

2 MV Ion Beam Accelerator

2 MV 이온 빔 가속기

2 MV Accelerator (NEC pelletron 6SDH-2) is used for ion beam analysis, such as RBS (Rutherford Back Scattering)/channeling, ERD (Elastic Recoil Detection) and PIXE (Proton Induced X-ray Emission).

RBS is used for quantitative depth profiling of sample with a non-destructive manner. Channeling provides crystallinity and damage information of highly textured thin film. ERD is useful technique for the light element depth profiling.

PIXE (Proton Induced X-ray Emission) is the best for the analysis of thin film samples, surface layers and samples with limited amounts of materials.



Location Accelerator building 1005 Tel.02-958-5995

RBS/ERD Specifications

- Range of elements : H ~ Bi
- Detection limits : 1 ~ 10 at % (low Z)
1 ~ 100 ppm (high Z)
- Depth resolution : 10 nm (RBS)
- Maximum depth : 2 μm
- B, C, N, O resonance scattering

PIXE Specifications

- Range of elements : Mg ~ Bi
- Detection limits : 0.1 ~ 10 ppm (thin film)
1 ~ 100 ppm (bulk)
- Accuracy : 2 ~ 10 % with standards
- Maximum depth : 10 μm
- Si(Li) detector : resolution 155 eV for 5.9 keV

RBS & PIXE spectrum of spin valve magnetic thin film

