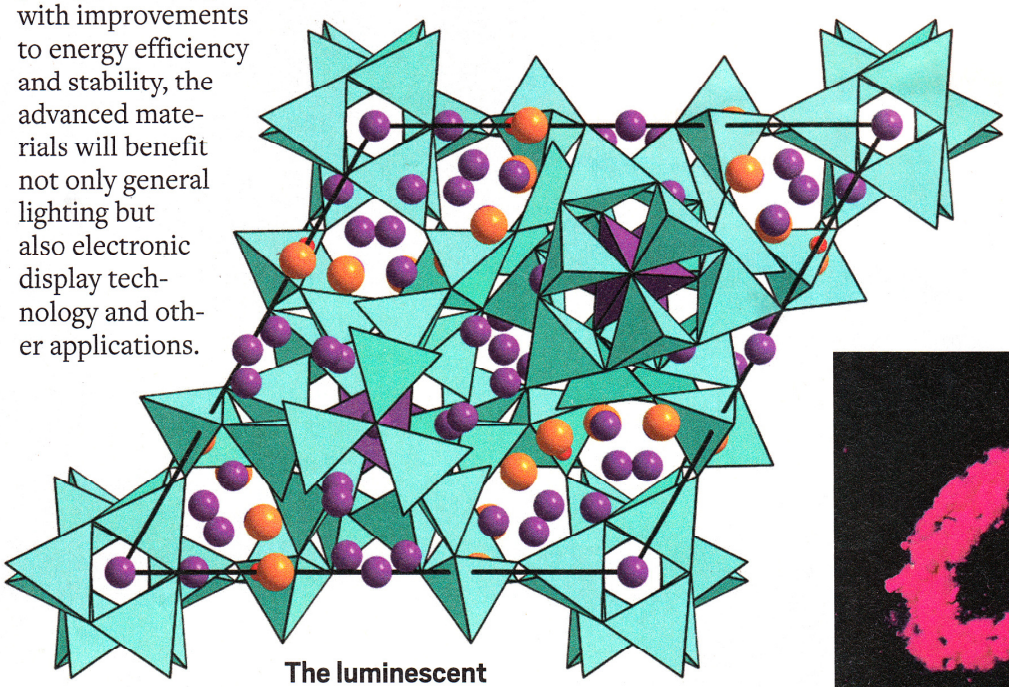
To make LEDs that are more pleasing to consumers for home use, scientists are developing new phosphors. These are inorganic compounds, often applied to the resin-based dome-shaped cap covering an LED, that can alter the light emitted, giving it a more pleasing hue. Combined with improvements to energy efficiency and stability, the advanced materials will benefit not only general lighting but also electronic display technology and other applications.



The luminescent phosphor depicted above and to the right emits deep-red light. Black outline = unit cell. Turquoise = SiN_4 tetrahedra. Violet = LiN_4 tetrahedra. Red = O and F. Purple = Li. Orange = La, Ce, or Y.

Shining blue light on this Ce^{3+}-doped phosphor powder causes it to emit deep-red light.