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## **Detectors for neutron scattering and synchrotron radiation**

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Neutrons and X-rays are two of the most important probes in studies of materials and physical phenomena. Throughout the world, major user facilities with beams of ever-increasing intensity of both types of radiation have been constructed or planned in recent years. This has created a need for neutron and X-ray detectors with greater sophistication and higher counting rate capability. A few of these key developments will be discussed here. In neutron scattering, much of the demand is for larger area coverage, which has chiefly been provided by innovative  $^3\text{He}$  detectors or scintillator-based detectors. Some developments with  $^3\text{He}$  detectors operating in ionization mode are especially promising. For synchrotron studies, detectors utilizing conversion in noble gases are now less frequently used, but still have niche applications. There has been a significant increase in the routine use of silicon as an X-ray converter, particularly silicon detectors with high numbers of pixels. Some of these detector developments will be described, with examples from elemental microprobe instruments, X-ray protein crystallography, and extended absorption fine structure studies.

**Author:** SMITH, Graham (BNL)

**Presenter:** SMITH, Graham (BNL)

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