Nonuniform Distributions of Color and Luminescence of Diamond Single Crystals

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The distributions of the color and luminescence of diamond are reviewed in relation to its growth mechanism. A wide variety of color and luminescence have been reported, which are caused by point defects such as impurities. The color and luminescence are not uniform inside a crystal; they vary depending on growth sectors and along growth directions. The slope of the growth surface and the propagation rate of growth steps affect the color and luminescence. Luminescence patterns related to strain are also observed.

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