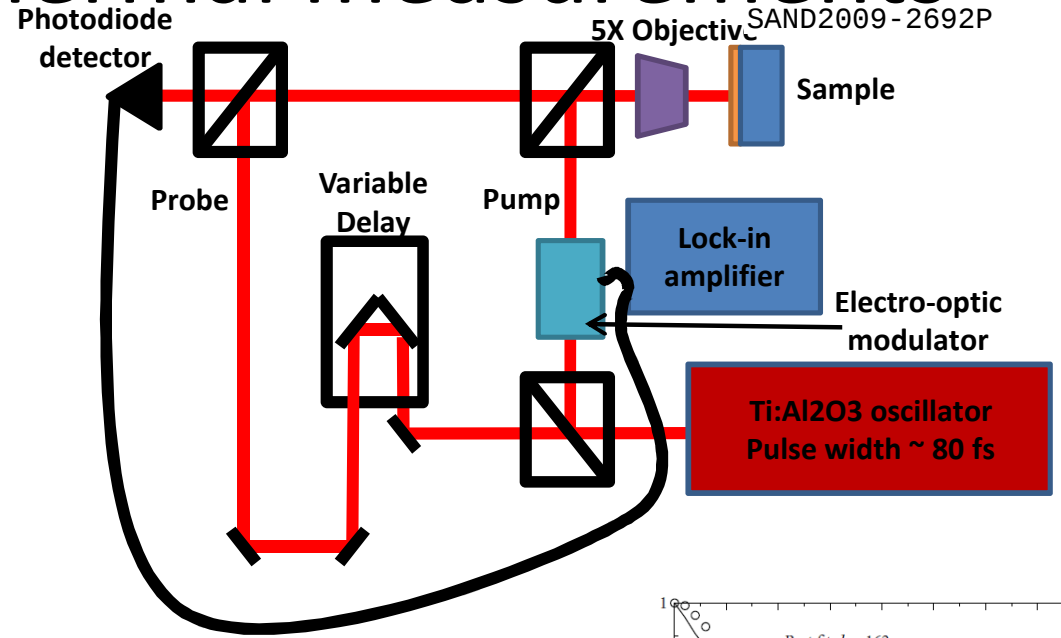
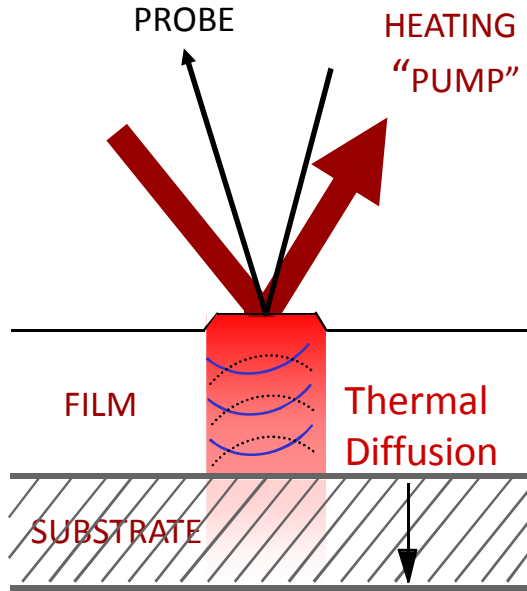
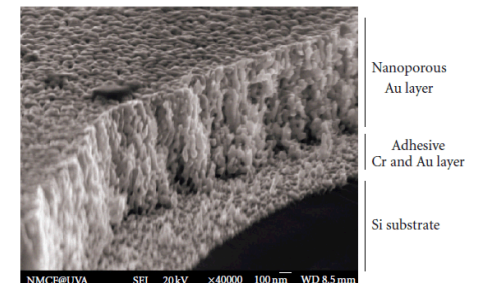
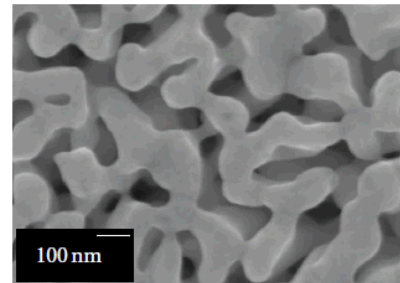
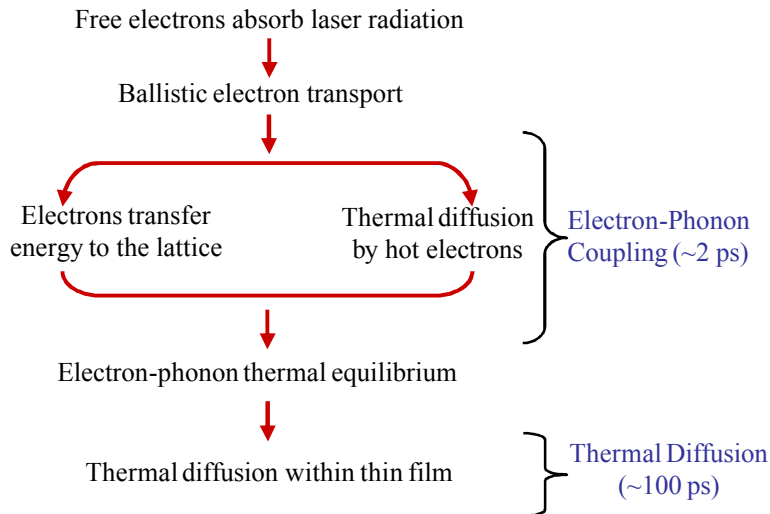
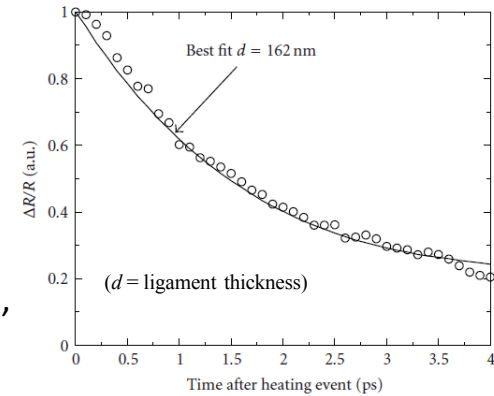


Pump-probe thermal measurements



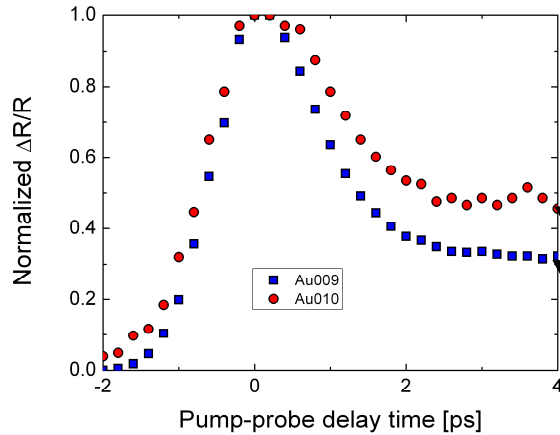
Electron-phonon coupling
in np-Au depends on reduced thermal
conductivity of np structure

Previous work at SNL
Hopkins *et al.*, Journal of Nanomaterials,
vol. 2008, 418050 (2008).



Thermal properties of np-materials

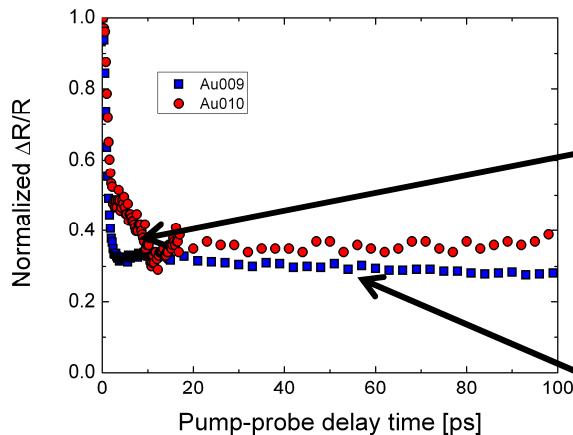
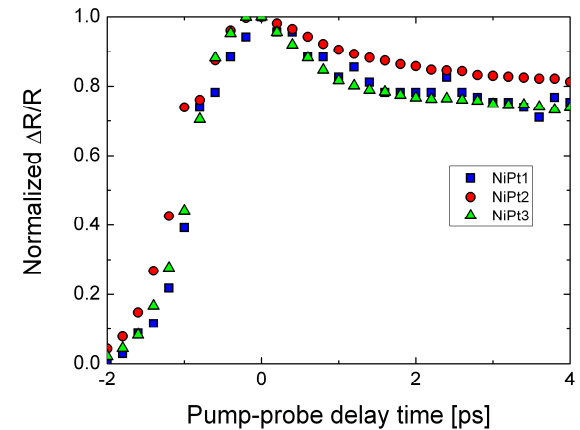
On going LANL-SNL collaboration on CINT RA2008B136:
Patrick Hopkins, Leslie Phinney, Justin Serrano, John Sullivan



E-P coupling and thermal conductivity measurements on Au and NiPt np structures. Solid ligament size could be restricting electron velocity causing differences in the data.

Smaller ligaments
Larger ligaments

In the short E-P coupling data, the microstructure affects the Au more than the NiPt due to the order of magnitude greater electron mean free path in Au than Ni and Pt.



Acoustic effects and thermal expansion

The change in the microstructure also affects the thermal diffusivity

Trends related to thermal diffusivity

