

## Raman spectrometry and its applications to geoscience fields

Professor Masaki ENAMI (榎並正樹 教授)

Institute for Space-Earth Environmental Research, Nagoya University, Japan  
日本名古屋大學 宇宙地球環境研究所 基盤研究部門

Raman scattering or the Raman effect is the inelastic scattering of a photon. It was discovered by C. V. Raman, who won the Nobel Prize in Physics, and K. S. Krishnan in 1928. Substantive applications of Raman spectrometry to geoscience fields began in the early 1980s, and after it became possible to use a Raman spectrometer with an optical microscope, this method has offered several advantages for microscopic analysis. Thus, Raman spectrometry is now an indispensable tool in the geoscience fields, especially in mineralogy and petrology.

The main contents of the presentation are as follows:

1. Overview of Raman spectroscopy
2. Advantages and disadvantages of using Raman spectroscopy as a microanalysis method, compared with the characteristics of electron-probe microanalysis (EPMA).
3. Applications in mineralogy and petrology
  - \* Phase identification: mineral species and fluid inclusion
  - \* Estimations of mineral and fluid compositions
  - \* Quartz-Raman geobarometry
  - \* Carbonaceous material-Raman geothermometry