X-ray Computed Tomography (XCT) for Life Science

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Nondestructive visualization of internal structures of biological systems is greatly important to life science reserach: from function specific imaging at sub-cellular scale resolution to visualization of internal structure of organs at mesoscale resolution. In recent years, tremendous progress has been made in developing x-ray computed tomography (XCT) techniques and system to address this important need. By combining the phase contrast and some of the well known intrinsic and desirable properties of x-rays, e.g., short wavelength for high-resolution imaging and high penetration power for imaging interior structures of large and optically opaque objects, the importance of XCT is being quickly recognized by researchers of life science, as evidenced by several recent large research grants awarded for developing XCT facilities specifically dedicated to biomedical applications. The presentation will review some highlights of recent applications of XCT for life science research and discuss future development opportunities.

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