

MS 513

Color mixing by flame color reaction

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motives

When I learned about flame color reaction in class, I wanted to use this color change phenomenon to create colors other than just known colors, such as pink.

Aims

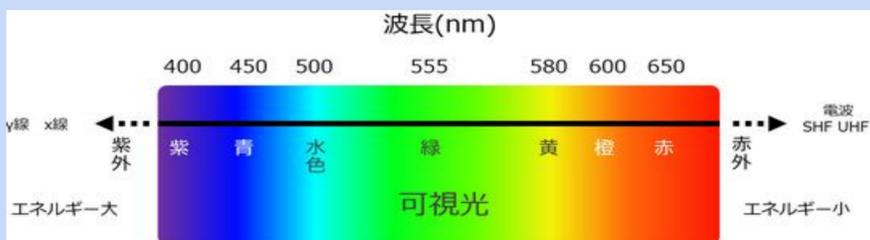
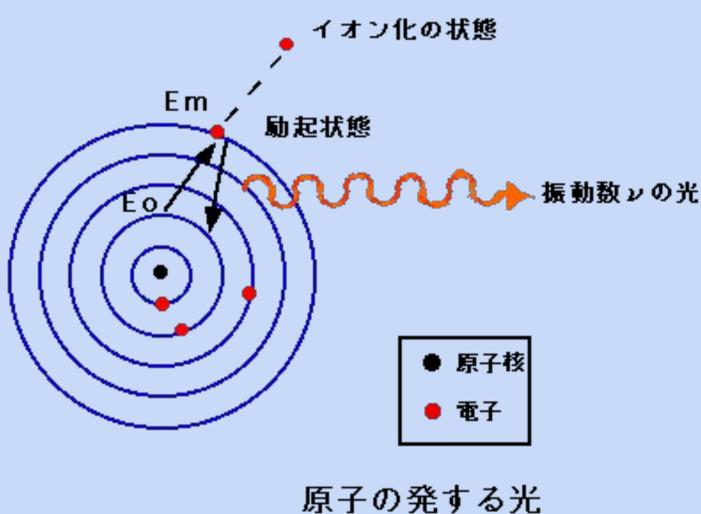
Creating various colors by mixing colors in a flame reaction.

Methods

1. Varying the liquid, substance, and amount to be mixed, and examining the color of the flame.
2. Mix a solution of dissolved metal and spray it over the flame.

Hypothesis

1. Burning two or more metals in ethanol ⇒ Colors mix.
 Example: Mixing copper (blue) and strontium (red) produces a purple color
2. The colors did not mix in the first experiment, but they do in this experiment.



Change in the color of light with wavelength

Results

1.

	CuCl ₂	NaCl	CaCl ₂	KCl	LiCl
CuCl ₂		G Y separately	G O almost green	G	G R timing is different
NaCl			Y O hard to understand	Y	Y R almost red
CaCl ₂				O	O R hard to understand
KCl					R
LiCl					



CuCl₂+LiCl



CaCl₂+KCl

G is green
 Y is yellow
 O is orange
 R is red

2. We're in the process of doing it. So far, as in Experiment 1, the colors come out separated.



CuCl₂



CaCl₂



CaCl₂+CuCl₂

Consideration

They appear colored because each light has a unique wavelength. It is thought that they cannot mix colors because our technology cannot change wavelengths.