

## ON CLASS ACTIVITY – RAMAN SPECTROSCOPY

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- Explain what is inelastic scattering why is it different from Rayleigh scattering and fluorescence
  - What are Stokes and anti-stokes scattering? which ones are more abundant and why?
  - Why can stokes and anti-stokes scatterings be used for materials analysis?
  - Why Raman signals have a low intensity?
- Explain the similarities and differences between FT-IR and Raman spectroscopy
  - Explain why Raman signals correspond to wavelengths in the mid infrared
- Explain the main advantages and disadvantages of Raman spectroscopy

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- What are the main components of a Raman spectrometer?
- Why, as contrast with FT-IR, Raman spectroscopy can use a variety of lasers?
- What is a Micro-Raman and how is it used? What are its main applications and advantages?
- Explain some of the variations of Raman spectrometers and in which applications can they be used
  - What is SERS? What are its advantages and how is it used?
- How can Raman spectroscopy be used to analyze inorganic materials? - discuss some applications
- How can Raman spectroscopy be used to analyze polymeric materials? - discuss some applications
- How can Raman spectroscopy be used to analyze carbon and nanostructured carbon materials? - discuss some applications