

Modern Applications of X-Ray Spectroscopy at Synchrotron Sources

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Scattering of light from gases, liquids and solids have been our main tool for seeing things we cannot see with naked eyes. After the discovery of x-rays and development of electron storage rings specifically built to produce x-rays, our ability to see inside of things have improved vastly to a point where we can do elemental and spatial map of fossils inside opaque amber, or see vibrations of enzymes responsible for their catalytic actions, make picosecond time resolved movies of catalysts, or determine the velocity of sound for minerals under pressure and temperatures close to the center of the earth. In this talk, I will briefly review the art of making the invisible visible, namely x-ray spectroscopy in modern third and fourth generation synchrotron radiation facilities.

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