

Abstract Submitted  
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**Broadband CARS microscopy** MARCUS CICERONE, JOUNG LEE, YEON HO KIM, SAPUN PAREKH, NIST — Coherent anti-Stokes Raman scattering (CARS) microscopy has exciting potential for rapid chemical imaging of materials and noninvasive imaging of biological systems, both in-vivo, and as these systems interact with materials. Although CARS is as much as  $10^6$  times more sensitive than spontaneous Raman scattering, it is accompanied by a nonresonant background (NRB) signal which can mask the resonant signal of interest. This background is generally of sufficient amplitude to make chemical imaging of biological systems difficult or impossible. We will present recent advances made in our lab, both experimental and in numerical data recovery, towards ameliorating the negative aspects of the NRB and facilitating non-invasive chemical microscopy for cell-material interactions.

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