The SINS dragon type beamline (http://ssls.nus.edu.sg/facility/beamlines/sins/sins.htm) at SSLS will deliver a tunable monochromatized photon source with high resolution ($\Delta(E)/E$ typically better than 10^{-3}), high intensity (10^{10} to 10^{11} photons/s) and changeable polarization in a wide energy range (50 to 1000 eV). It offers unique opportunities for research in surface science as well as materials-related research in physics, chemistry, biology, materials and environmental sciences.

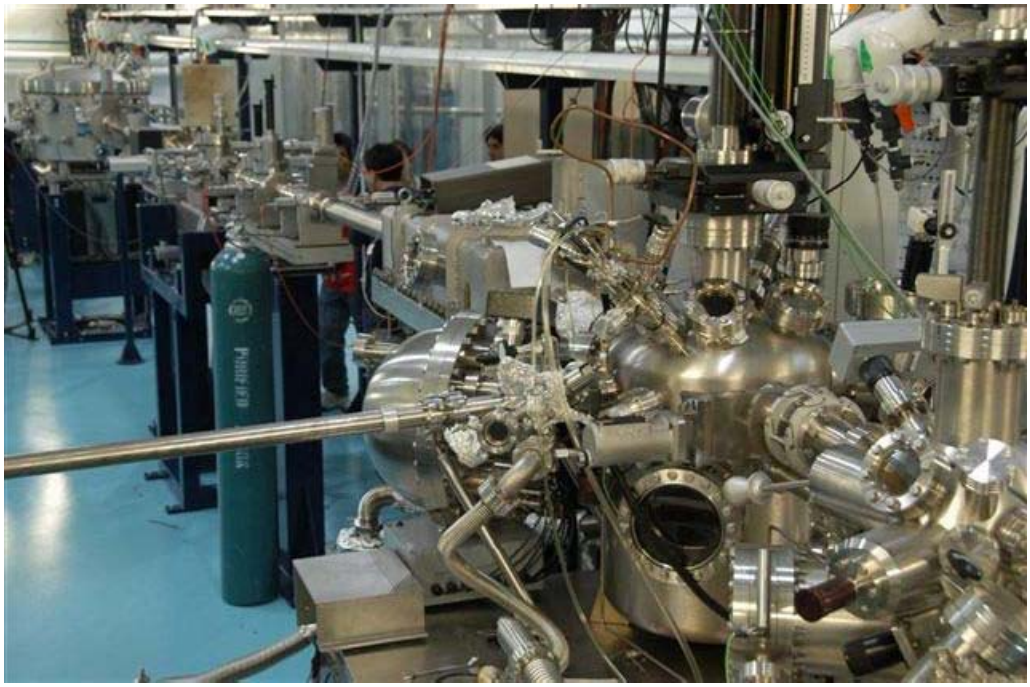


Fig.1 SINS beamline and its endstation.

Experimental station at SINS beamline:

1. Tunable highly monochromatized light source with high flux besides a standard x-ray tube (Mg and Al).
2. VG Scienta - R4000 Analyzer with 2D detector works both for angular-resolved UPS and XPS.
3. 5-axis VG manipulator with Liquid Nitrogen and liquid Helium cooling.
4. LEED system for the structure analysis of the studied sample
5. An ion sputter source to clean the sample
6. AFM/STM for microscopy study with atomic resolution
7. e-beam evaporators for metals and effusion cell evaporators for molecules.
8.Currently is being upgraded with a small chamber with superconducting magnet of over 2 Tesla for XMCD measurement with applied field.

Instrumentation	Description	Availability
PES	Photoemission spectroscopy (mainly XPS;UPS with photon energy above 50 eV including angular-resolved PES for band mapping)	yes
XPD	x-ray photoelectron diffraction	yes
XAS	soft x-ray absorption including NEXAFS/XANES (near-edgeX-ray absorption spectroscopy	yes
XMCD	x-ray magnetic circular dichroism	yes

Figure 2 shows work on high resolution XPS on F4-TCNQ which prove the controllable p-type doping of hydrogenated diamond (001) surface.

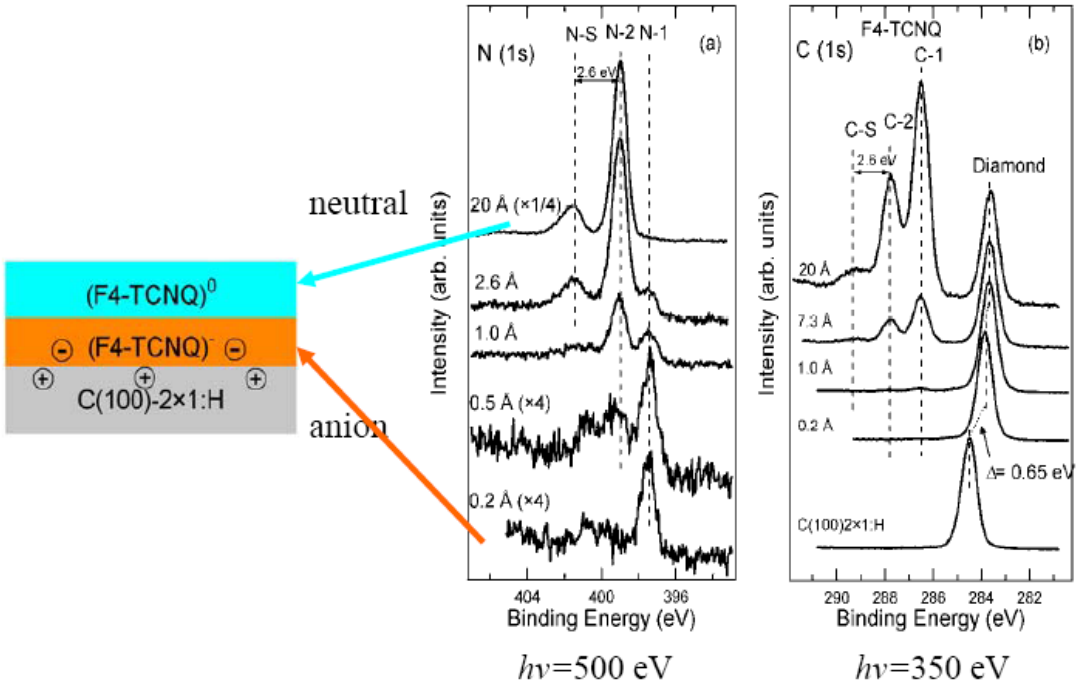
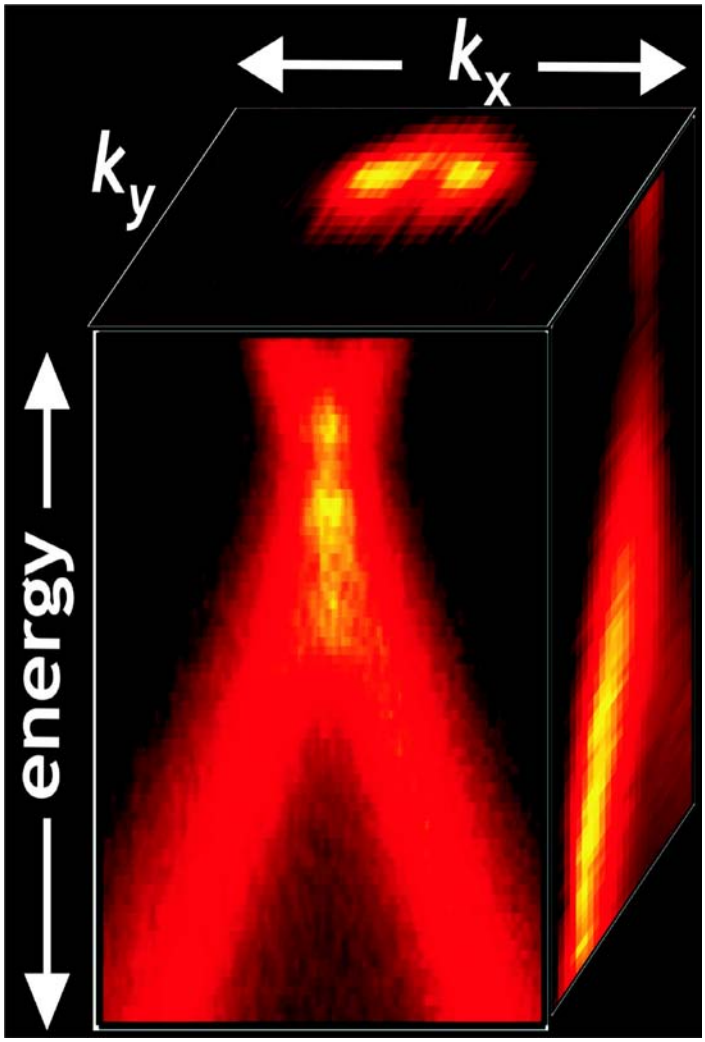


Fig.2 Using a model molecular acceptor (F4-TCNQ), a controllable p-type doping of hydrogenated diamond (001) surface was achieved with a areal hole density of 1.6×10^{13} cm^{-2}, as demonstrated by the XPS results. This will pave the way for better selection of organic molecular acceptors to control the surface conductivity of semiconductors (see *J. AM. CHEM. SOC.*, ***129,*** *8084 (2007)*).



ARPES electronic structure mapping of epitaxial graphene on SiC around *K* point