X-ray Excited Optical Luminescence (XEOL) and Time-Resolved XEOL (TRXEOL) of Calcium Oxide

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In this study, we show that colour centres can be produced by irradiating calcium oxide under soft X-ray from a synchrotron radiation source. Using X-ray Excited Optical Luminescence (XEOL) technique, two colour centres, F-centre, and F^+-centre can be identified. These colour centres emit photons at different wavelengths, and photons emitted at those wavelengths subsequently absorb to give fluorescence at higher wavelengths. In addition, by performing Time-Resolved XEOL (TRXEOL), we are able to identify timing and decay characteristics of the colour centres. Work described above was performed on the SGM beeline.

In addition, some representative results from the PGM beamline will also be presented.