

Construction of Max-X (Matter in eXtreme conditions X-ray) beamline at Pohang Accelerator Laboratory

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PAL (Pohang Accelerator Laboratory) is the sole synchrotron facility in Korea established in 1995. A major upgrade has been completed in 2012 to 3 GeV and 8 nm rad. capabilities with 20 insertion device sections. PAL currently operates 32 beamlines while a few are left for construction to pursue future impactful sciences. Concerted efforts have been made to deliver the case for high pressure and extreme condition sciences to be implemented at the last remaining wiggler port. The current consortium for the construction of Max-X (Matter in eXtreme conditions X-ray) beamline proposes instrumentations to study complex crustal and mantle minerals using high-resolution XRD and TXM, synthesis of high-density materials and extended solids using laser-heated DAC, phase transition under dynamic compression conditions, and micro structural and spectroscopic analysis involving rare metals. Design and instrumentation of the Max-X beamline will also reflect the need of the international high pressure community to be both complementary and unique. Supports and participation from COMPRES community are appreciated and encouraged.