EMERSON CENTER LECTURESHIP AWARD SYMPOSIUM

C. L. EMERSON

FROM FUNDAMENTAL RESEARCH TO BREAKTHROUGHS: PLASMONICS FOR SUSTAINABILITY AND SOCIETAL IMPACT

October 10th, 2024

Department of Chemistry, Atwood Hall, Room #360

AWARD WINNER & KEYNOTE SPEAKER

Prof. Naomi J. Halas,

Rice University

Plasmonics for Sustainability and Societal Impact

When illuminated, the conduction electrons of metallic nanoparticles - known as a plasmon, which is responsible for their strong light-matter interactions and properties - undergo a coherent oscillation and generate numerous highly impactful phenomena. For example, the illumination of metal nanoparticles: (1) leads to their strong heating, which opens horizons for applying metallic nanoparticles in cancer therapy. Currently, light illumination of metal nanoparticles is successfully used in the precise and highly localized ablation of cancerous regions of the prostate, eliminating the harmful side effects characteristic of conventional prostate cancer therapies, and (2) generates nonequilibrium, or "hot" electrons, that can effectively drive various societally impactful chemical transformations, including of, but not limited to, remediation of greenhouse gases by converting them to useful molecules or into benign chemicals.

INVITED SPEAKERS

Raphael F. Ribeiro
Department of Chemistry, Emory University

Hayk Harutyunyan
Department of Physics, Emory University

EVENTS SCHEDULE

2:30 – 3:00	**OPENING CEREMONY & AWARD PRESENTATION**
3:00 – 4:00	**Naomi J. Halas:** *Plasmonics for Sustainability and Societal Impact*
4:00 – 4:45	**Raphael F. Ribeiro**: *Light-Driven Chemistry in Optical Microcavities*
4:45 – 5:30	**Hayk Harutyunyan:** *Efficient Metasurfaces for Nonlinear and Ultrafast Nanophotonics*
5:30 – 5:45	**CLOSING**
6:30 – 9:30	**DINNER** (by invitation)

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Registration is free.