

Discussion Question Answers Dr. Elmer Imes and Spectroscopy

On Elmer Imes:

1. Where was Imes from and where did he go to school?

Imes was born in Memphis, Tennessee. He went to grammar school in Oberlin, Ohio, and attended an agricultural and mechanical high school in Normal, Alabama. He earned a Bachelor's degree from Fisk University and his PhD. From the University of Michigan.

2. Why did Dr. Imes study infrared spectroscopy?

Imes wanted to be a physicist, and could not attend many of the southern institutions due to segregation and prejudice, so he attended the University of Michigan, which had become a center for infrared spectroscopy by the 1910's.

3. What was significant about Dr. Imes' research? What was going on in the history of physics?

Imes' dissertation provided the first accurate description of the distances between atoms in a molecule, evidenced the existence of two chlorine isotopes, and expanded quantum theory's applicability.

On Spectroscopy:

1. What do you see?

Colors, bright lines of color near the spectral tube, rainbows by the regular lights.

2. What do you think the diffraction glasses are doing to the light?

Breaking up the light, splitting the light up in to different colors.

3. What do you think is causing the bright lines by the spectral tube?

The atomic emission from the gas inside of the tube.

4. Do you think that those bright lines would change if there was a different gas inside of the tube?

Yes. Different gases (different elements) emit different wavelengths (colors) of light when they're excited.