MAR12-2011-006059

Abstract for an Invited Paper
for the MAR12 Meeting of
the American Physical Society

Transient IR Probes of Spinning Molecules in an Optical Centrifuge[1]

AMY MULLIN, University of Maryland

A high-power optical centrifuge based on ultrafast laser pulses is used to drive molecules into very high rotational states. The optical centrifuge consists of reversed-chirped laser pulses that generate a linearly polarized electric field that angularly accelerates over the time of the pulse. Molecules trapped in the optical field are spun into high rotor states through sequential Raman transitions. The properties of the spinning molecules and their spatial distribution are interrogated with high-resolution state-resolved IR transient absorption probing.

[1]Supported by the University of Maryland and NSF