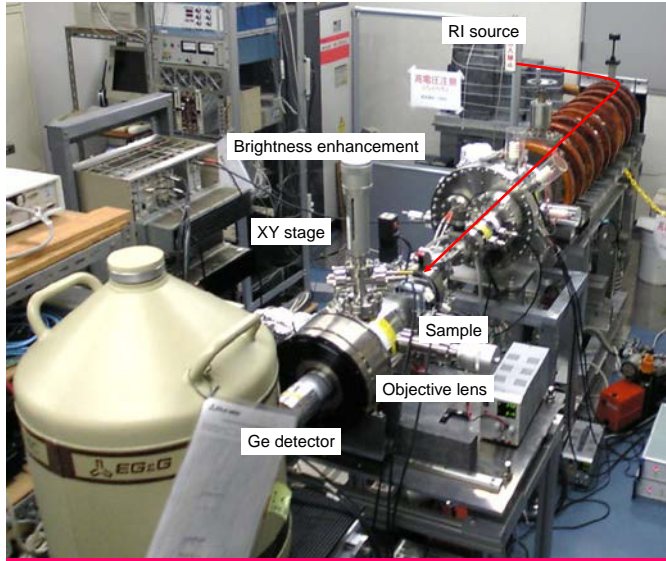


陽電子マイクロプローブによる3種類の陽電子顕微鏡の開発

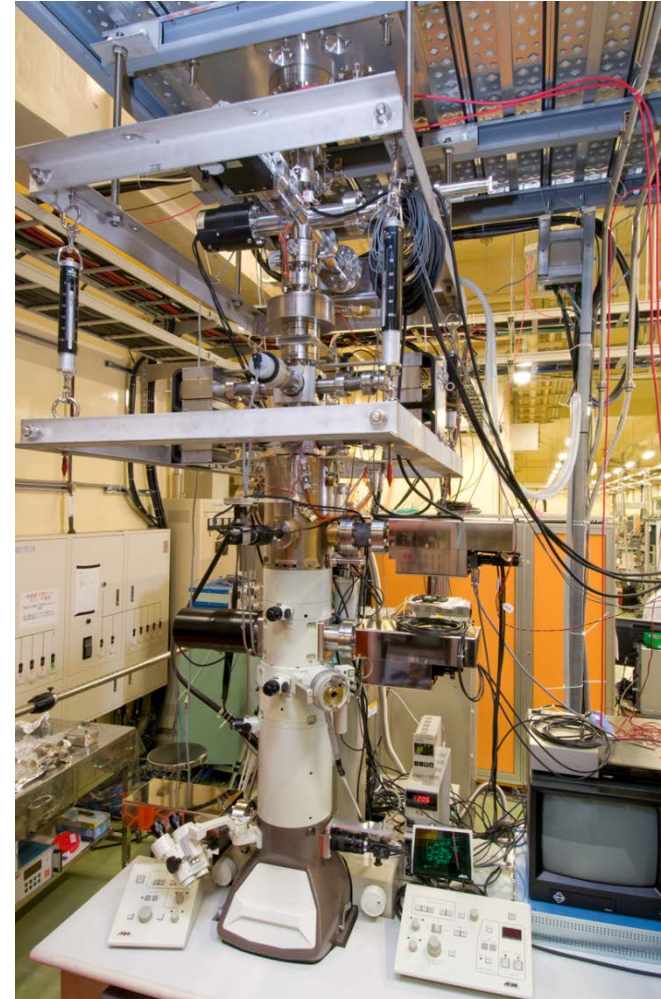
Positron probe microanalyzer



RI-PPMA
@千葉大

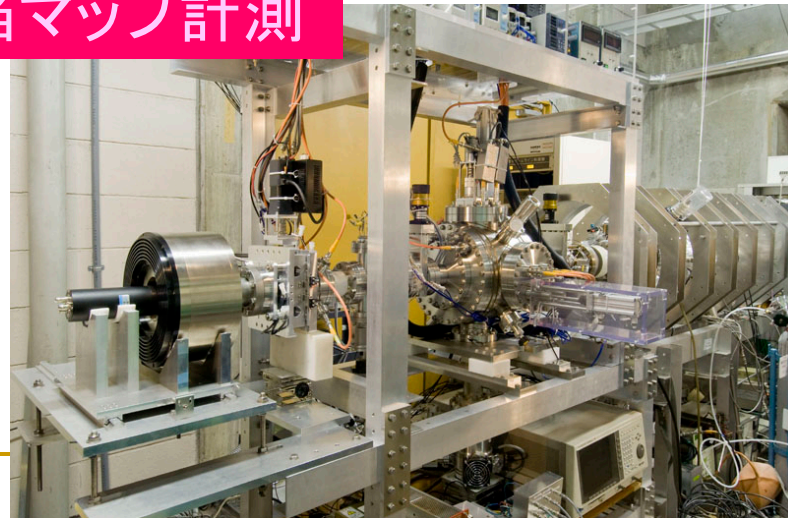
Transmission positron microscope

Linac-TPM
@KEK



空孔型欠陥マップ計測

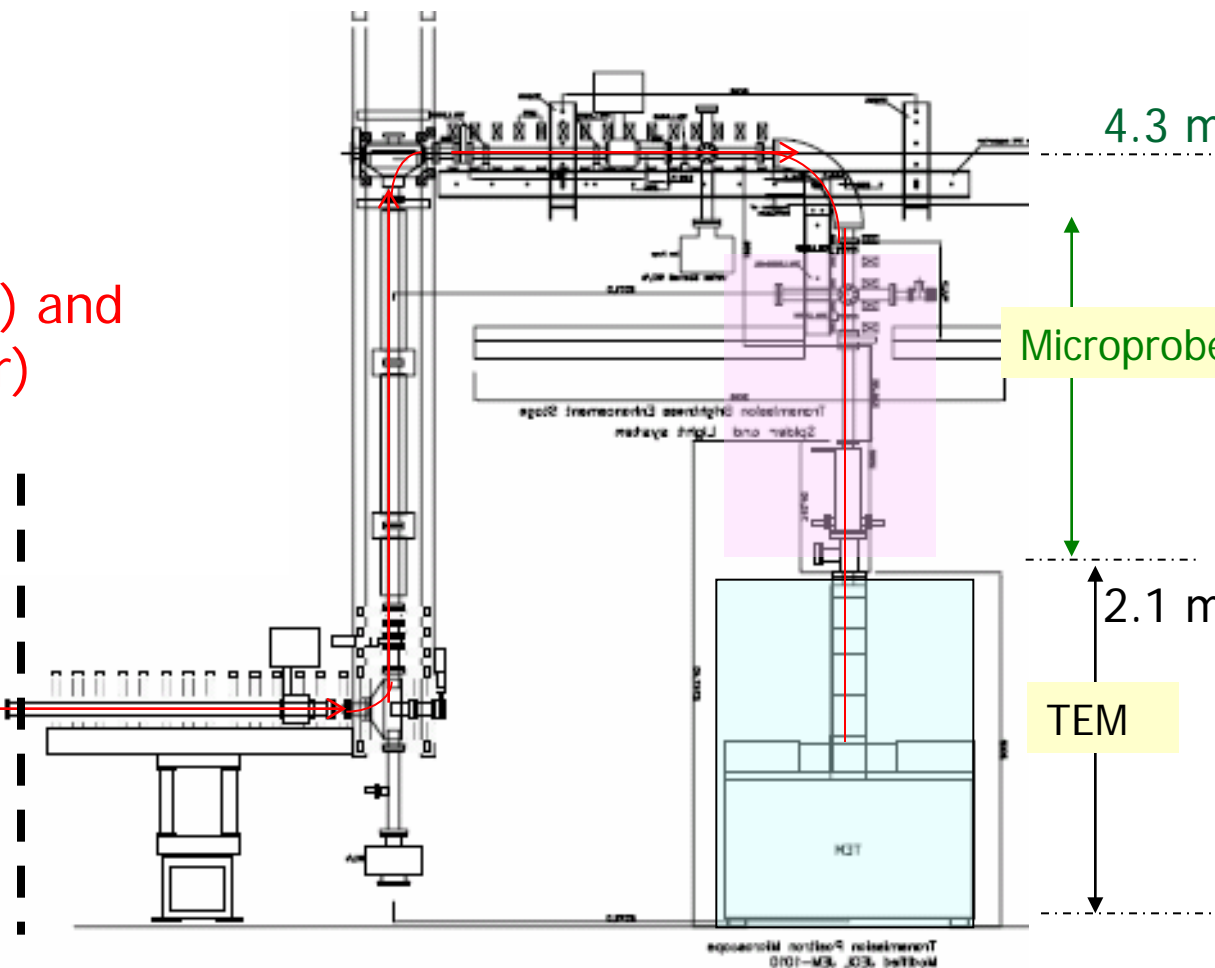
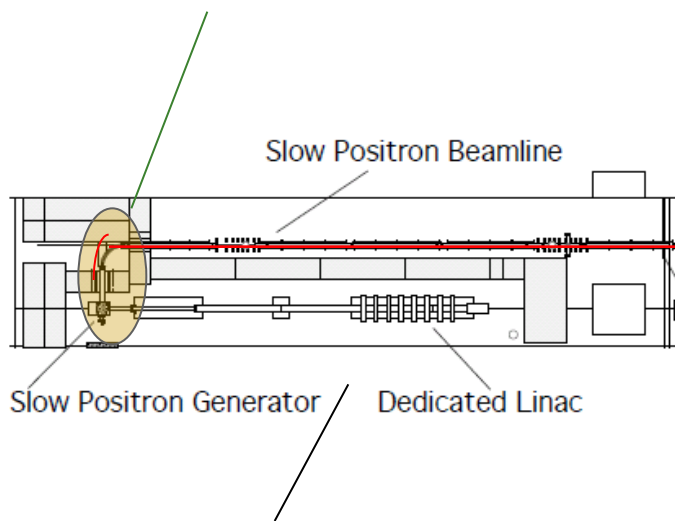
Linac-PPMA
@産総研



TEMとの差異

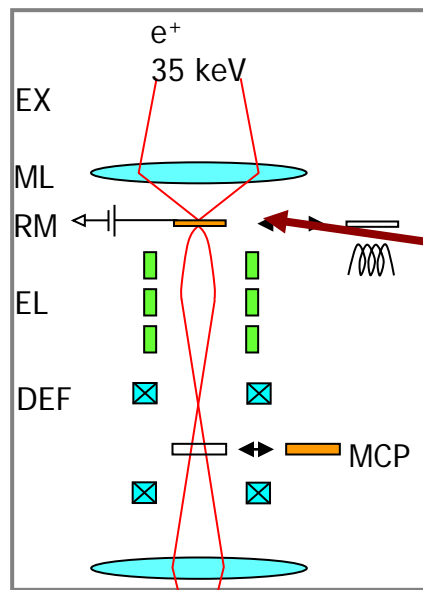
KEK-TPM 用陽電子ビームライン

Ta target (positron source) and several W foils (moderator) floated at 35 kV



Linac : 44 MeV, 0.2 GeV·mA, 50 Hz

30 kV TPMのための陽電子光学系



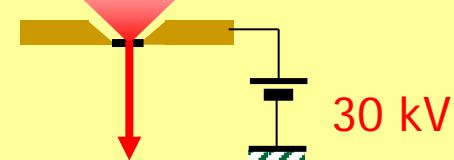
Microbeam forming section

Remoderator

Ni(100) 150 nm
Work function

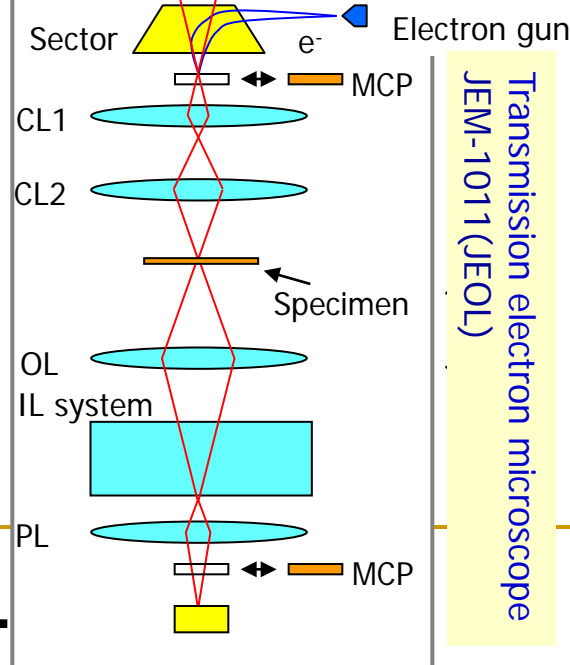
-1.0 eV

35 keV



30 kV

30 keV



Transmission electron microscope
JEM-1011 (JEOL)

4.3 m

2.1 m

TEM
(JEOL)

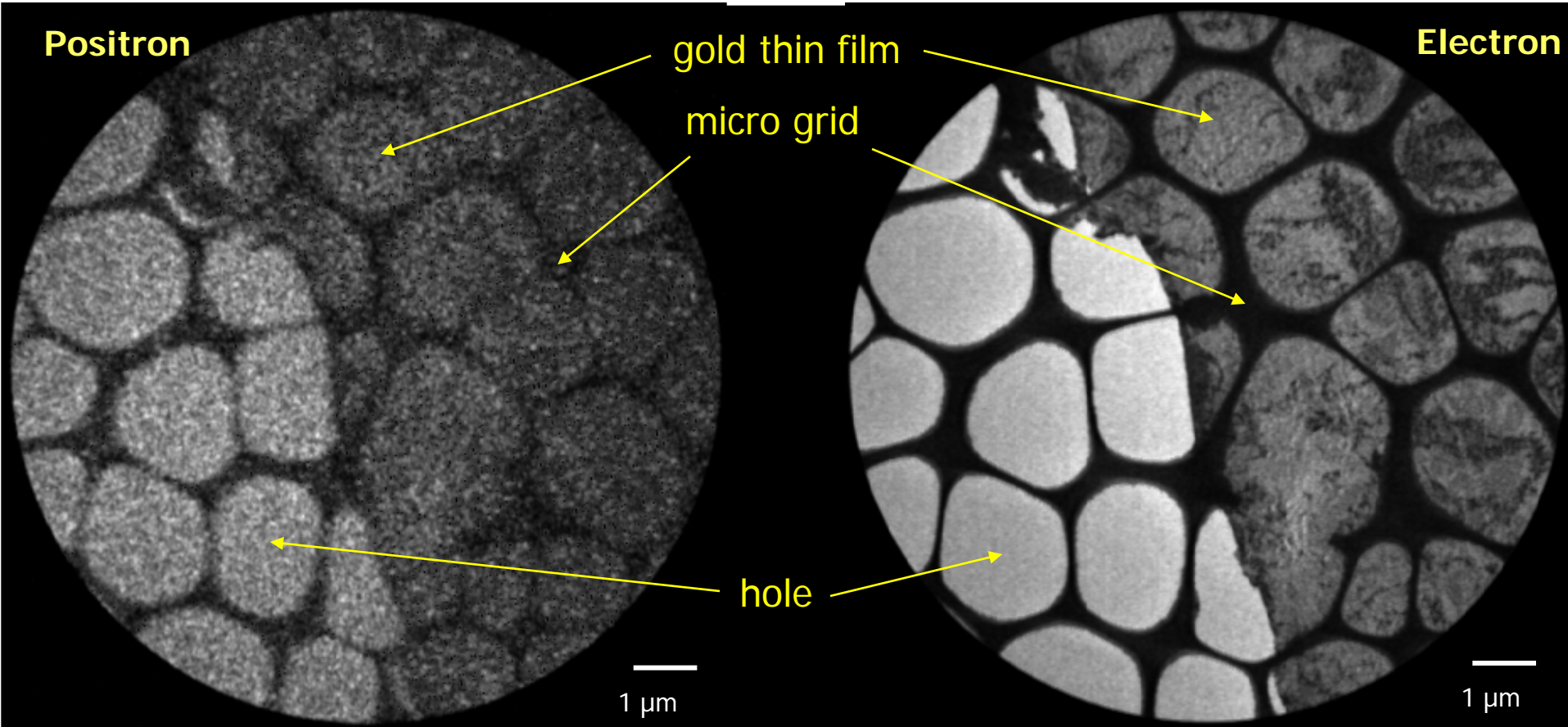
TPM & TEM image of Au(100) foil

Resolution : 50 nm

X10,000

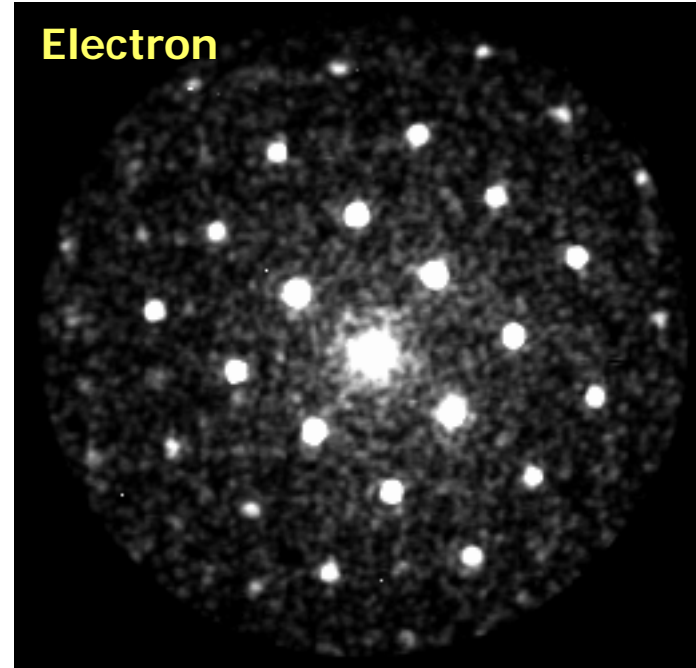
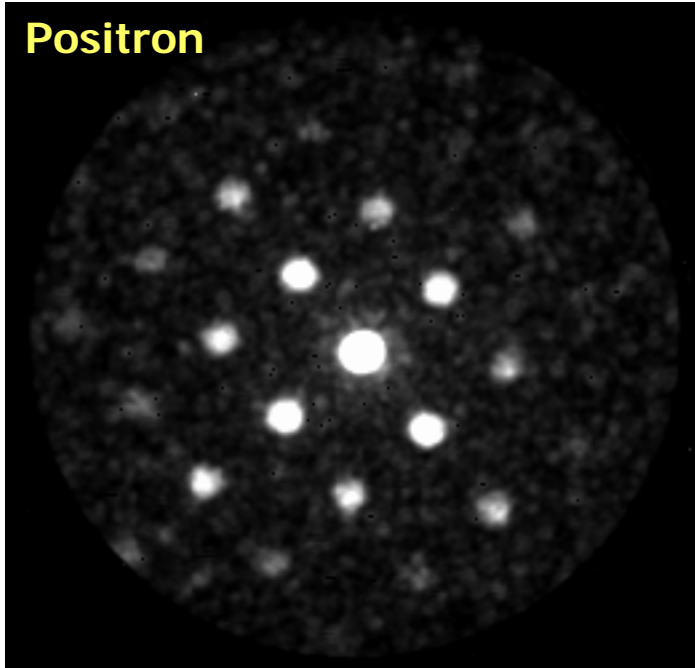
Positron

Electron



16 hours

e^+ & e^- diffraction pattern of Au(100) foil

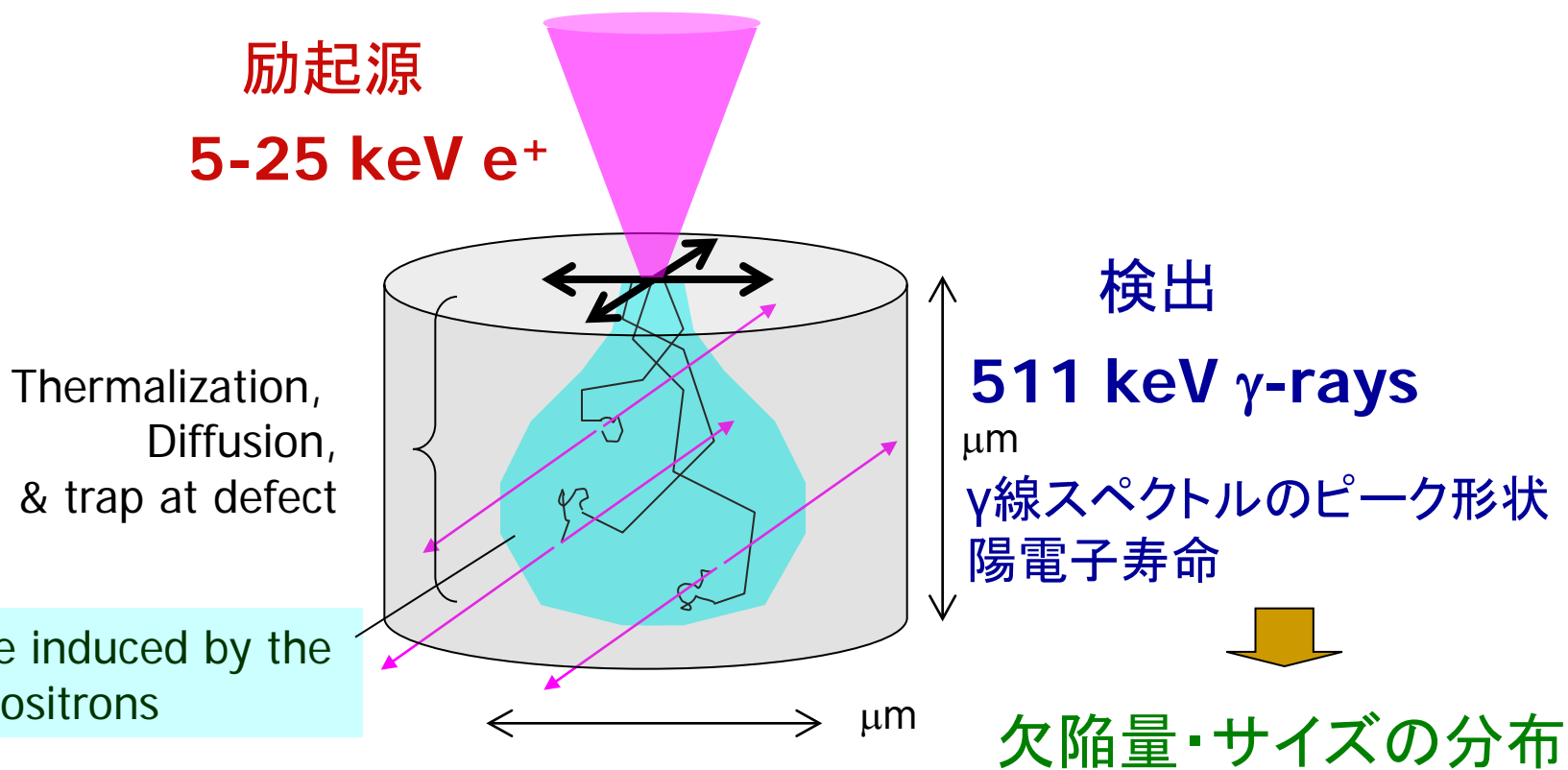


15 hr

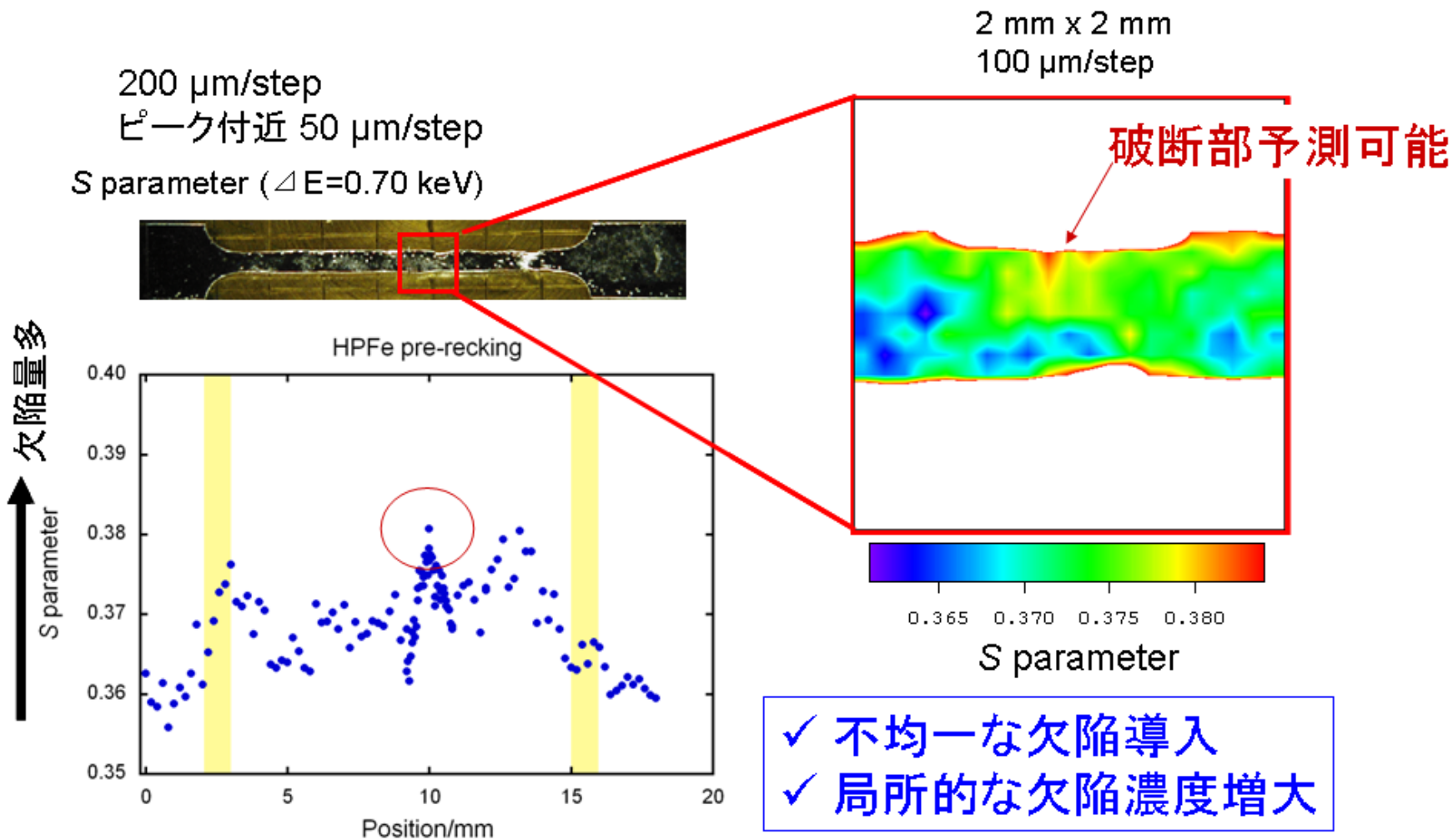
We can succeed in 10,000 times TPM image and the diffraction pattern, comparable with TEM.

3. Positron probe microanalyzer (PPMA)

μm の空間分解能での欠陥マップ計測

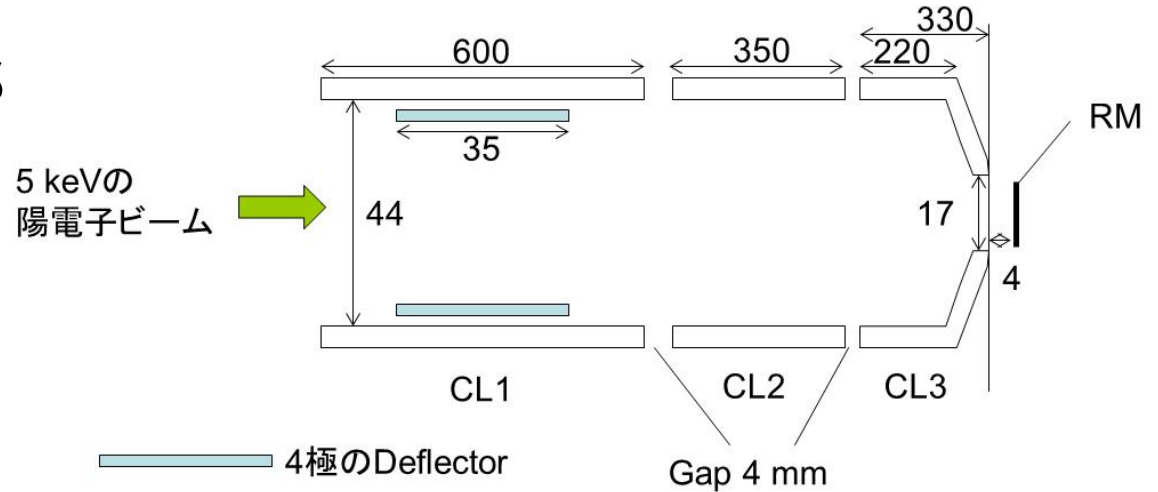


23% ひずみ導入純鉄の S マップ



提案する二段輝度増強LEPD光学系

● 二段目の輝度増強部



● 輝度増強後から入射ビーム形成の静電光学系

