We will present the first results of the commissioning of a nanoindenter installed at the NanoMAX beamline at MAX IV.

NanoMAX is featuring a focused beam size of 50 nm. The combination of in-situ micromechanical testing and nano-focused scanning X-ray diffraction will allow for high-resolution in-situ strain mapping.

Understanding the deformation mechanisms for thin hard coatings is vital for optimizing their use as wear resistant coatings. This new experimental configuration at NanoMAX will be applied to study the relationship between residual stress state, microstructure, and fracture in self-assembled nanolamellar CVD TiAlN thin films.