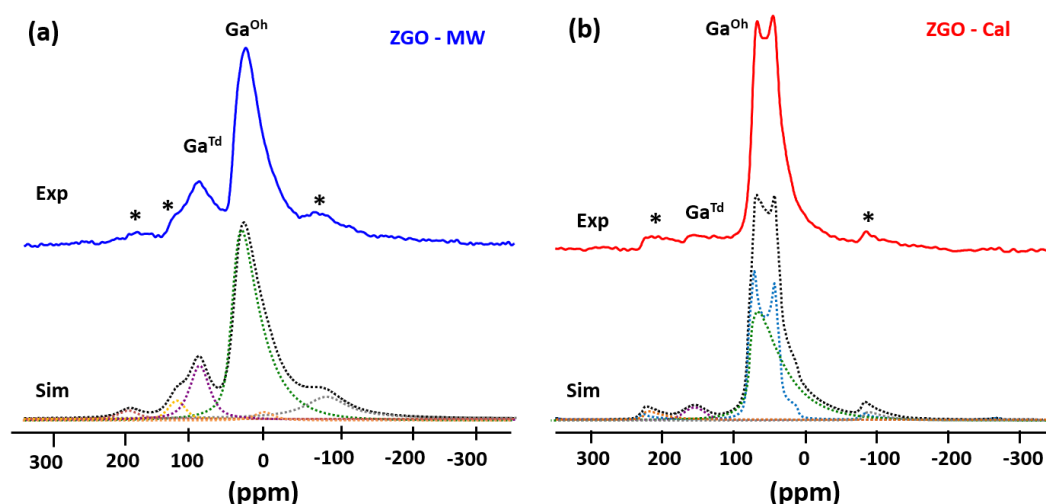


Figure A-1 : RMN experimental (solid lines) and simulated (dot lines) spectra after MW and after calcination during 2 h at 1000 °C. Ga^{Td} refers to Ga^{3+} ions in tetrahedral site and Ga^{Oh} to Ga^{3+} ions in octahedral site. The spinning side bands are indicated with asterisk.

Tableau A-1 : NMR parameters extracted from fitted curves

	Site	δ_{iso} (ppm)	dCSA (ppm)	C_Q (MHz)	η_Q	%
ZGO – MW	Ga^{Td}	144 ± 1	-	-	-	18 ± 1 %
	Ga^{Oh}_{dist}	70 ± 1	22 ± 2	$8,1 \pm 0,1$	-	82 ± 1 %
ZGO – Cal	Ga^{Td}	151 ± 1	-	-	-	3 ± 1 %
	Ga^{Oh}_{dist}	71 ± 1	21 ± 2	$7,5 \pm 0,1$	$0,22 \pm 0,03$	97 ± 1 %

SI-B: Influence of the time after excitation shutdown on the persistent intensity ratio between two bands respectively centered at 692 nm and 705 nm. The acquisition conditions are the same, it is important to notice that the signal to noise ratio decrease with the time after which the registration start.

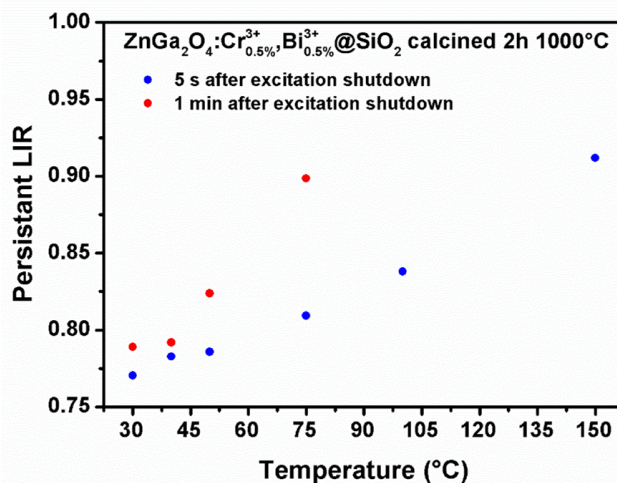


Figure B-1 : LIR of persistent luminescence at several temperature extract from persistent luminescence emission spectra recorded 5 s (in red) and 1 min after stopping the excitation source