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Photothermal Spectroscopy: Basics and Applications

December 14th, 2022 • 11:15 AM EST • Hybrid in Colburn 104

Photothermal spectroscopy refers to the measurements of the matter's ability to generate heat upon absorption of light photons – photothermal quantum yield. The absorption of a tunable radiation produces changes in the transmission and reflectivity of light depending of the amount of heat produced. In combination with the traditional transmission technique, the method provides the quantum yield of absorption, scattering, or luminescence of a particular sample. We discuss different approaches and advantages of the technique with the used of continuous-wave and pulse tunable sources of light.

Speaker Bio

Aristides Marcano Olaizola joined Delaware State University as an Associate Professor in 2006. He is currently a Professor of Physics of the Division of Physics, Engineering, Mathematics, and Computer Science. He received his Ph.D. in Physics and Mathematics from Moscow State University M.V. Lomonosov, Moscow, Russia, in 1980. Dr. Marcano has published extensively in the areas of applied optics, nonlinear optics, laser spectroscopy, photothermal effects, Raman, and most recently in the interaction of laser light with biosamples (88 peer-reviewed, three book chapters, 53 proceeding papers). His publications are well cited (over 1500 citations according to Google Scholar). He has participated as PI and CO-PI on major multimillion-dollar grants awarded to the university. He has been the research mentor of fifteen graduate students and a significant number of undergraduate students. Dr. Marcano has also served as Chair of the former Department of Physics and Engineering (2011-2015) and as a member of committees in other departments, the college, and the university.

