

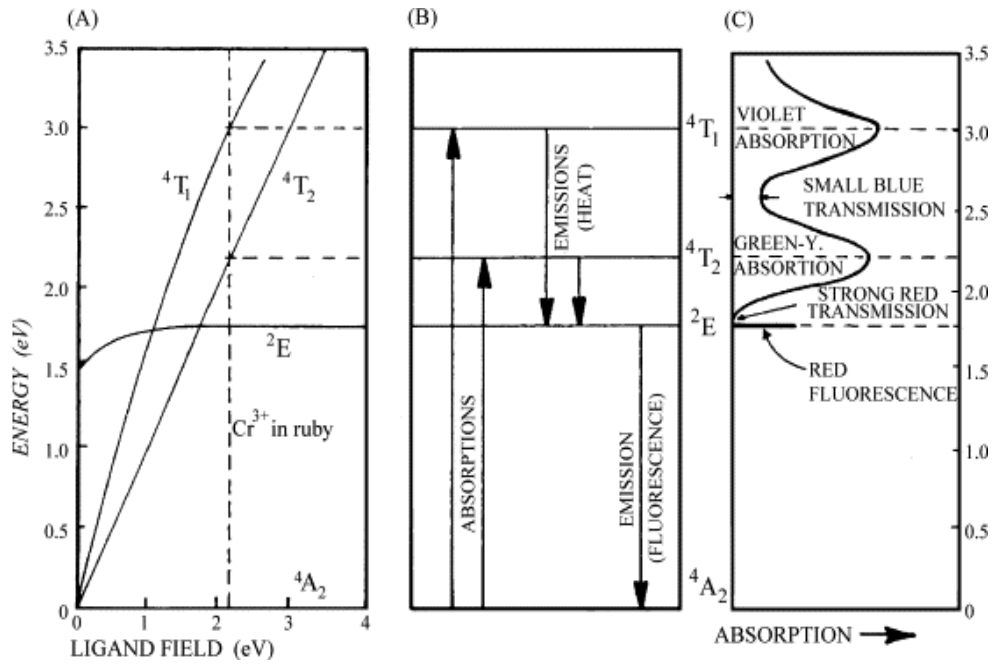
## - Cr<sup>3+</sup> Activated Luminescent & Laser Materials -

### Overview

Phosphor composition	Mineral type	Emission spectrum peaks at [nm]
Be <sub>3</sub> Al <sub>2</sub> Si <sub>6</sub> O <sub>18</sub> :Cr	Emerald	682
MgAl <sub>2</sub> O <sub>4</sub> :Cr	Spinel	682
Y <sub>3</sub> Al <sub>5</sub> O <sub>12</sub> :Cr (YAG:Cr)	Garnet	688
GdMgAl <sub>11</sub> O <sub>19</sub> :Cr	Magnetoplumbite	693
BaMgAl <sub>10</sub> O <sub>17</sub> :Cr	β-Alumina	694
Al <sub>2</sub> O <sub>3</sub> :Cr	Corundum (Ruby)	694
ZnAl <sub>2</sub> O <sub>4</sub> :Cr	Spinel	698
MgO:Cr,Li	Rocksalt	698
ZnGa <sub>2</sub> O <sub>4</sub> :Cr	Spinel	700
Lu <sub>3</sub> Ga <sub>5</sub> O <sub>12</sub> :Cr (LGG:Cr)	Garnet	703
Lu <sub>3</sub> Al <sub>5</sub> O <sub>12</sub> :Cr (LuAG:Cr)	Garnet	704
MgGa <sub>2</sub> O <sub>4</sub> :Cr	Spinel	705
YAl <sub>3</sub> (BO <sub>3</sub> ) <sub>4</sub> :Cr	Huntite	715
LiAl <sub>5</sub> O <sub>8</sub> :Cr	Spinel	716
GdAl <sub>3</sub> (BO <sub>3</sub> ) <sub>4</sub> :Cr	Huntite	725
GdAlO <sub>3</sub> :Cr	Perovskite	726
Y <sub>3</sub> Ga <sub>5</sub> O <sub>12</sub> :Cr (YGG:Cr)	Garnet	730
LaAlO <sub>3</sub> :Cr	Perovskite	734
Gd <sub>3</sub> Ga <sub>5</sub> O <sub>12</sub> :Cr (GGG:Cr)	Garnet	745
BeAl <sub>2</sub> O <sub>4</sub> :Cr	Chrysoberyll	750
Gd <sub>3</sub> Sc <sub>2</sub> Al <sub>3</sub> O <sub>12</sub> :Cr (GSAG:Cr)	Garnet	780
SrAl <sub>12</sub> O <sub>19</sub> :Cr	Magnetoplumbite	790
SrSc <sub>2</sub> O <sub>4</sub>	Calcium ferrite	795
CaAl <sub>12</sub> O <sub>19</sub> :Cr	Magnetoplumbite	800
CaSc <sub>2</sub> O <sub>4</sub>	Calcium ferrite	820
Mg <sub>2</sub> SiO <sub>4</sub> :Cr,Li	Forsterite	890

### Luminescence mechanism of Cr<sup>3+</sup>:

[Ar]3d<sup>3</sup> (<sup>4</sup>A)- [Ar]3d<sup>3</sup> (<sup>4</sup>T, <sup>2</sup>E) intraconfigurational transitions



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Synthesis and study of a new class of red pigments based on perovskite YAlO<sub>3</sub> structure

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### Excitation and emission spectra of selected Cr<sup>3+</sup> doped materials

