

CORE-CM SEMINAR
Michigan State University — Department of Chemistry

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Michigan State University

Developing and applying the concept of ultrafast shaped pulses as photonic reagents and coherence probes

Just like chemical reagents are used for testing, chemically transforming and sensing other compounds, photons can serve the same purpose. The key challenge, however, is determining how to create laser pulses that most efficiently achieve the desired goal and have no other effect on the target. Success in this endeavor can result in numerous significant applications, for example non-invasive cancer detection, advanced proteomic analysis capable of detecting weakly bound post-translational modification, and non-intrusive explosives trace detection. The approach to be presented involves the use of ultrashort femtosecond laser pulses with phase functions designed to control nonlinear optical interference. This presentation will discuss some of the principles of ultrafast pulse shaping, illustrate the most salient areas for applications, and highlight technologies required to make this concept economically practical.

Thursday, January 9, 2014
12:00 PM
Room 1415 – BPS
Professor Jim McCusker – Host

Accommodations for persons with disabilities may be requested by calling the Chemistry Department at (517) 355-9715, X191 two days prior to the event to ensure sufficient time to make arrangements. Requests received after this date will be met when possible.