

Frontiers in nuclear medicine: collaboration between physics and medicine

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Light is both a particle and a wave. Newton considered light to be composed of particles based on the observation that light creates shadows. Huygens regarded light as a wave through the observation that light passes through each other without interference when intersecting. Thomas Young, a physician and scientist, demonstrated through interference experiments that light is indeed a wave, while Einstein proved its particle nature through the photoelectric effect.

Nuclear medicine utilizes light for medical purposes. To introduce nuclear medicine to physicists, I summarized the stories of the great scientists who researched light focused on the medical use of their research output. Names of the greatest scientist I want to introduce include Sir Frederick William Herschel, Johann Wilhelm Ritter, Wilhelm Conrad Röntgen, Alexandre-Edmond Becquerel, Pierre and Marie Salomea Sklodowska Curie, Sir Joseph John Thomson, Ernest Rutherford, George Charles de Hevesy, Irène and Jean Frédéric Joliot-Curie, Ernest Orlando Lawrence, Enrico Fermi, Paul Adrien Maurice Dirac, and Carl David Anderson.