

Answer to Question #52057 - Physics - Optics

Question

Explain why a diamond loses most of its sparkle when submerged in carbon disulfide.

Answer: If you change the environment of just air between you and the diamond, you will change the way light behaves. The diamond was cut and polished to maximize this effect, especially with the round brilliant cut, but based on light traveling through air only between your eyes and the gem. Put it in any liquid and you change the refractive index, the way the light is slowed down and bent when it enters another medium : when the light moves from air to the diamond, it will be bend, and reflected due to the cutting. When it moves from air to liquid, the light will be bend also, but differently. And it will be bend differently when you look at it with diamond surrounded by liquid, so that the light does not come back to your eyes in the optimal way.