

Equipment

TEM	
JEM-2010FEF JEM-2010EF	Equipped with an Ω -type energy filter
Recording media	
Imaging Plate	Pixel size: 25 μm , Dynamic range: 14 bits

Observed conditions

Specimen	Si	MgO
Orientation	[100]	[110]
Dif. spot	000, 022, 040	000, 111, 002, 220, 113, 222, 004
Accel. volt.	200 kV	
Energy filter	Zero-loss filter (± 5 eV), unfilter	
Mag.	$\geq 200,000$	

Computer simulation

Dynamical calculation	Multi-slice method
Atomic scattering factor	Si, Mg, O DT
	Mg ²⁺ DT, Peng
	O ²⁻ TMI, Peng
Temperature factor	Mg, O ZORS

DT: Doyle and Turner, *Acta Cryst.* **A24** (1968) 390

TMI: Tanji, Masaoka and Ito, *J. Elec. Microsc.* **38** (1989) 409

Peng: Peng, *Acta Cryst.* **A54** (1998) 481

ZORS: Zuo, O'Keeffe, Rez and Spence, *Phys. Rev. Lett.* **78** (1997) 4777