Effect of laser irradiation on micro-hardness, compactness and Raman spectrum of glassy Se76Te20Sn2Cd2 alloy

- In this article they want to see the changes in the structure of a sample of Se76Te20Sn2Cd2. They heat the glassy sample then drop it to cold water to make it harder (tempered method). They do the Vicker's test and Raman spectroscopy.
- They use Raman scattering to understand the changes in the structure that can occur on the glasses due to the ilumitanion. The shift of the main Raman peaks can be attributed to the changed chemical environment. Therefore, they have used Raman spectroscopy to determine as far as possible the structural change which can occur in this glass after laser exposure. Fig. 1 presents Raman spectra for as-prepared and laser-exposed samples of glassy Se76Te20Sn2Cd2 alloy in wavenumber range 100–900 cm−1 .
- The "b" and "a" shows two peaks of the image 1 where "b" is generally assigned to the characteristic vibrational mode of the Selenium atoms in amorphous phase that consists of Se chains and rings as well as other mixed units. And "a" is assigned to the bending modes of Se units, Its intensity decreases for samples exposed by diode lasers; irrespective of wavelength. This new feature can be attributed to the enhancement in Sn(Se1/2)4 tetrahedral units .

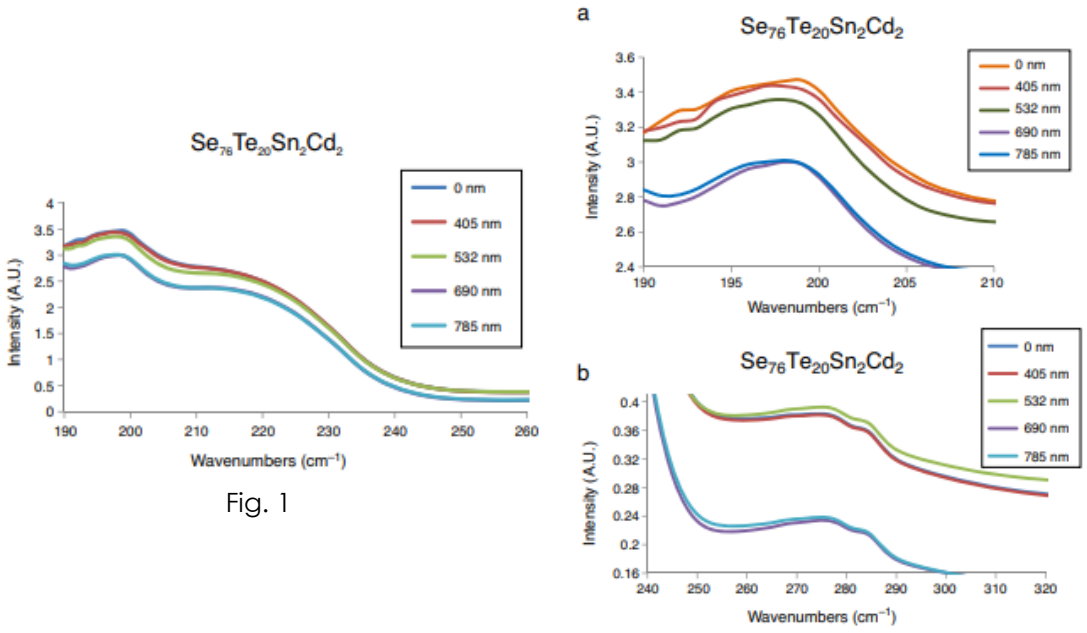

Fig. 1