Results

- XPS data of aTZM sample was taken with MAPP

![XPS data of aTZM sample](image)

- The XPS data obtained using MAPP gives information on the chemical composition of up to 5 nm of the surface of the samples.

![MAPP: Material Analysis and Particle Probe on NSTX-U](image)

- The photoelectric effect is the basic working principle of XPS. X-rays hit the surface and cause electrons to be emitted. The energy distribution of the electrons is determined by the elements and concentrations present in the surface.

- MAPP is located in the lower divertor region.
- The samples are not exposed to air, and the data obtained using MAPP is an accurate representation of the PFCs divertor region.

Summary

- With MAPP, PFC material evolution can be studied in ways not previously possible.
- The data demonstrates that boron is deposited on the surface following boronization with TMB.
- Phenomena such as migration, sputtering and redeposition are most likely being observed.
- The data is representative of the TZM samples that will be put in the lower divertor region.

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