Crystal sugar, rock sugar, or sugar candy emits visible light when a mechanical stress is applied as Francis Bacon (1615) observed. Sucrose is the main component of sugar, made of one glucose and one fructose molecules, and thus sucrose is a disaccharide and chiral. Therefore the electronic structure is asymmetric and compression of most of the direction will accumulate the electric charge.

Figure 1 shows a schematic illustration of our instrument. The size of the "crystal sugar" was cut to the size of 5 mm x 10 mm x 15 mm; the surface was finished by an iron file. The side surface was observed by an X-ray detector. Reproducibility was checked by many trials. The X-ray detector was CdTe detector (XR-100T-CdTe, Amptek Inc., Bedford MA) with an audio digitizer made by our laboratory [1]. The calibration of X-ray energy was performed by radium radioisotope. The X-ray pulses continues for $4 \times 10^{-3}$ seconds just after a hammer impact. After this interval, as well as before the impact, the X-rays were not observable. Some X-ray energy became higher than 300 keV (CdTe detector). Less than 10 keV energy X-rays were also observed by an SDD as shown in Figure 2. The visible light emission was also observed in our experiment.