

Homework 2

Please send your answers electronically to epotma@uci.edu by midnight.

- a What is the difference between homodyne and heterodyne signal detection?
- b Read the article 'Label-free biomedical imaging with high-sensitivity by stimulated Raman scattering microscopy'. List the main advantages of SRS over CARS as mentioned in the article.
- c Give the concentration dependence of CARS and SRS
- d Explain why CARS has a different concentration dependence relative to SRS.
- e Explain in words why semiconducting materials have high $\chi^{(3)}$ values.