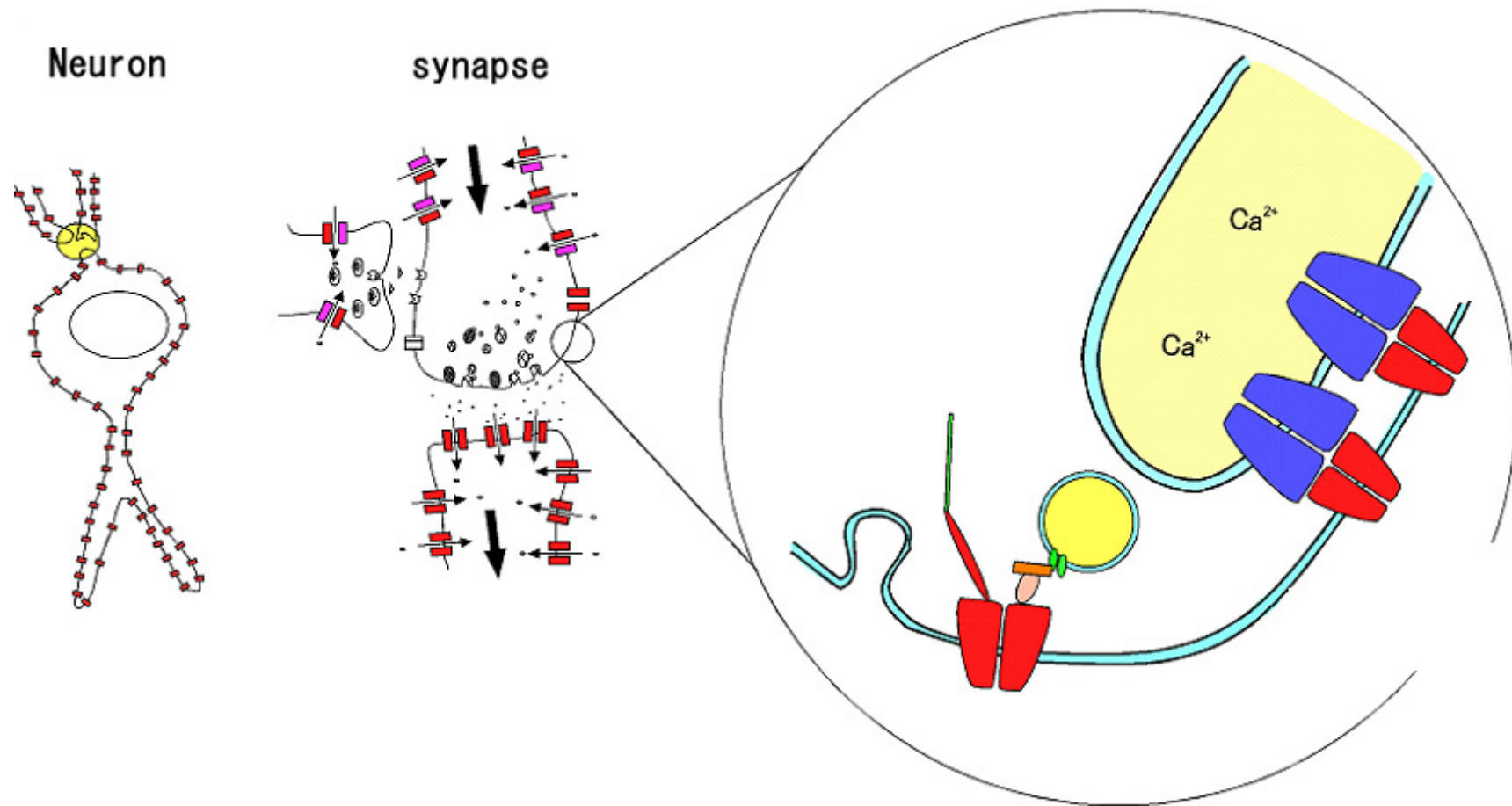


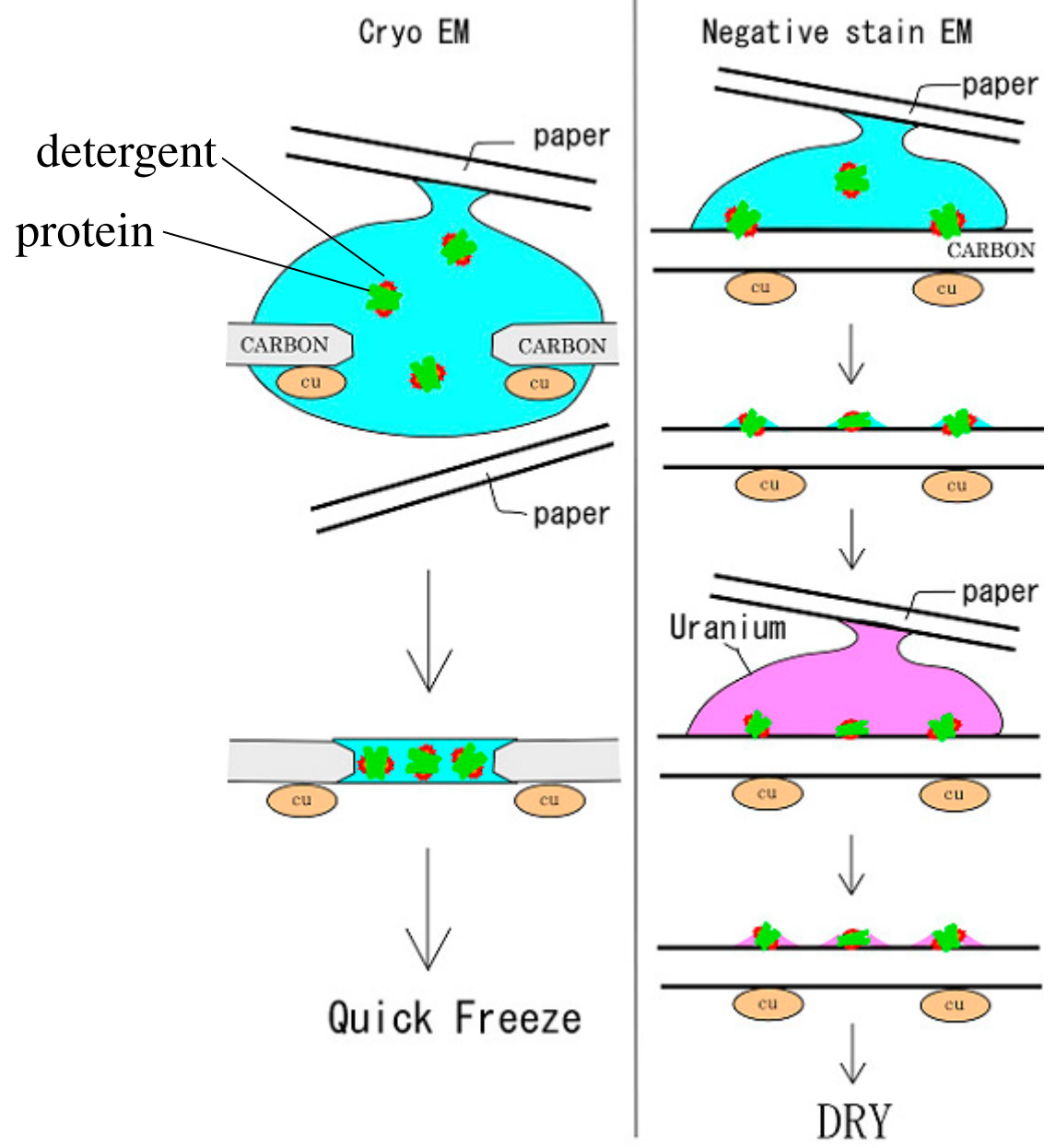
PF研究会 2010 高エネ研

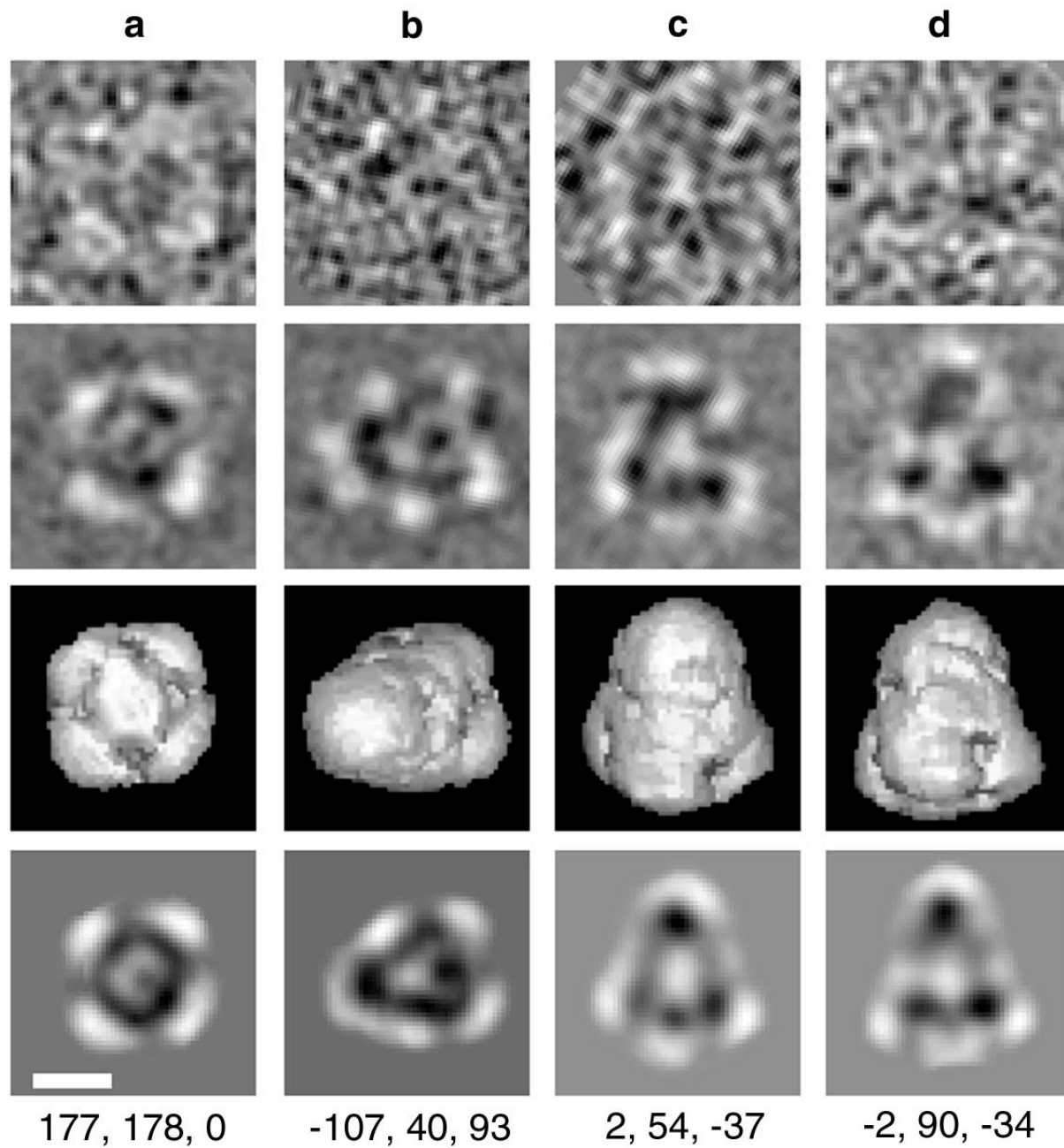
電顕単粒子解析とX線結晶解析の
融合研究の展望

三尾和弘、小椋俊彦、丸山雄介、
西山英俊、須賀三雄、佐藤主税

Observation of super molecular complexes

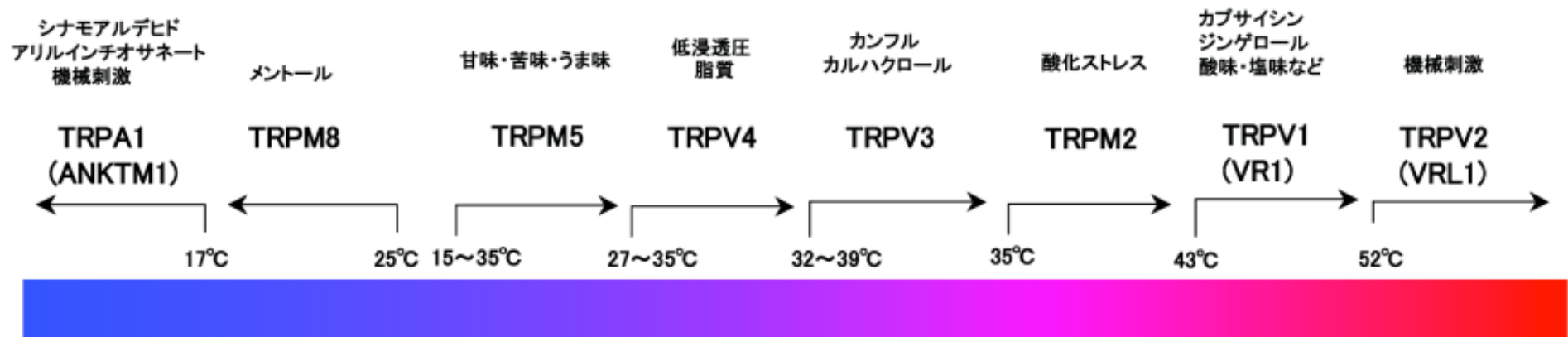


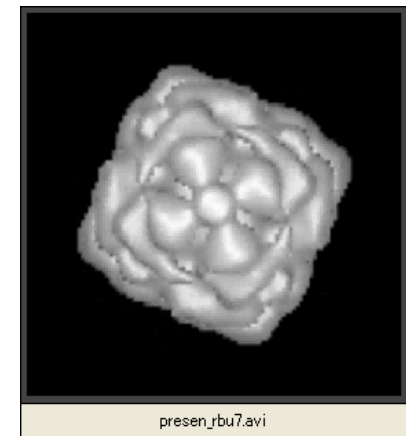
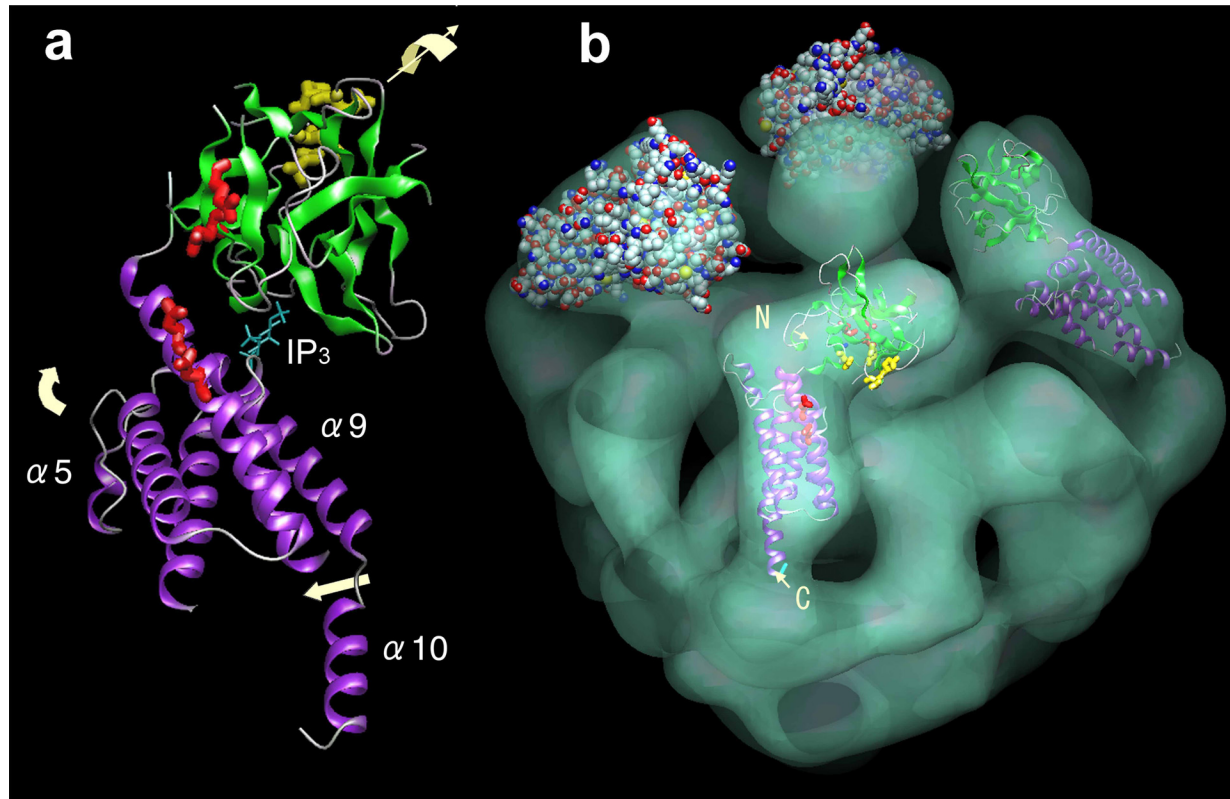




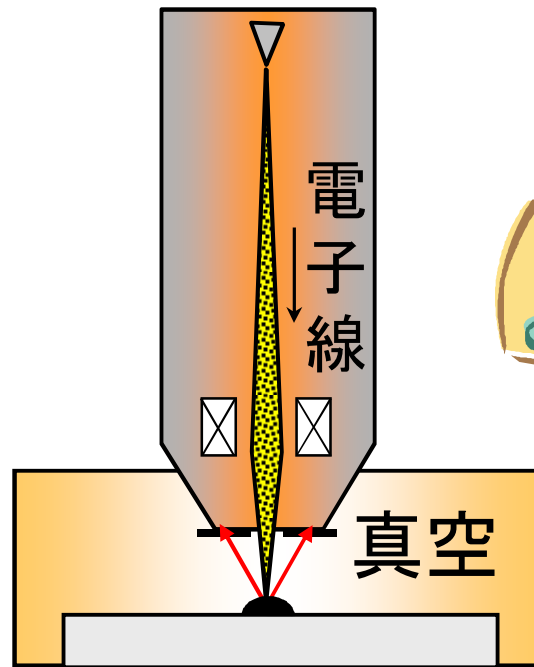
Sato et al.
Nature 409,
 1047-1051
 (2001)

TRPチャンネルと温度感受性

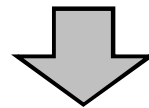




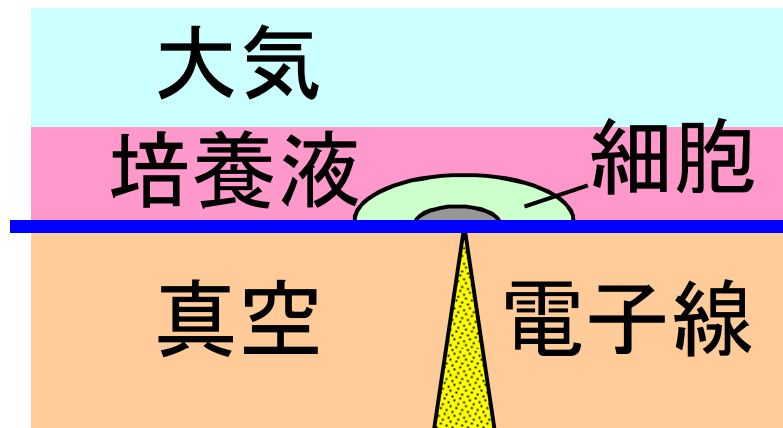
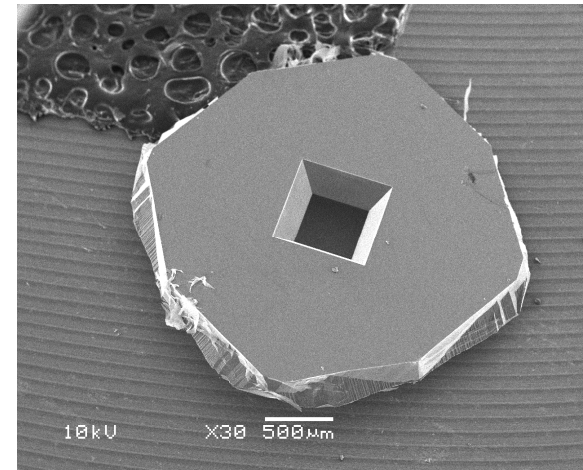
着眼点：電子顕微鏡と半導体技術の融合



真空と大気を
超薄膜で隔離



半導体技術

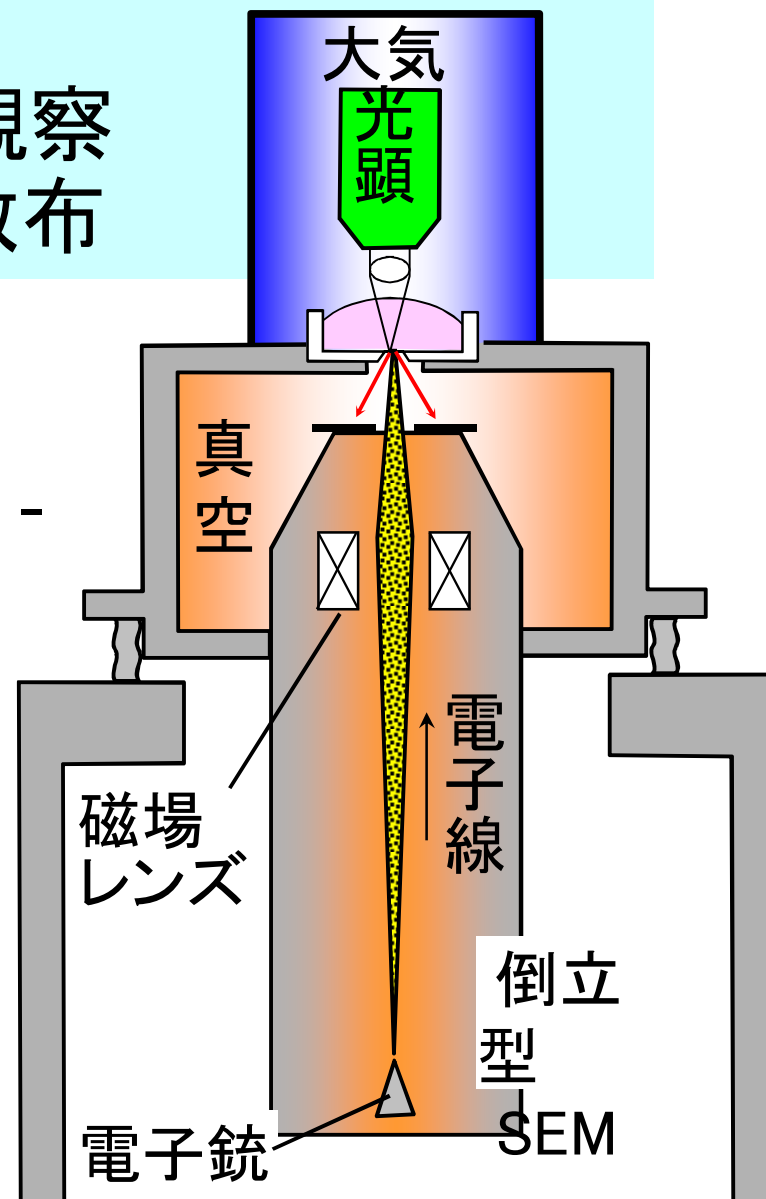


超薄膜(窒化シリコンSiN、10~100nm厚)

・気圧耐性

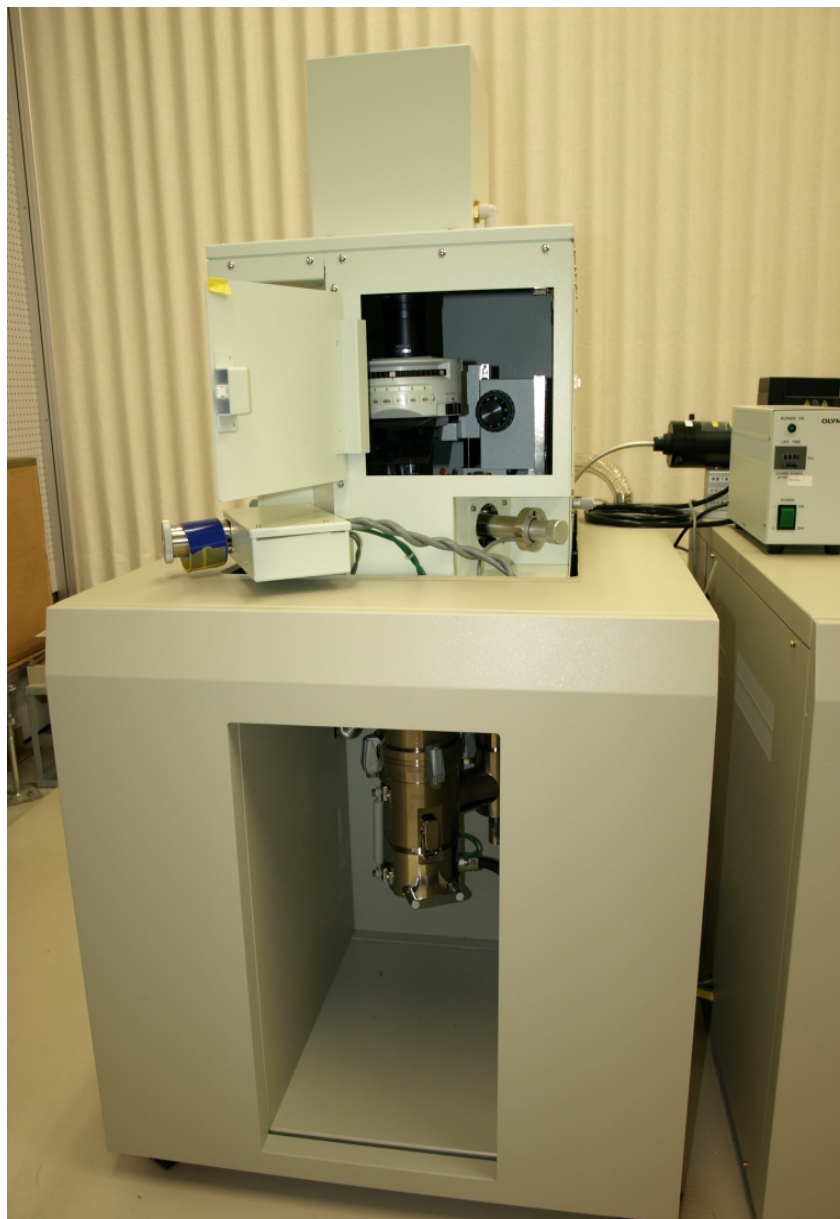
- SiN薄膜窓で真空を隔離
- 光学顕微鏡で同一視野観察
- 開放試料室なので薬の散布

- 日本オリジナルの顕微鏡 -



倒立型ASEM開発1号機

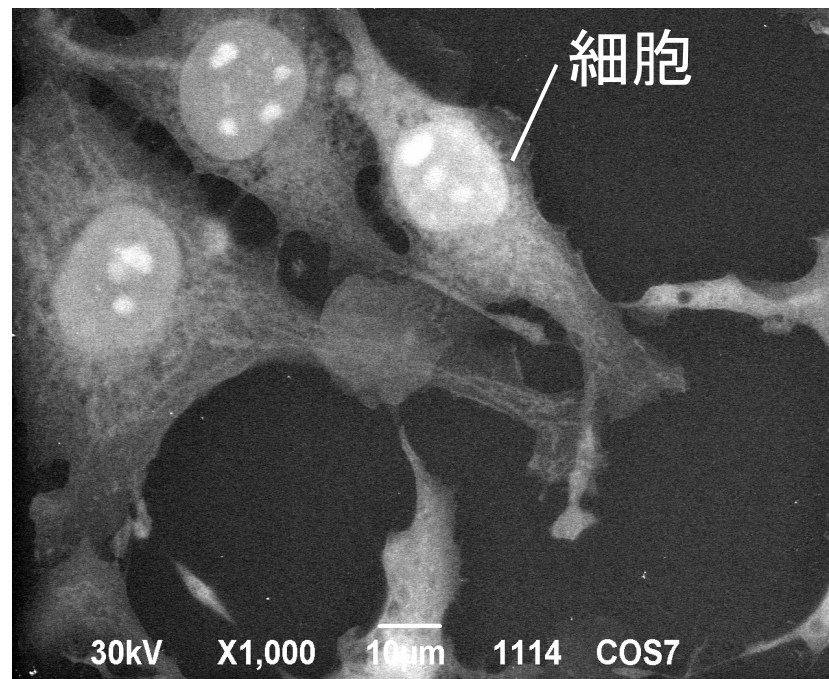
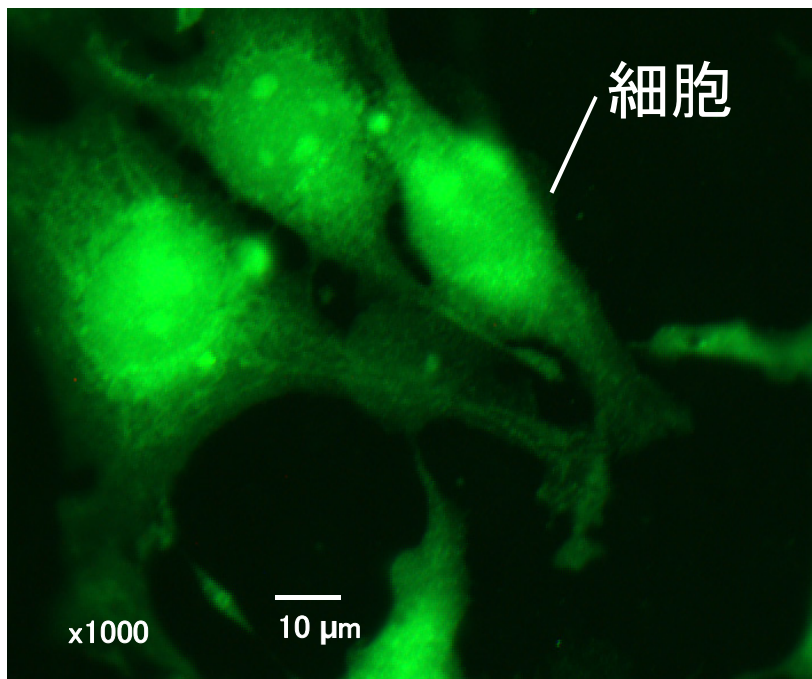
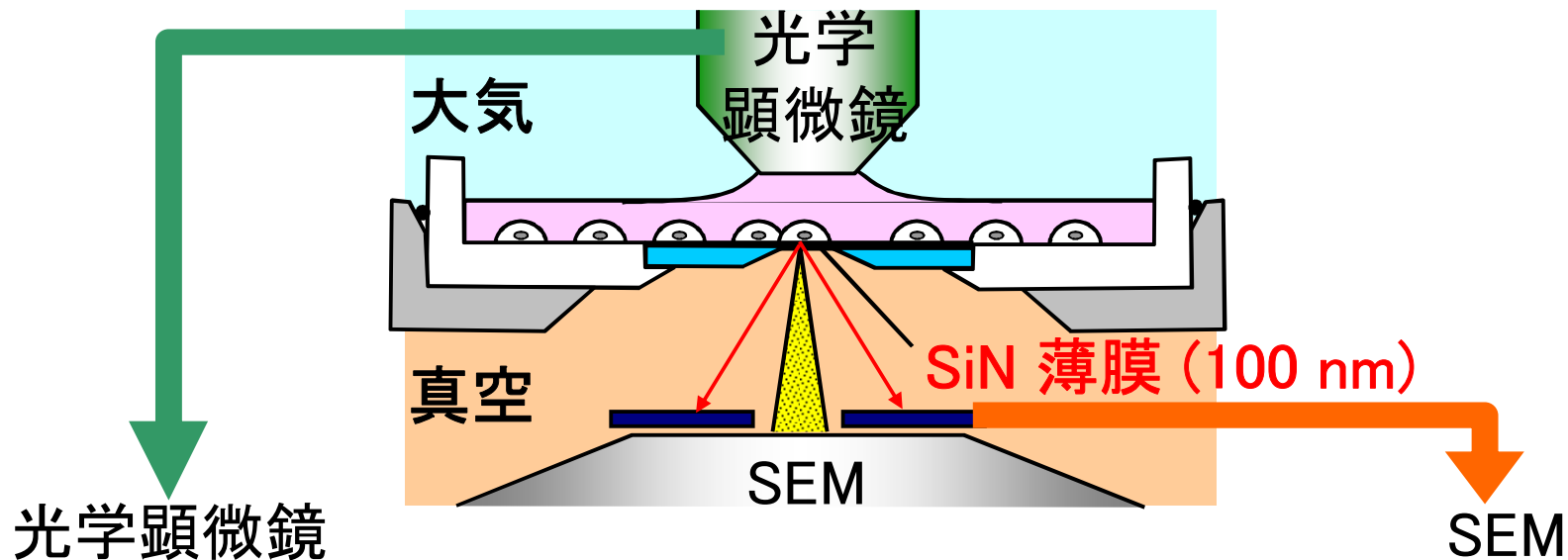
(2007.11)



ClairScope



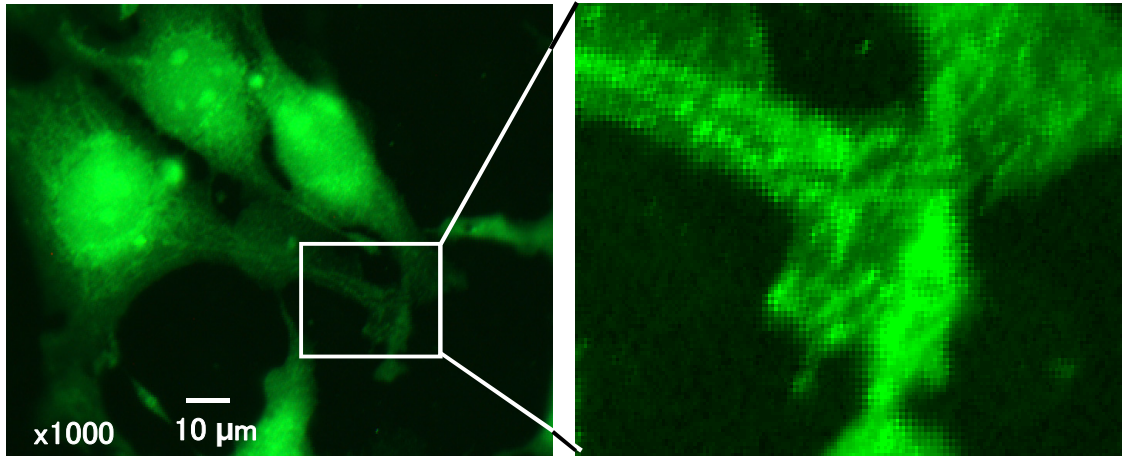
実験例：SEMと光学顕微鏡の同視野観察



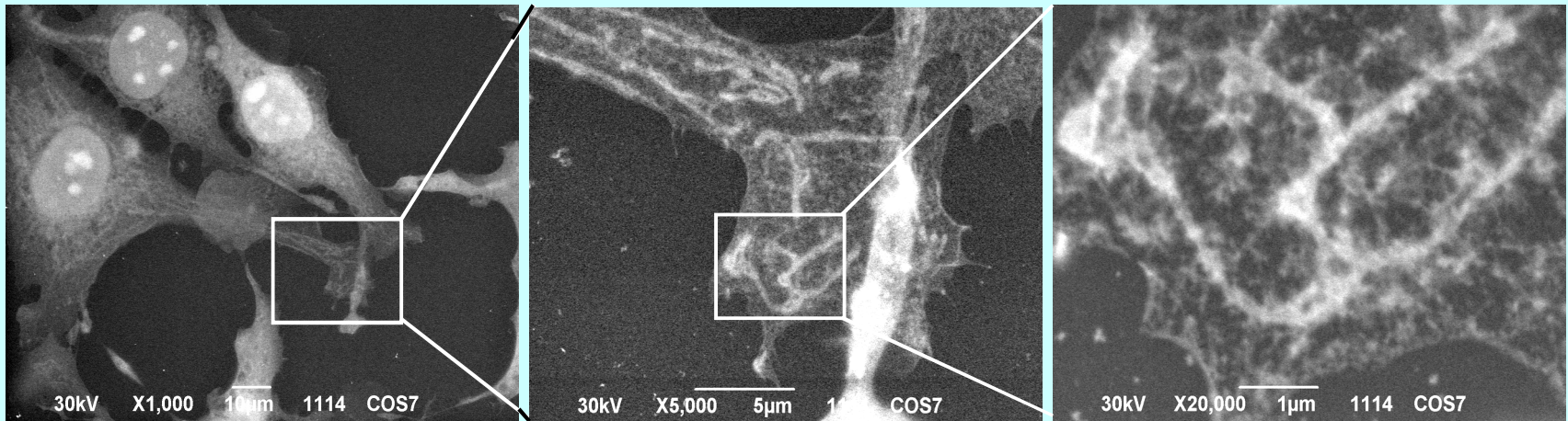
— 小胞体(発生・免疫・神経可塑性に重要)の詳細構造—

高分解能化を実現

光学顕微鏡像



液中SEM像



x20,000撮影に成功(光学顕微鏡はx2,000が限界)