

X-ray Intensity Fluctuation Spectroscopy

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Intensity fluctuation spectroscopy (IFS) is an ideal way to study the kinetics of fluctuations in a system provided that the scattering intensity is sufficient for the time scales of the system under study. For the last three to four decades, it has been extensively used with light scattering to study a large variety of systems. With the extension of the technique into the x-ray region, one has the advantage of accessing opaque materials, probing much shorter length scales and being less affected by multiple scattering. The prime disadvantage of x-rays over visible light is the much lower intensity levels of x-ray sources. This talk will summarize some of the recent results using the technique and then discuss current limitations with respect to new sources, new optics and new detector developments.