Supporting Information

Self-recoverable broadband near infrared mechanoluminescence from $BaGa_{12}O_{19}:Cr^{3+}$ by multi-site occupation strategy

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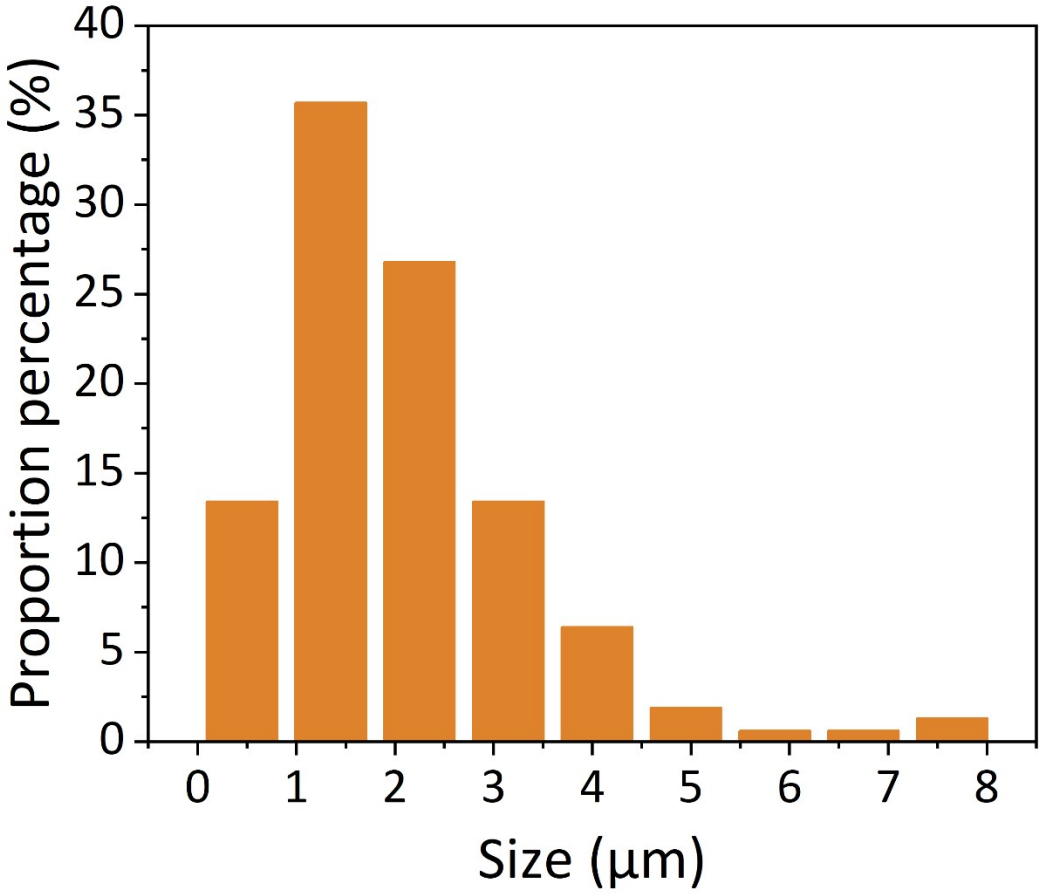

Fig. S1 Particle size distribution of $BaGa_{11.75}O_{19}$:0.25Cr^{3+}

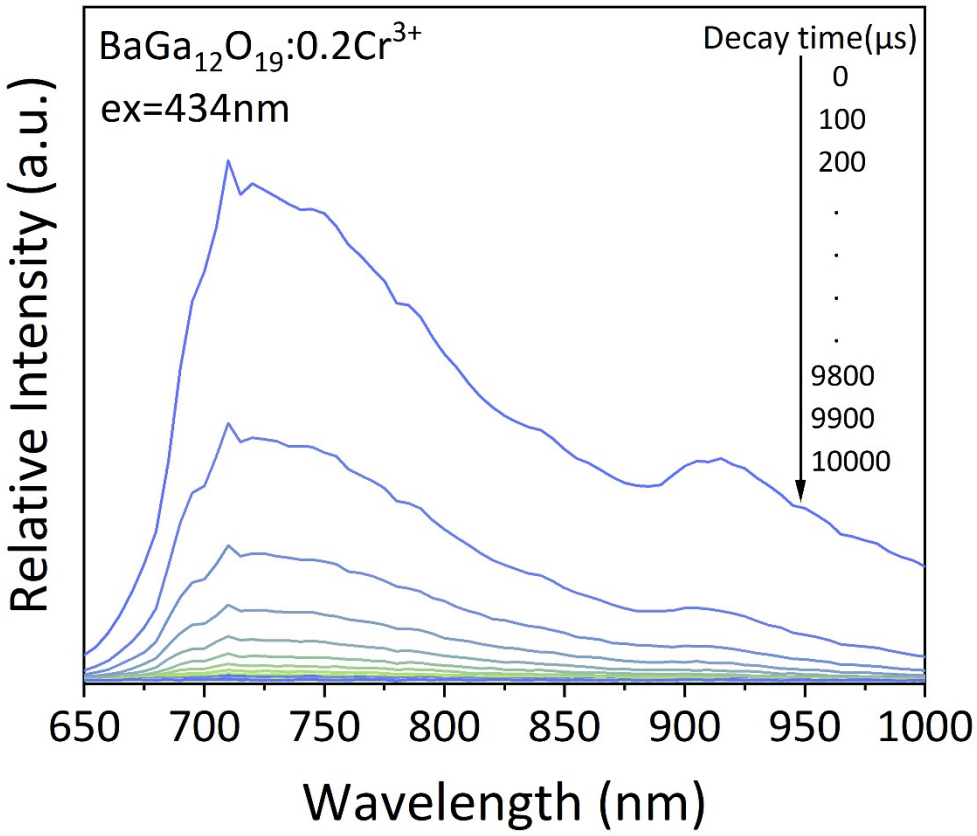

Fig. S2 Time-resolved spectra of $BaGa_{11.75}O_{19}$: $0.25Cr^{3+}$ sample upon excitation at 265 nm.

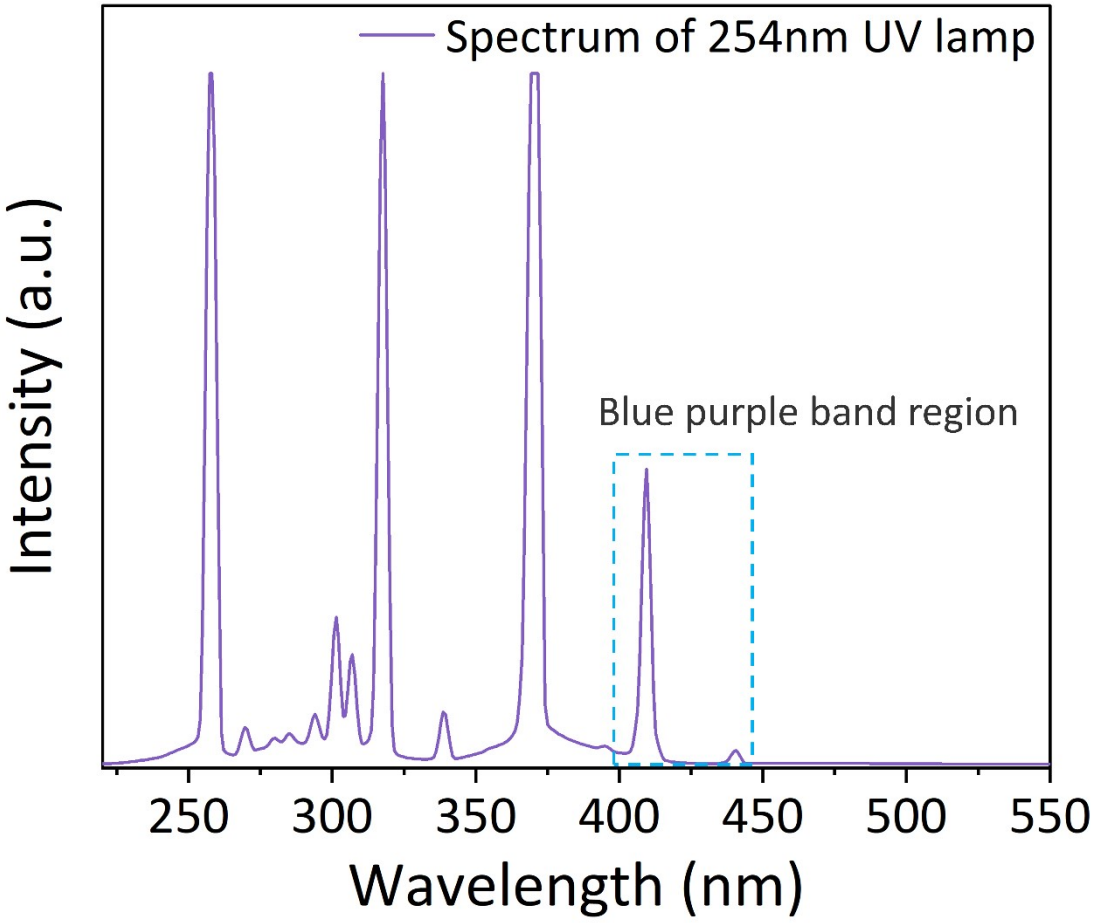

Fig. S3 Spectrum of 254nm UV light source.

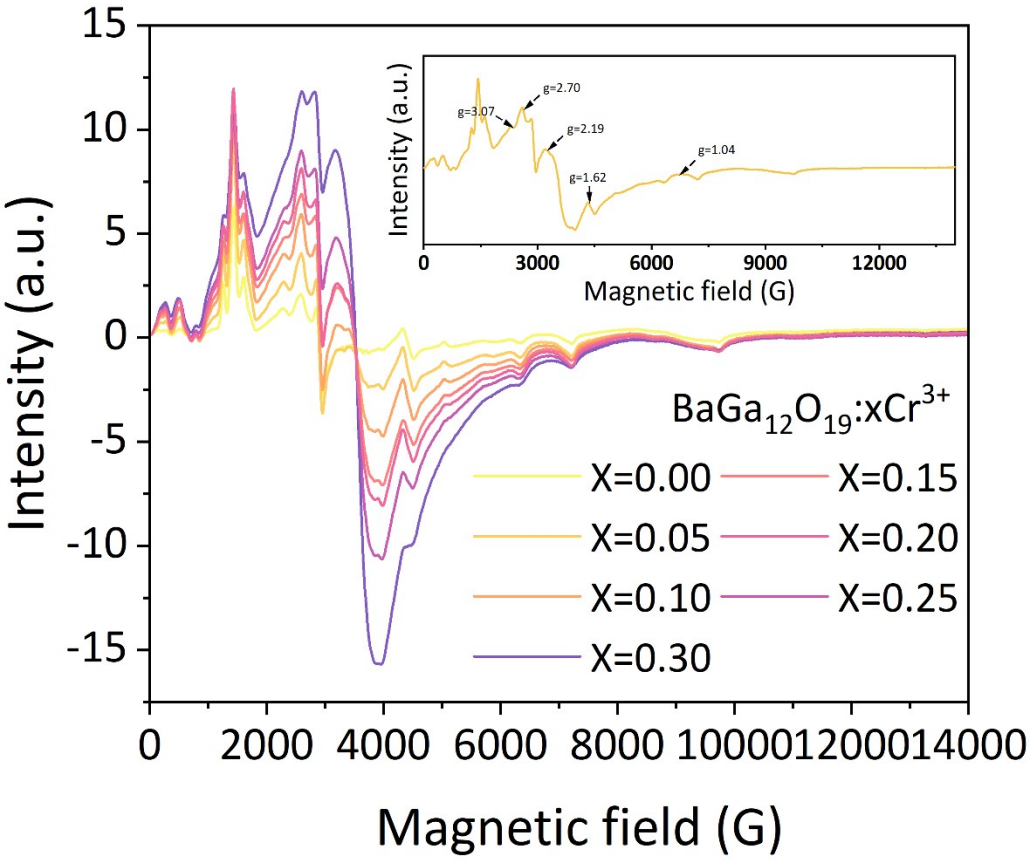

Fig. S4 EPR curves measured of $BaGa_{12-x}O_{19}$: xCr^{3+} (x = 0-0.30)

Table S1 The data related to the intensity and self-recovery ability of Cr^{3+} ion-doped self-recovery ML materials

ML Materials	Cycle times	Percentage of ML intensity before and after cycle testing	Intensity (a.u.) (2500N; stress)
$BaGa_{12}O_{19}:Cr^{3+}$	200	109.69%	250
$MgGa_2O_4:Cr^{3+}$	40	～99.52%	
$LaAlO_3:Cr^{3+}$	15	～42.08%	113
$Ga_2O_3:Cr^{3+}$	10	90.00%	290
$LiGa_5O_8:Cr^{3+}$	10	～92.41%	90
$Y_3Ga_3MgSiO_{12}:Cr^{3+}$	25	～119.50%	
$SrGa_{12}O_{19}:Cr^{3+}$	100	～100.00%	35
$Ba_2GaSbO_6:Cr^{3+}$	25	～71.73%	
$Sr_2ScSbO_6:Cr^{3+}$	25	～66.67%	
$Sr_2GaSbO_6:Cr^{3+}$	25	～66.95%	