

MSE Seminar

Friday, September 19

McBryde 113

Refreshments at 3:00

Demos and Seminar at 3:30

Prof. Richard Zallen

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## Fluorescence, Super-Phosphorescence, and *The Hound of the Baskervilles*

New phosphors have been discovered in recent years that glow (after excitation stops) longer and brighter than those previously known. Among other applications, these materials enable some entertaining teaching demos, several of which will be shown. Aspects of the history of fluorescence will be briefly described, touching on contributions by Stokes, Einstein, Hopfield, Chalfie, and J. Zallen. The new materials and proposed mechanisms for their long-persistent (>10 hours) luminescence will be described, as will a connection to Sherlock Holmes and “The Hound”.

*“It was certainly a curious sight to see the tube instantaneously lighted up when plunged into the invisible rays: it was literally **darkness visible**. Altogether the phenomenon had something of an unearthly appearance.” - - G.G. Stokes*

*“...  $\nu_2 \leq \nu_1$ . Dies ist die bekannte Stokessche Regel.” - - A. Einstein*

*“It may be that you are not yourself luminous, Watson, but you are a conductor of light.” - - Sherlock Holmes (A. Conan Doyle)*