



The reasons for the color green fluorite Mehmandooye cover using UV spectroscopy and XRF results

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Fluorite mineral or fluorine with chemical formula CaF_2 is most important mineral fluor in nature. This mineral crystallization to colors yellow, green, pink, blue, purple, colorless and sometimes black and in cubic system crystallized. As semi-transparent and glass with polished fluorite, the purity includes 48/9% fluorine and 51/9% calcium. How the creation of colors in minerals differs greatly is indebted to Kurt Nassau's research from Bell Labs, Murray Hill, New Jersey. Almost all the mechanisms that cause color in minerals, are the result of the interaction of light waves with the electrons.

The main factors affecting the color generation include the following:

- 1) the presence of a constructive element inherent (essential ingredient mineral composition)
- 2) The presence of a minor impurity (such an element as involved in lattice solid solution)
- 3) appearance of defects in the crystal structure
- 4) There are some physical boundaries with distances very small and delicate, like blades out of the solution (which may be the play of colors or Chatviansy)
- 5) Mixing mechanical impurities dispersed in a host mineral

Based on the results of the analysis, XRF and UV spectrum and also based on the results of ICP, because the color green fluorite examined, the focus color (F_{center}) and also the presence of some elements intermediate (such as Y (yttrium)).

[1] Bill, H., Calas, G. Color centres associated rare earth ions and the origin of coloration in natural fluorites // PhysChem Min, (1978), v 3, pp. 117-131.