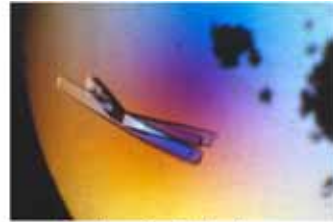
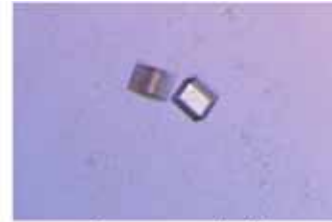




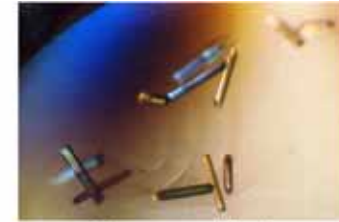
Sheep Hemoglobin



Carbonic Anhydrase



Concanavalin B



Concanavalin A



Goat Hemoglobin



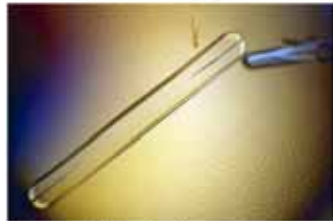
Bence Jones Protein KWR



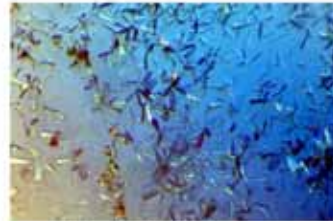
Fungal Lipase



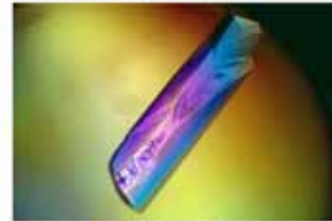
Lysozyme



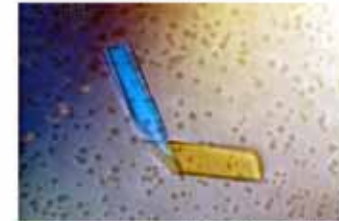
$\alpha$  Lactalbumin



Bacterial Xylanase



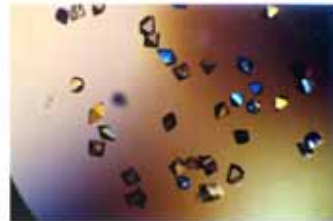
RNase A



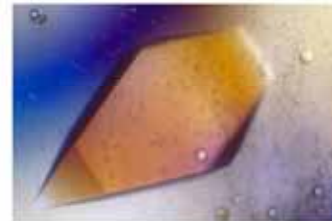
Bence Jones Protein MLE



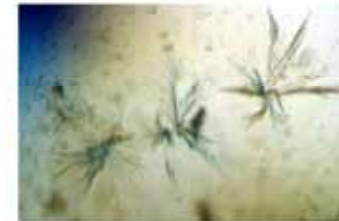
SPMV



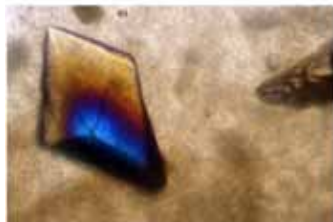
Proteinase K



Porcine Trypsin



$\beta$  Lactoglobulin



Bacterial  $\alpha$ -amylase



TYMV

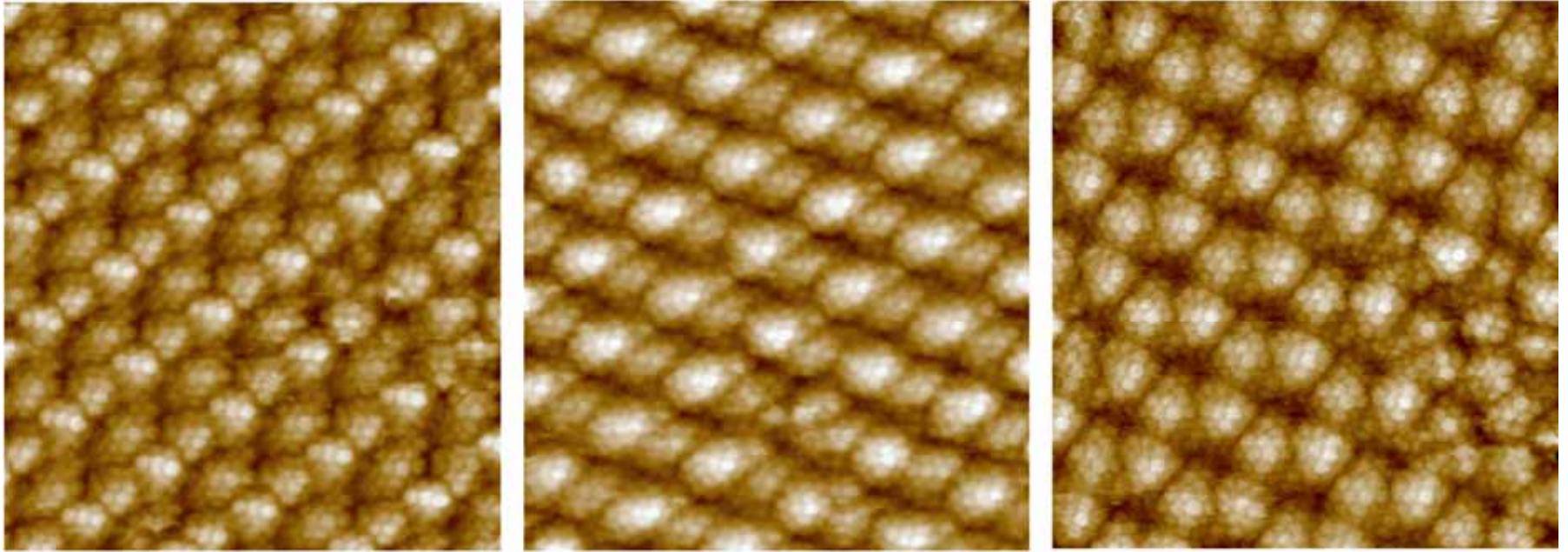


Elastase



Alcohol Dehydrogenase

e  
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I

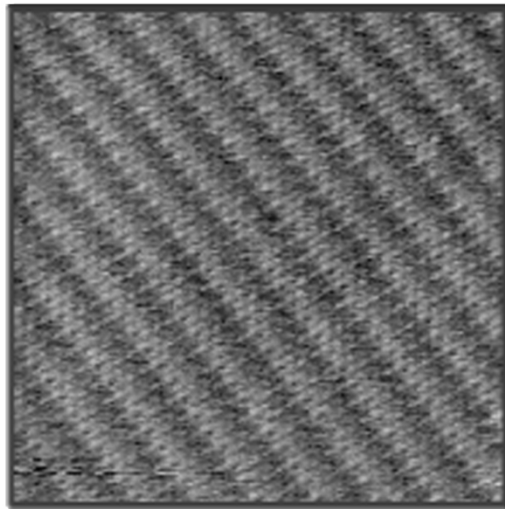


a

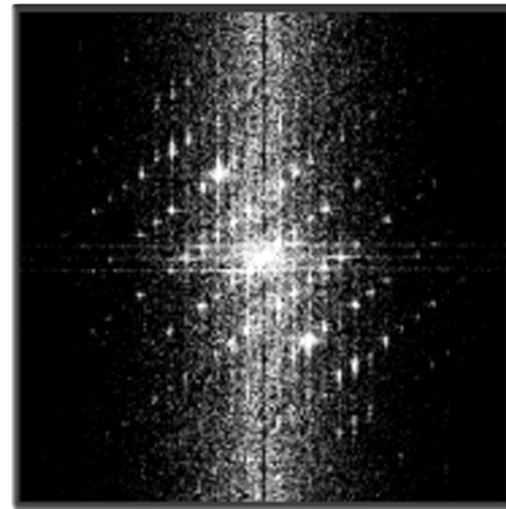
b

c

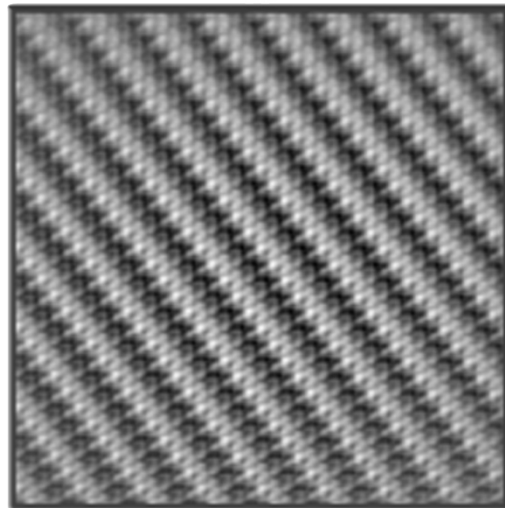
Evolving surface of a crystal of Turnip Yellow  
Mosaic Virus (TYMV)



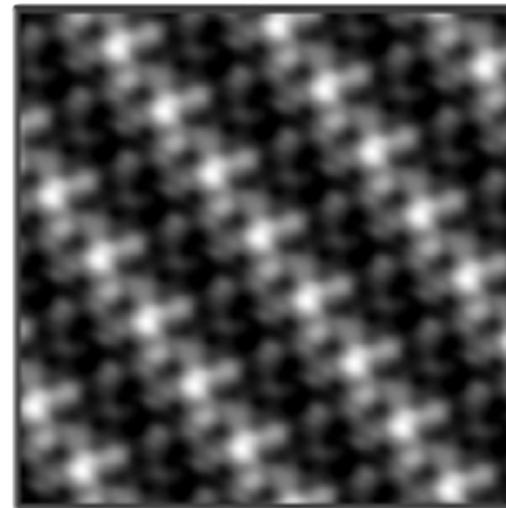
**a**



**b**

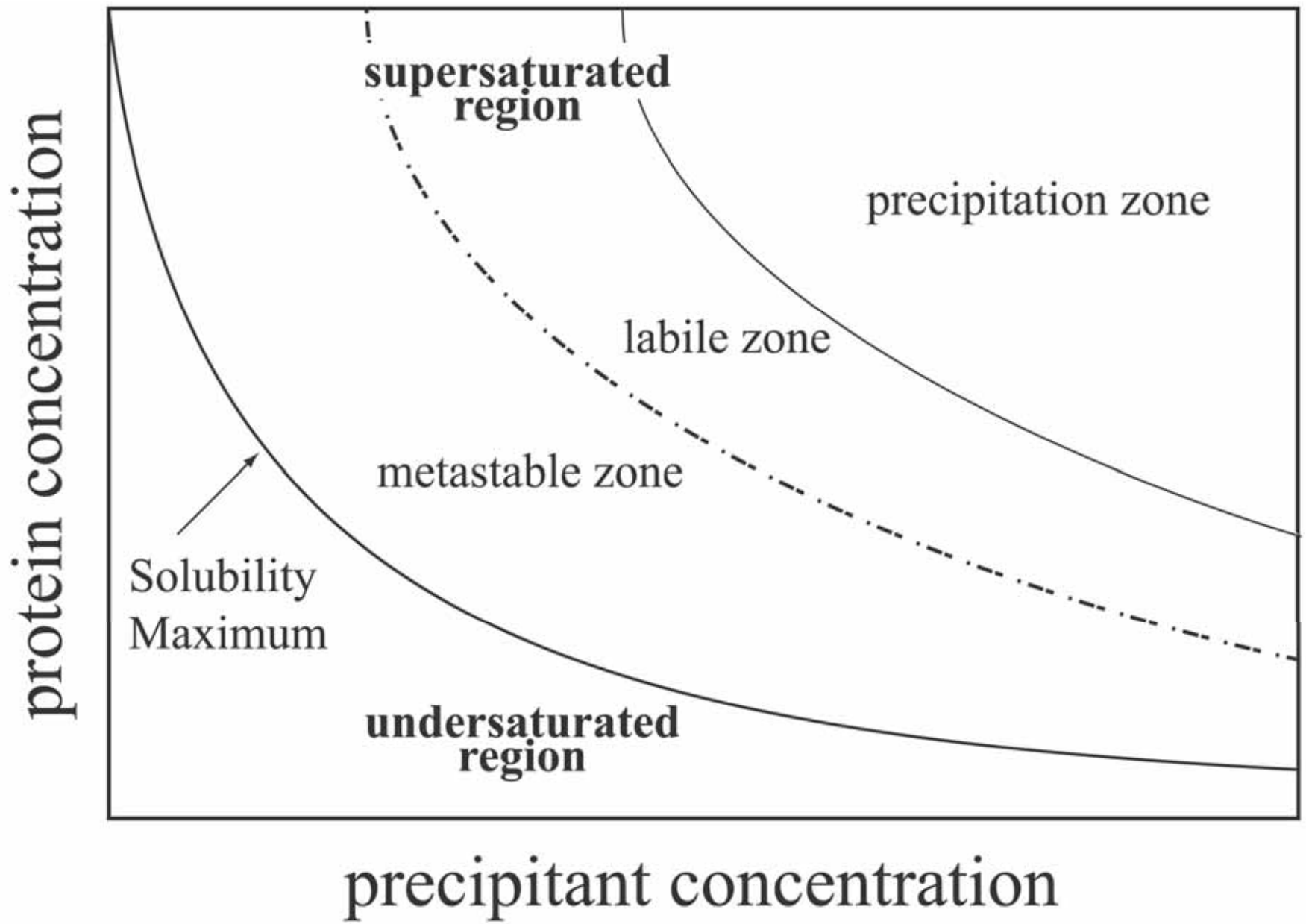


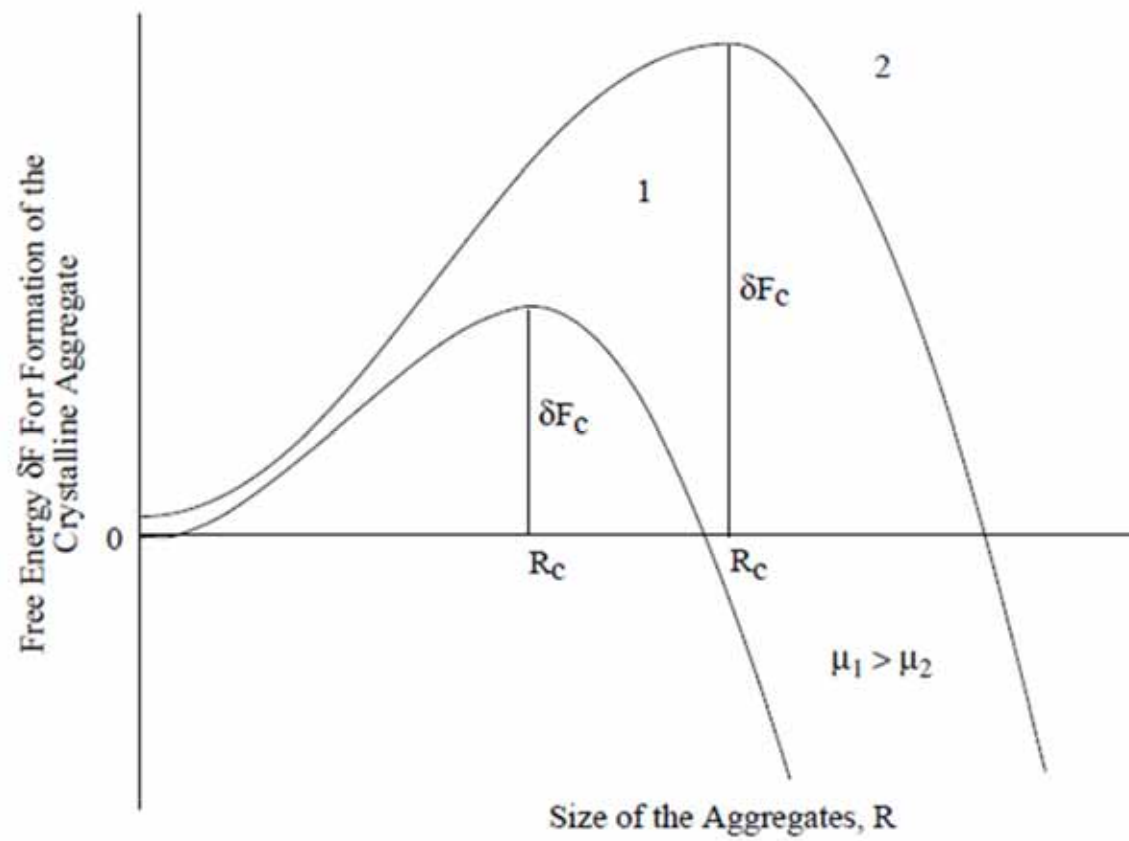
**c**



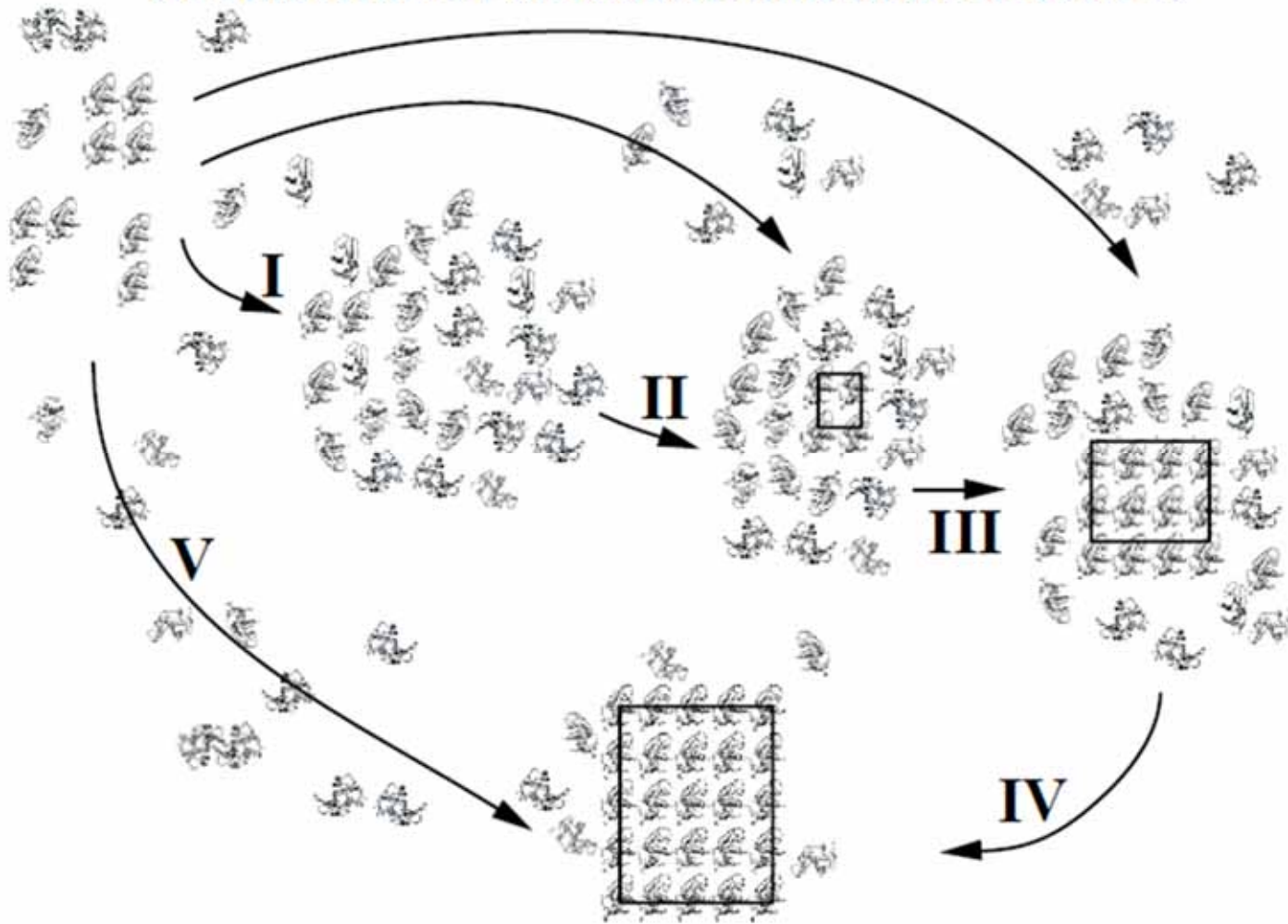
**d**

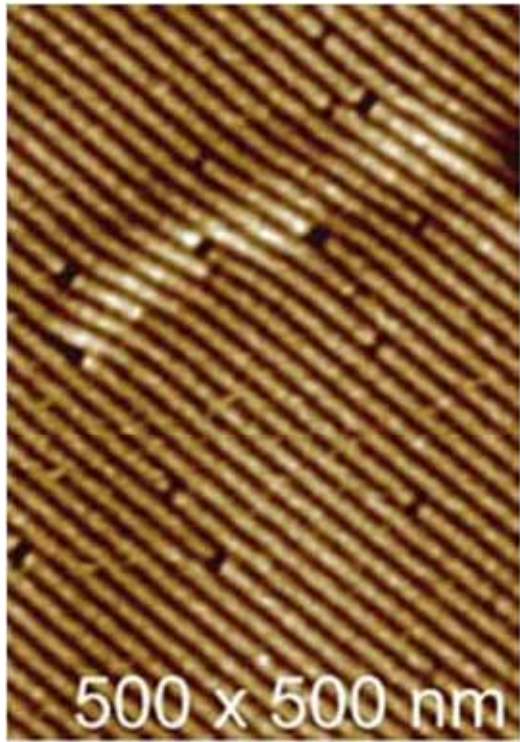
Fourier filtering of an AFM image of the surface  
of a bacterial lipase crystal



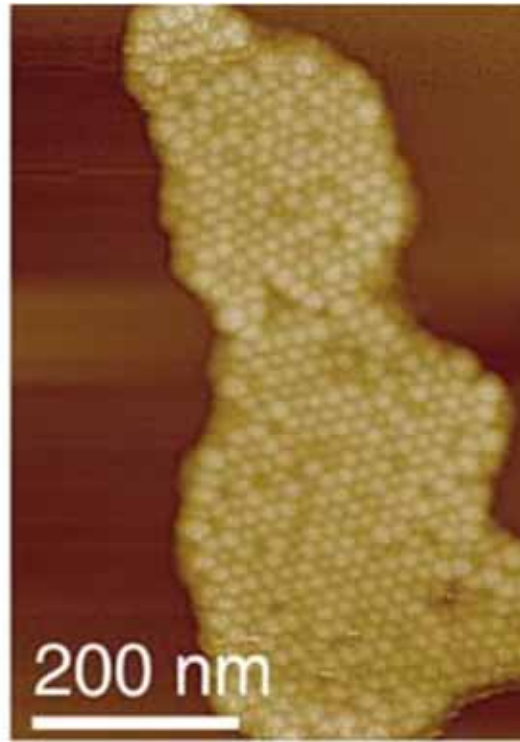


# NUCLEATION OF MACROMOLECULAR CRYSTALS

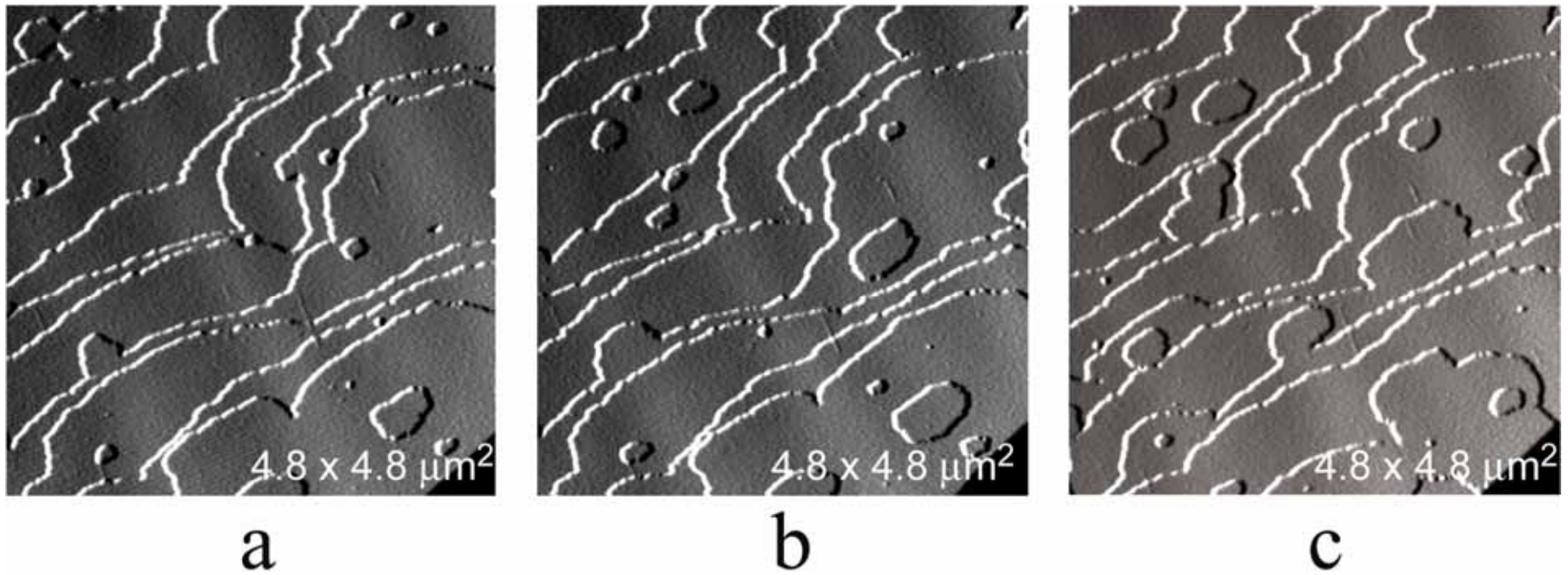




**a**

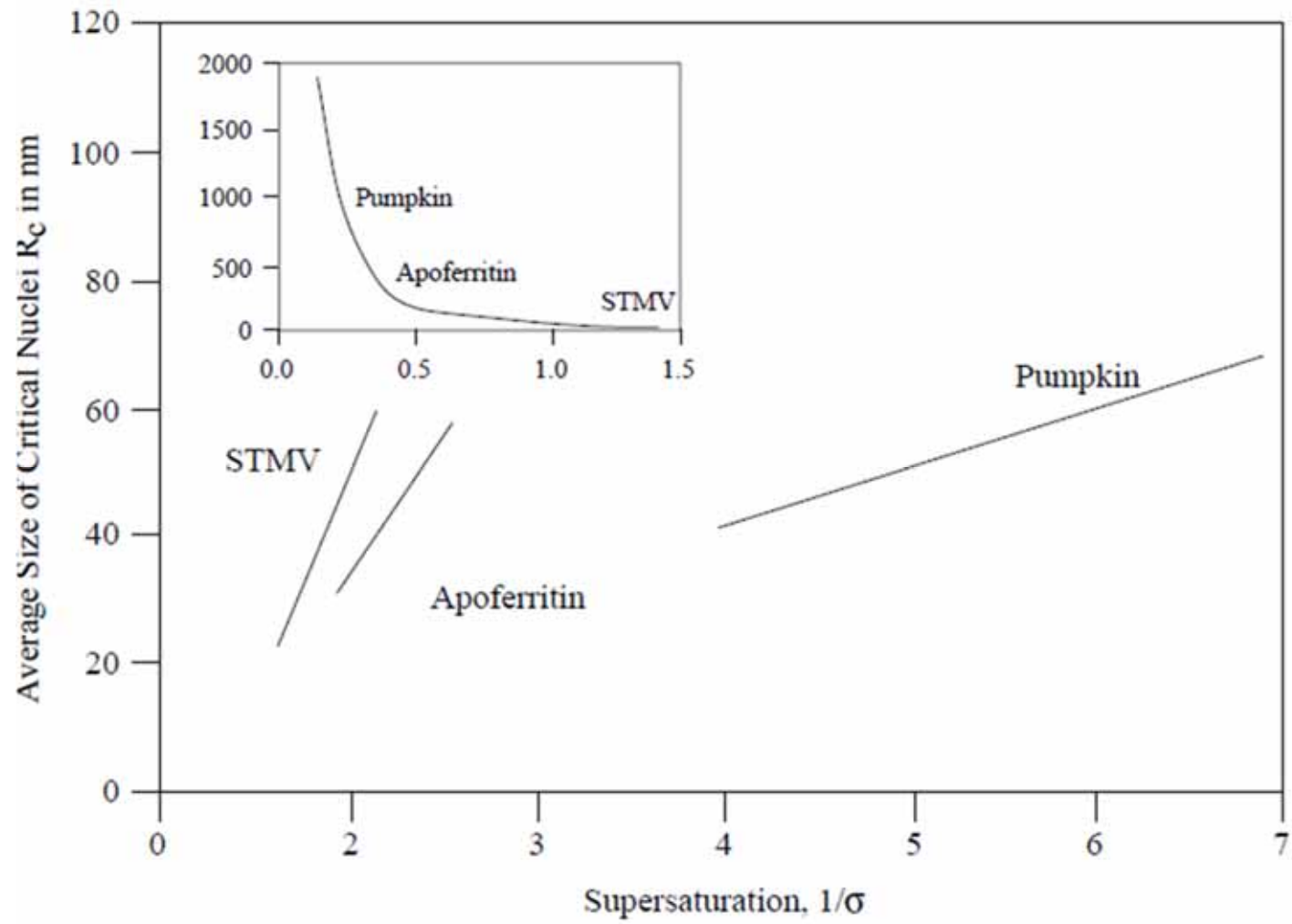


**b**

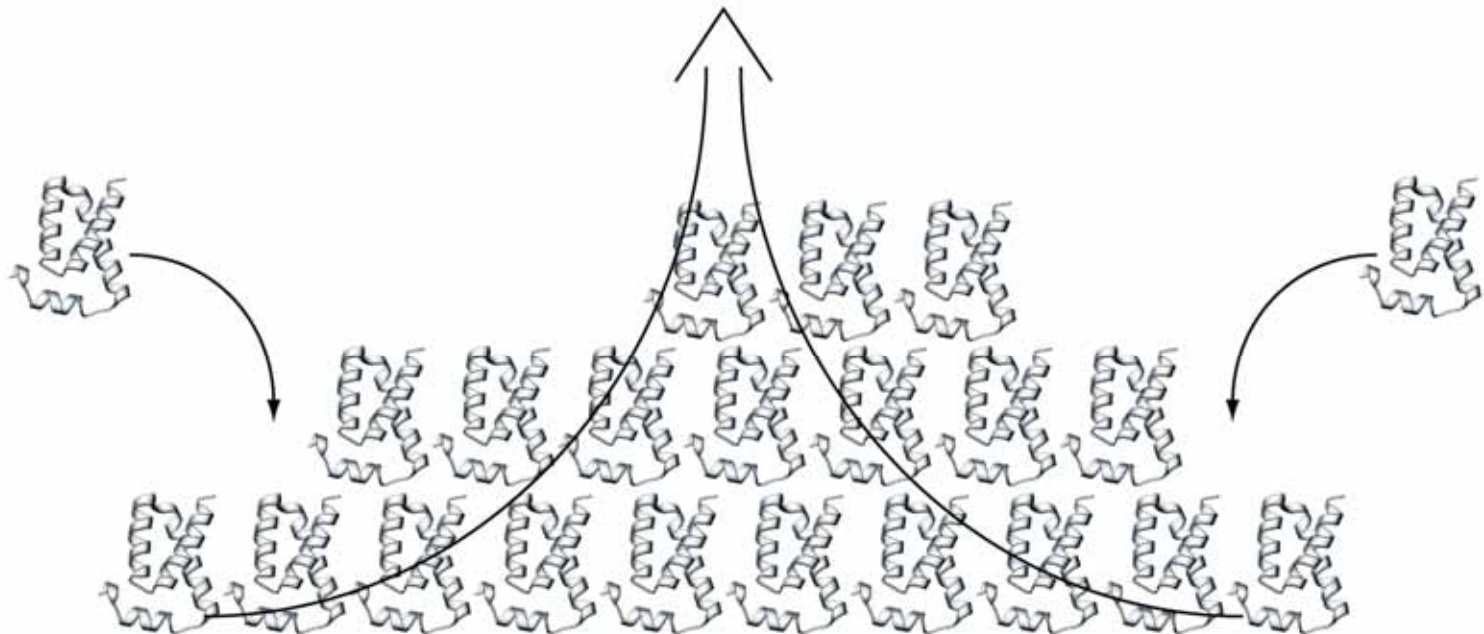
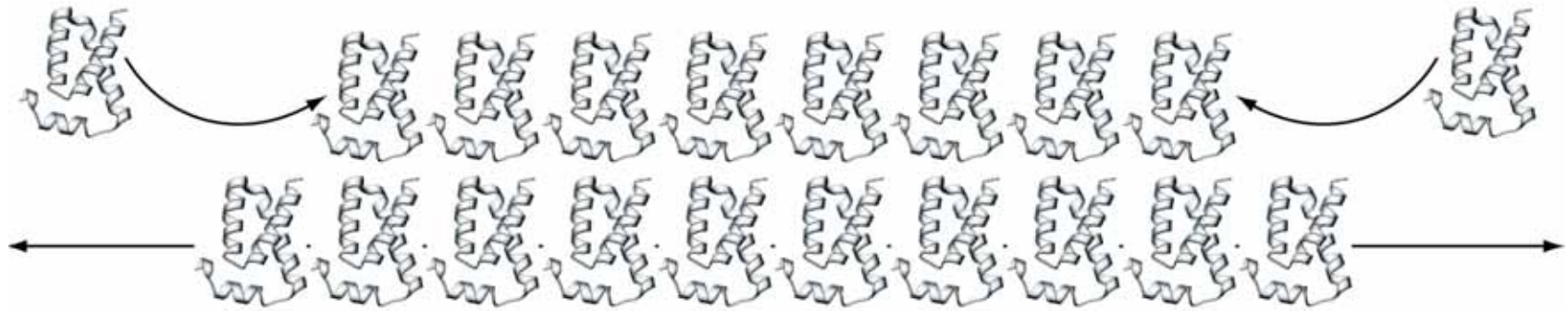


Images at two-minute intervals showing the development of the surface of a growing thaumatin crystal

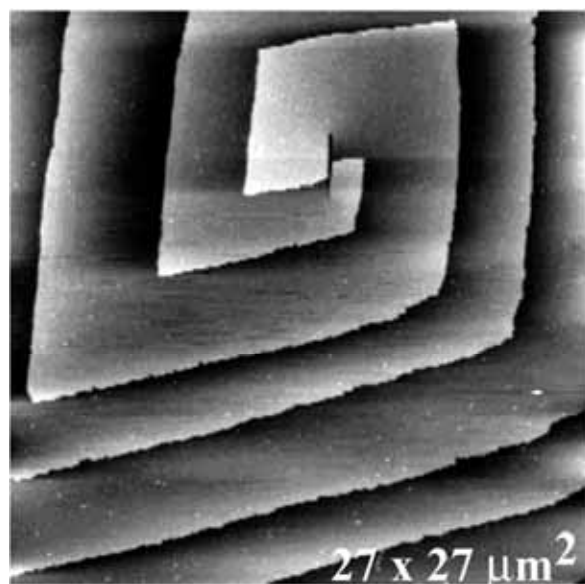




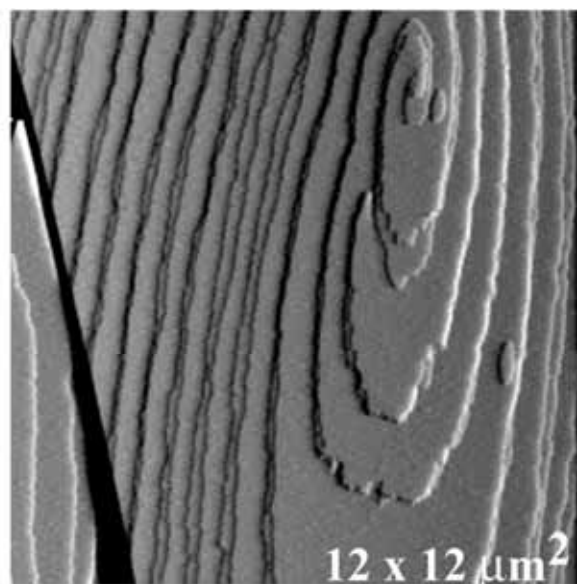
## Tangential and Normal Growth



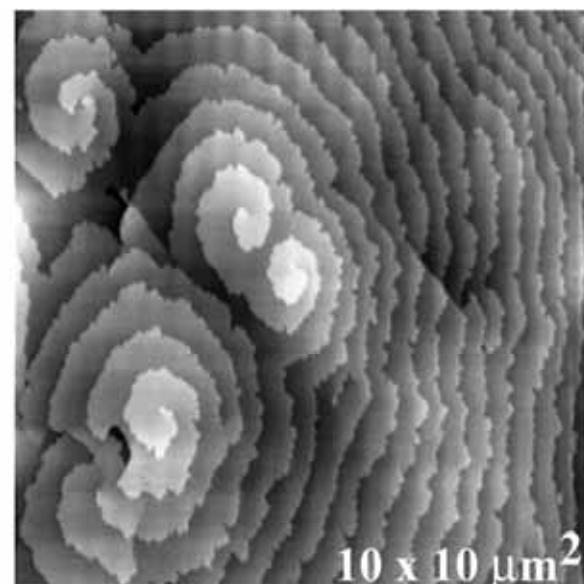
Creation of new steps - Normal Growth  
*Requires 2D nucleation*



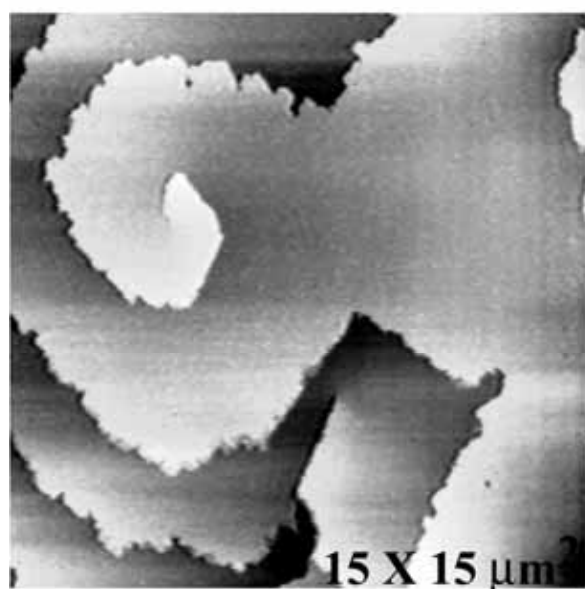
a



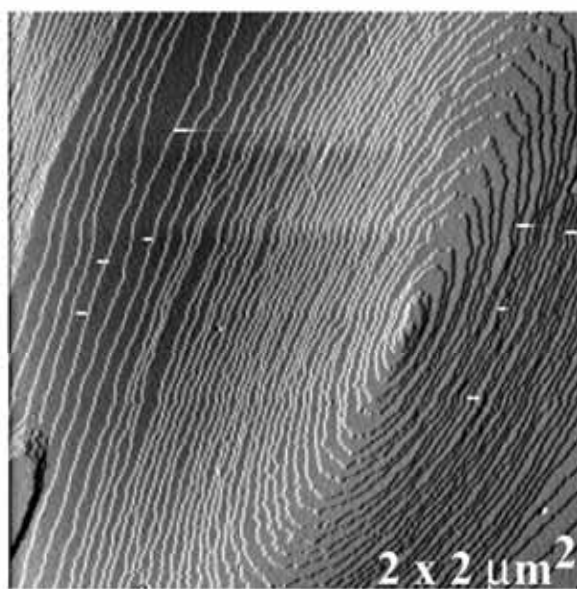
b



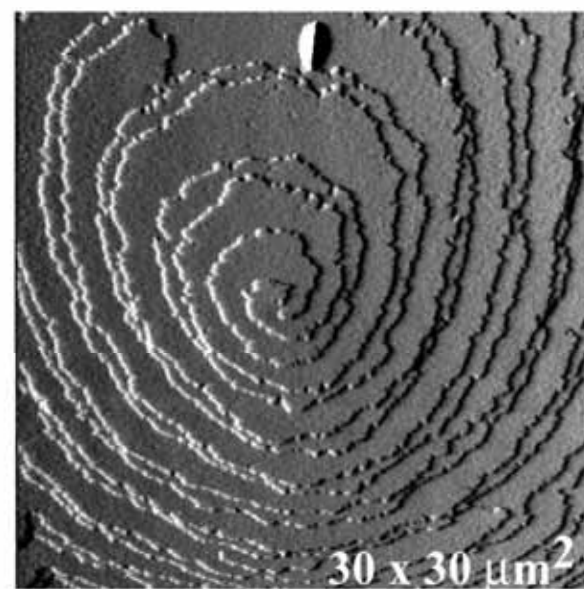
c



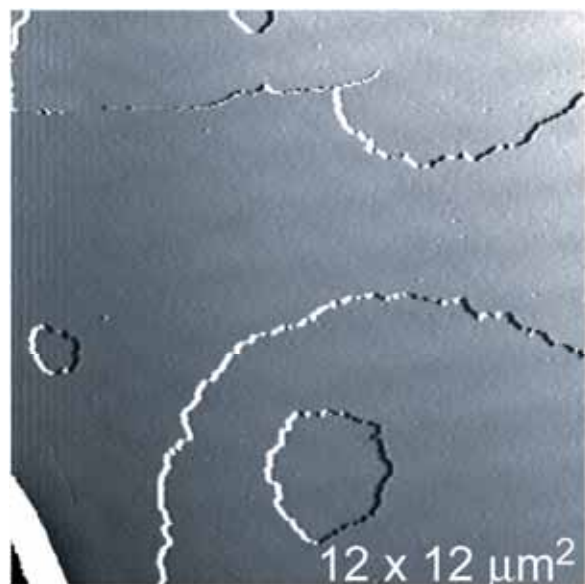
d



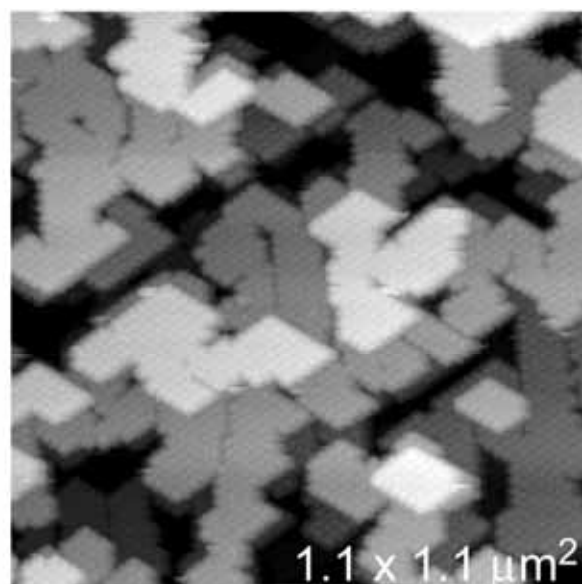
e



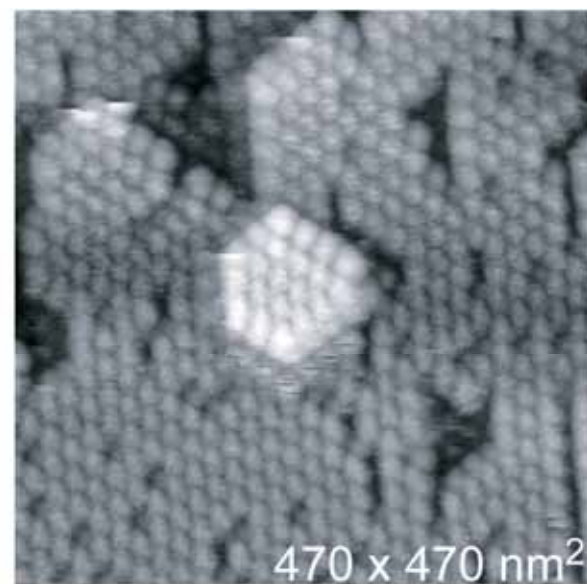
f



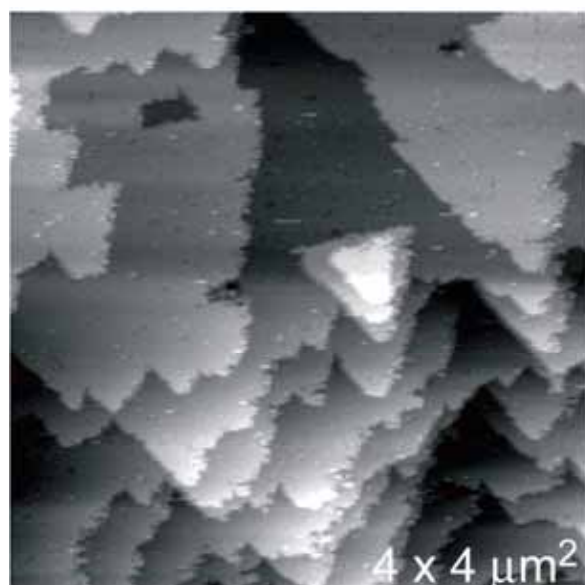
**a**



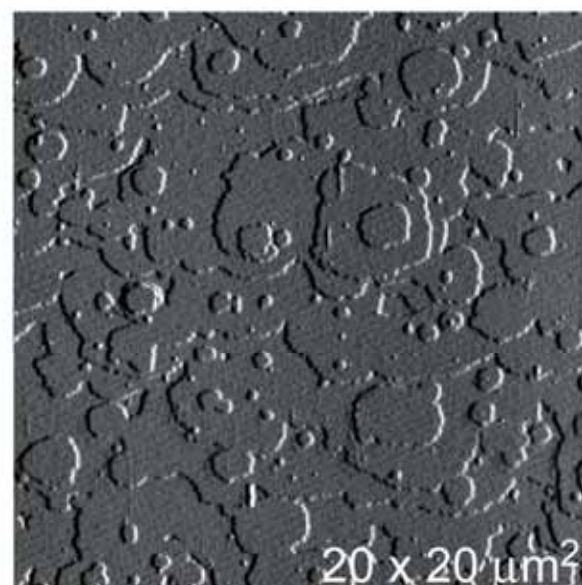
**b**



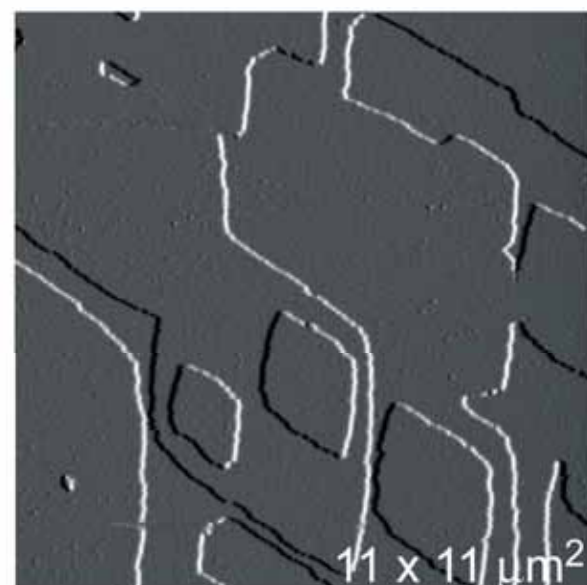
**c**



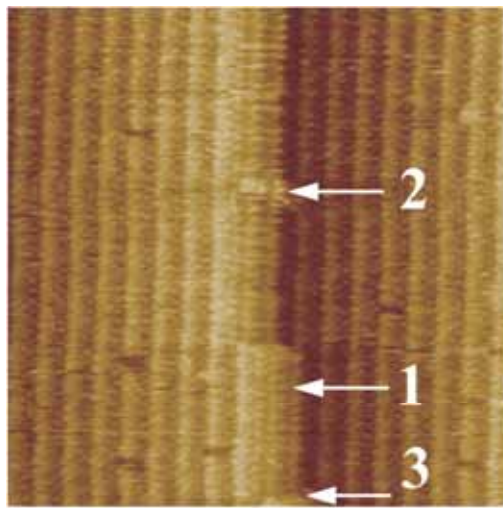
**d**



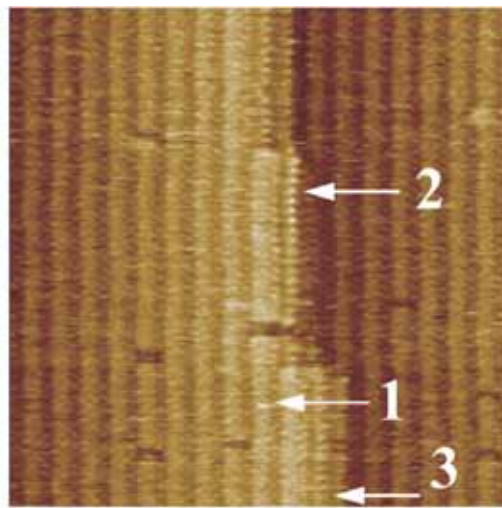
**e**



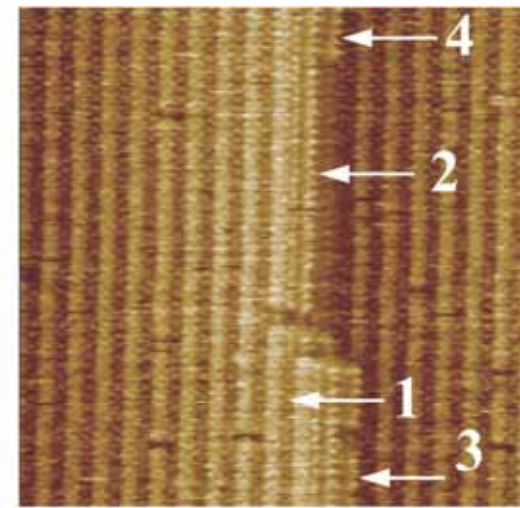
**f**



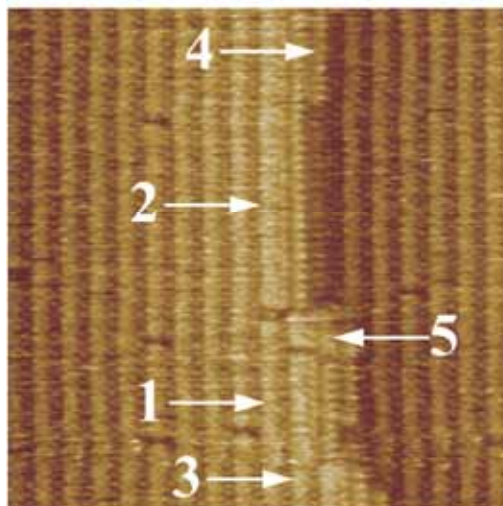
a



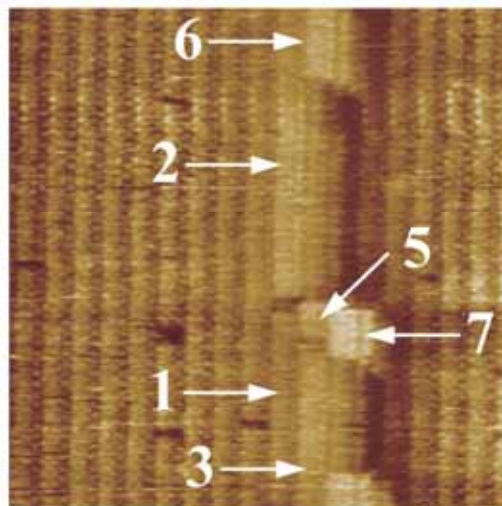
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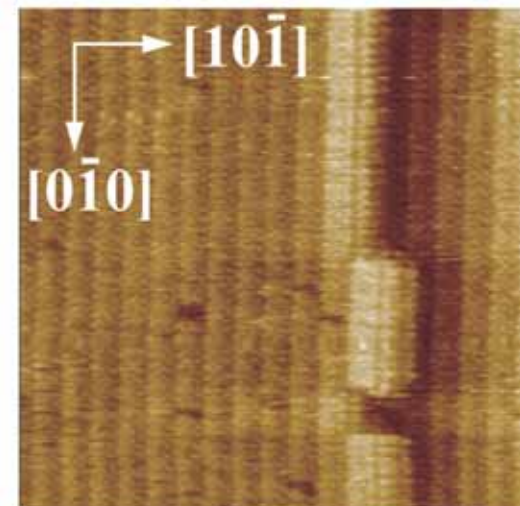
c



d



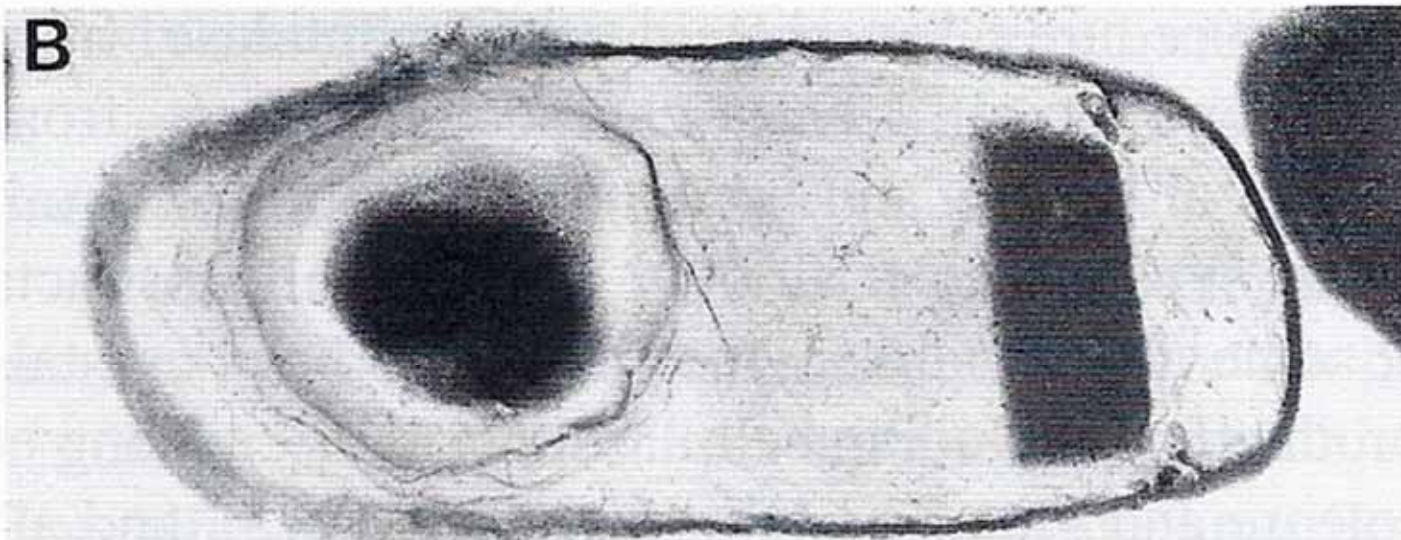
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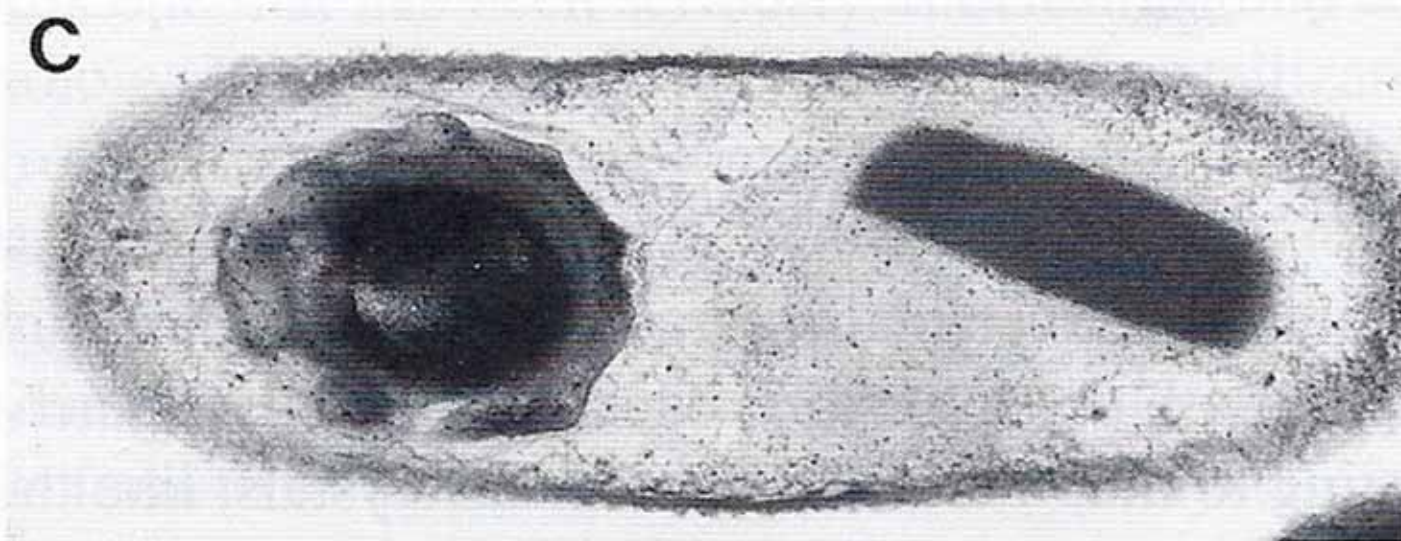
f

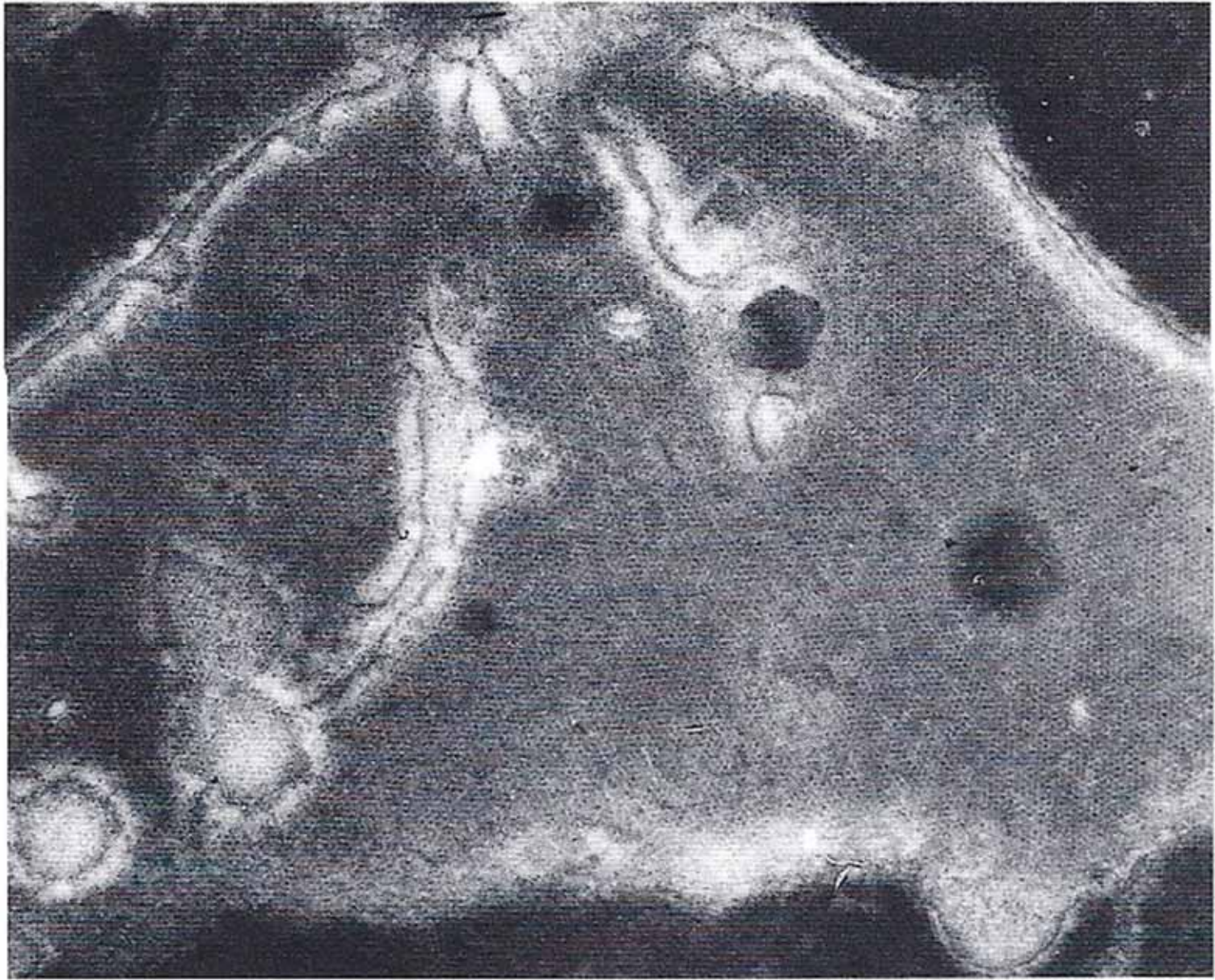
Movement of a step edge on the surface of a growing crystal of thaumatin as monitored by atomic force microscopy

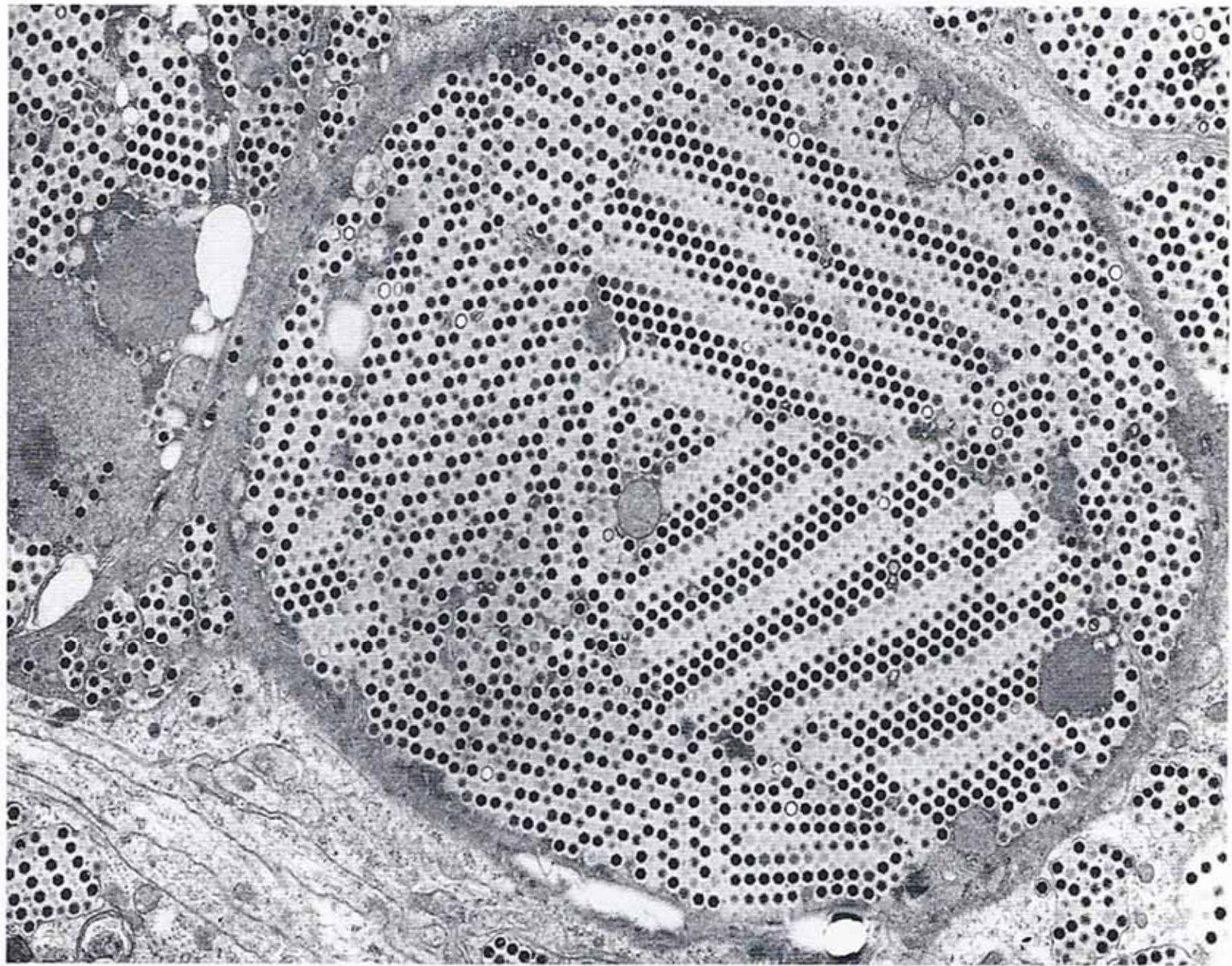
**B**



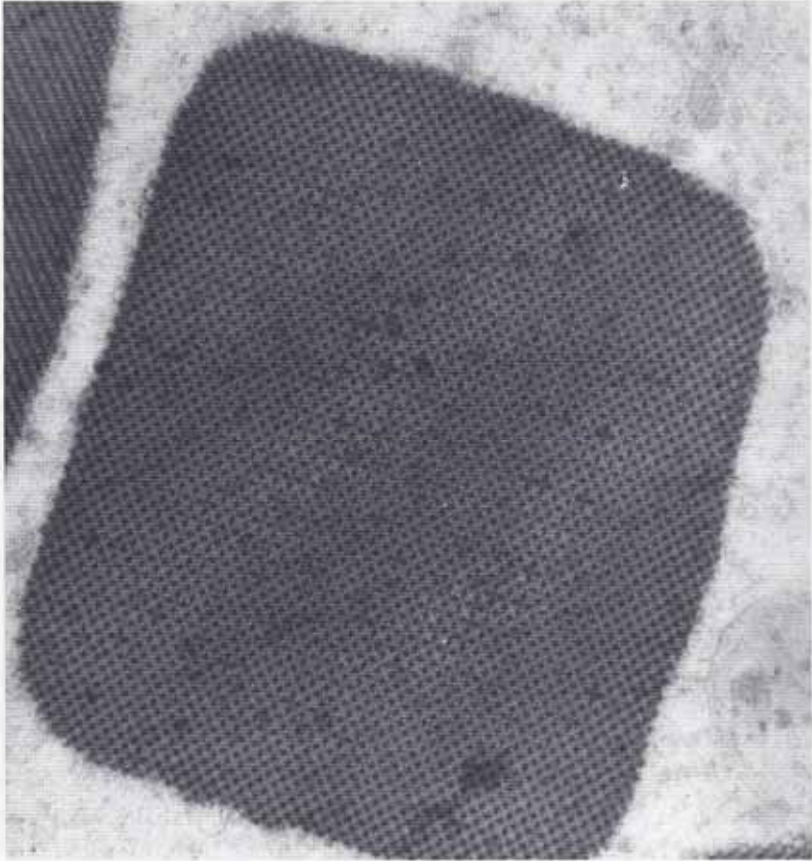
**C**



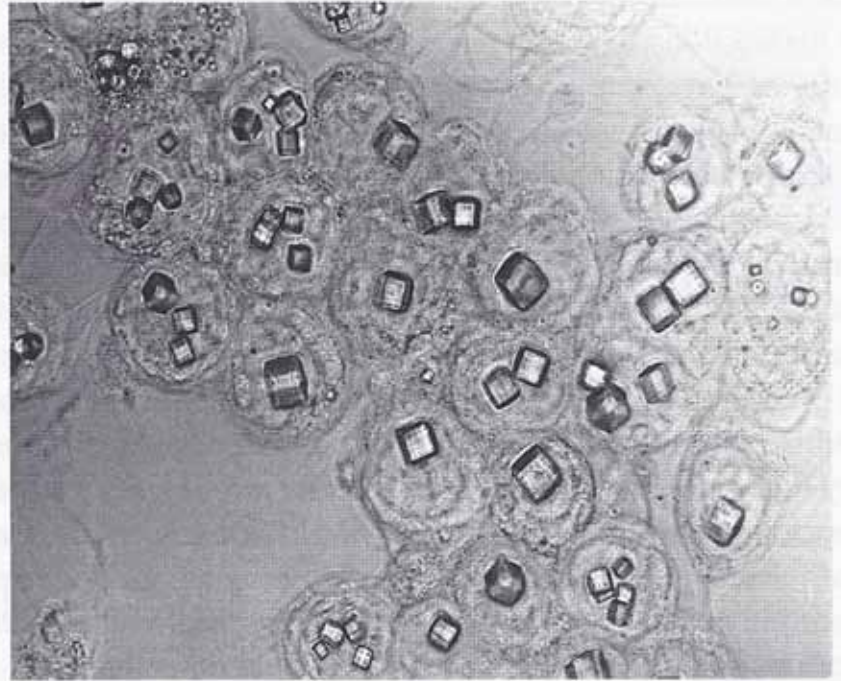




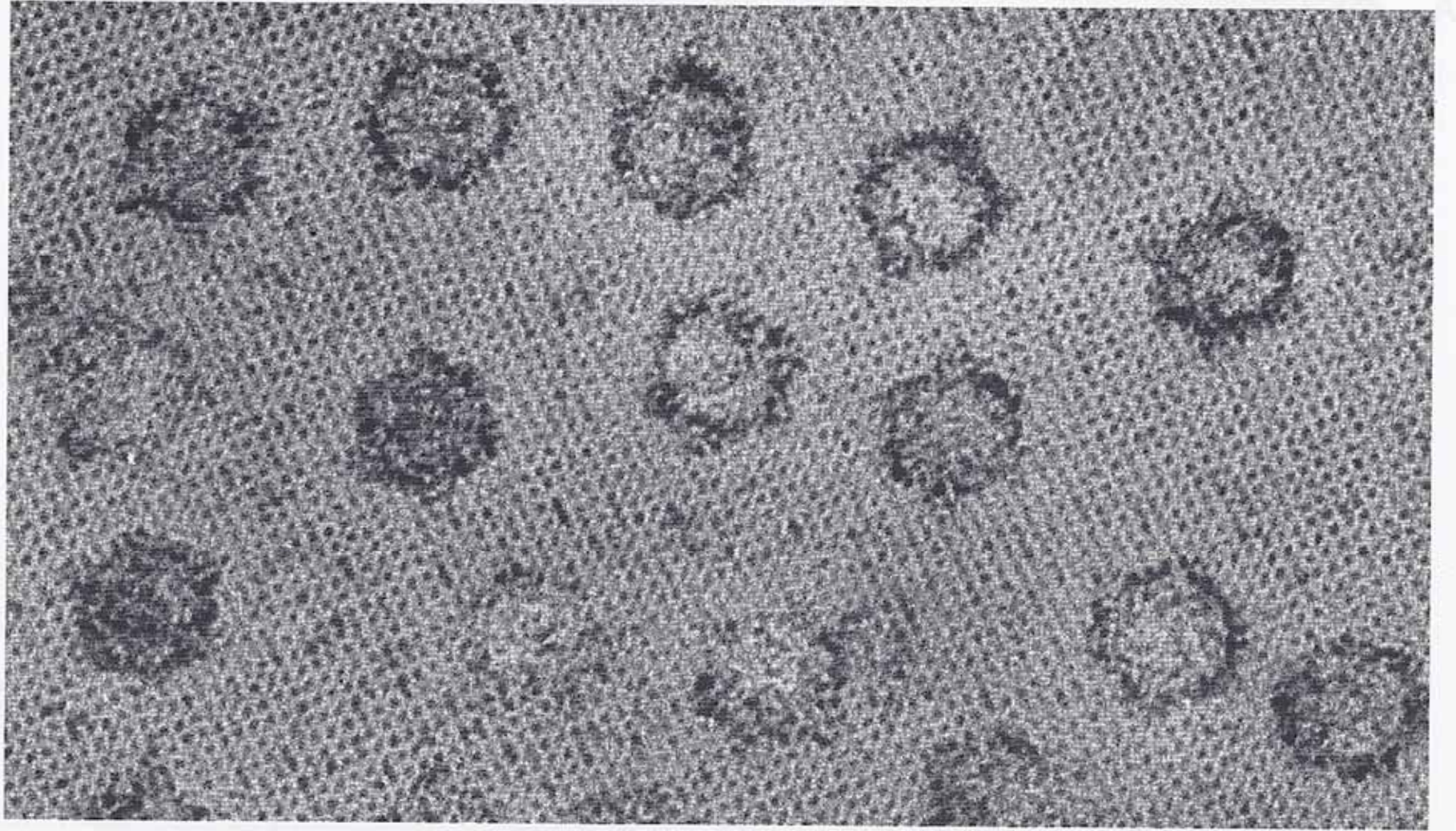




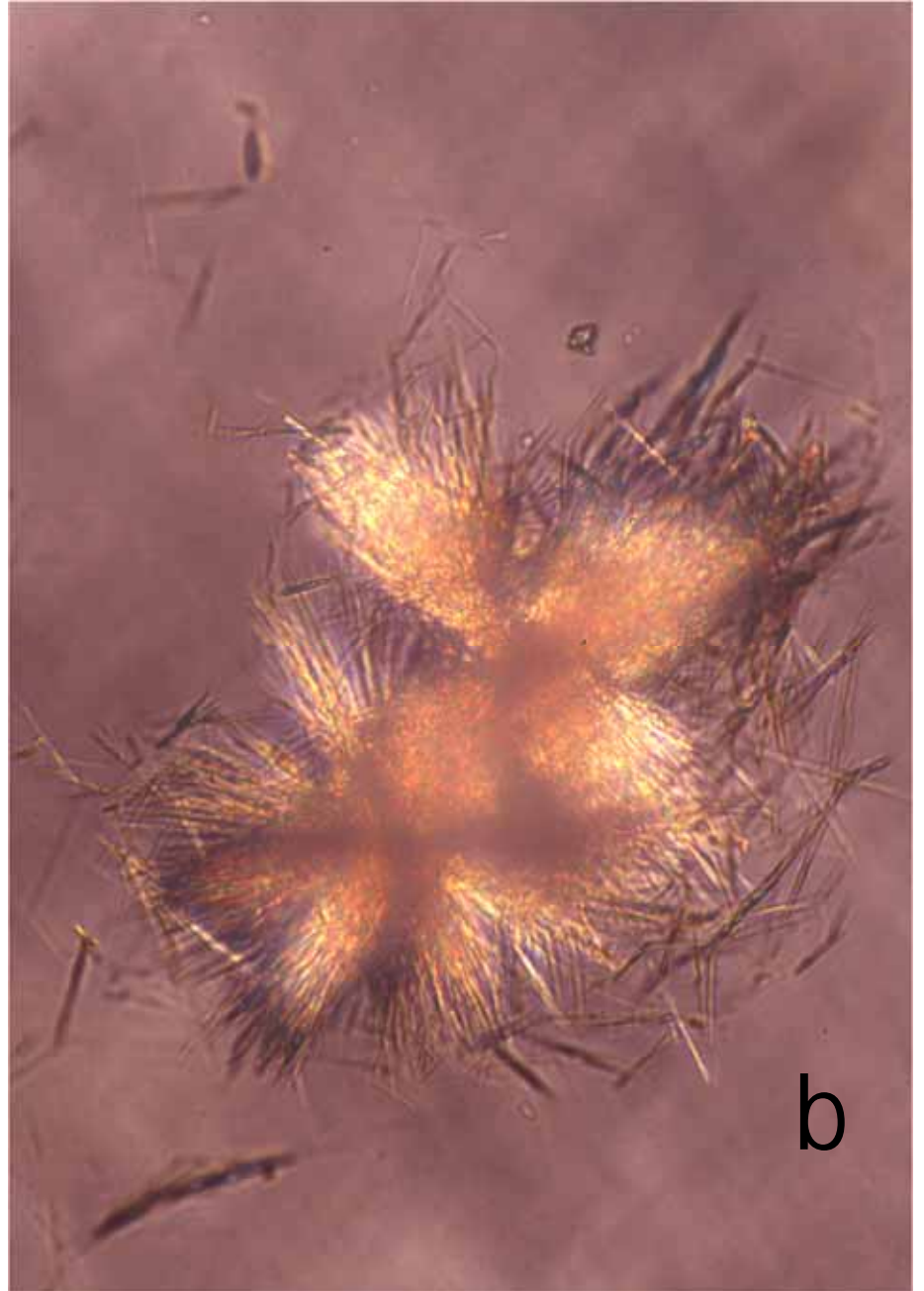
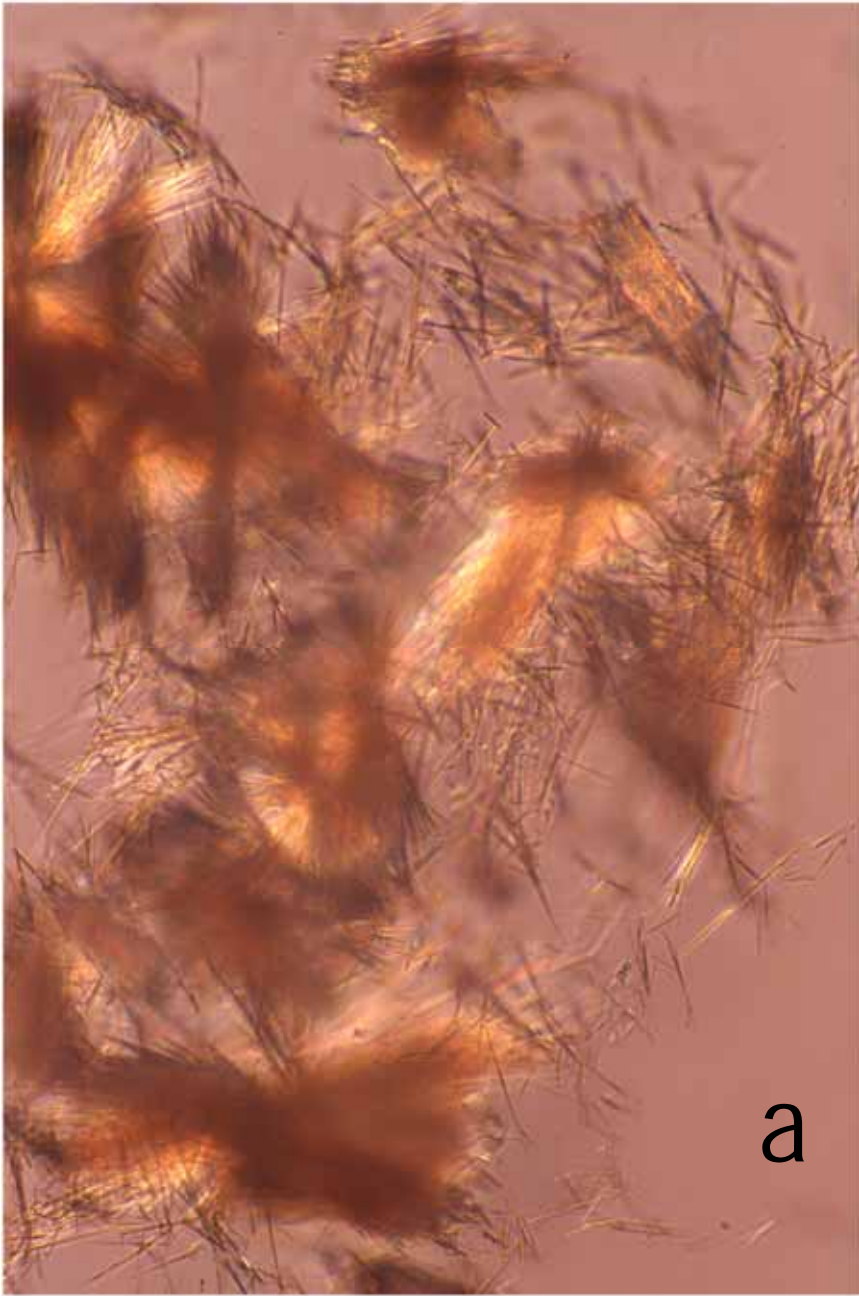
A

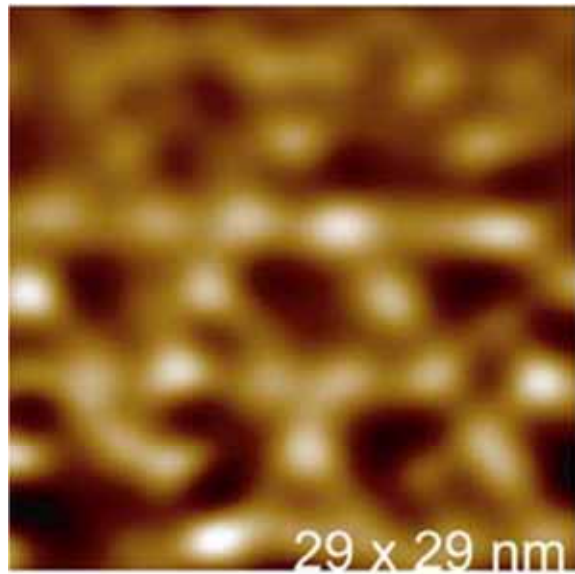


B

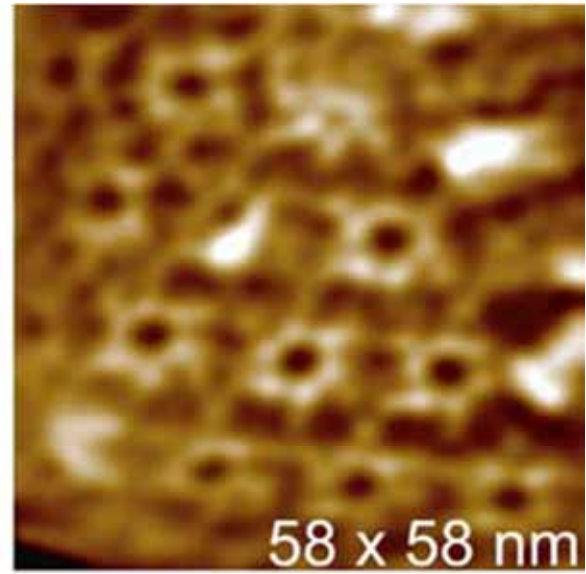




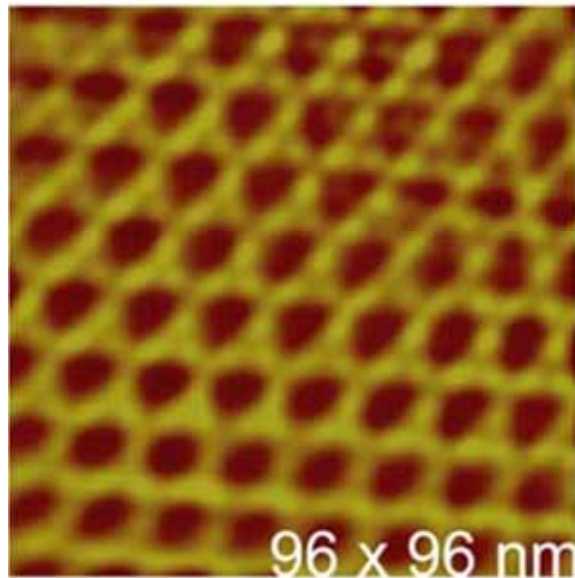




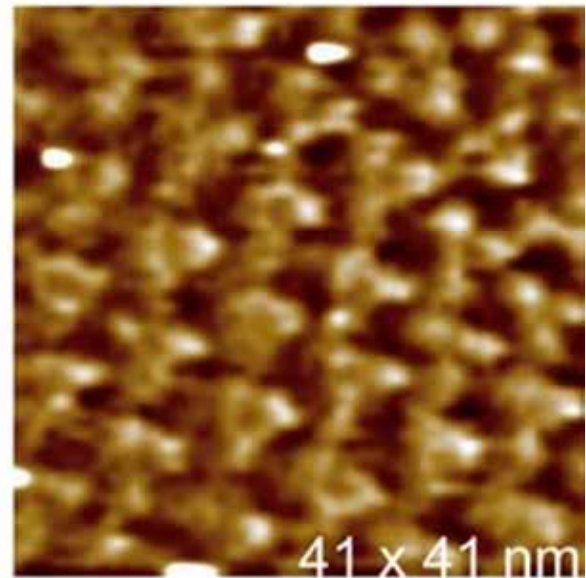
**a**



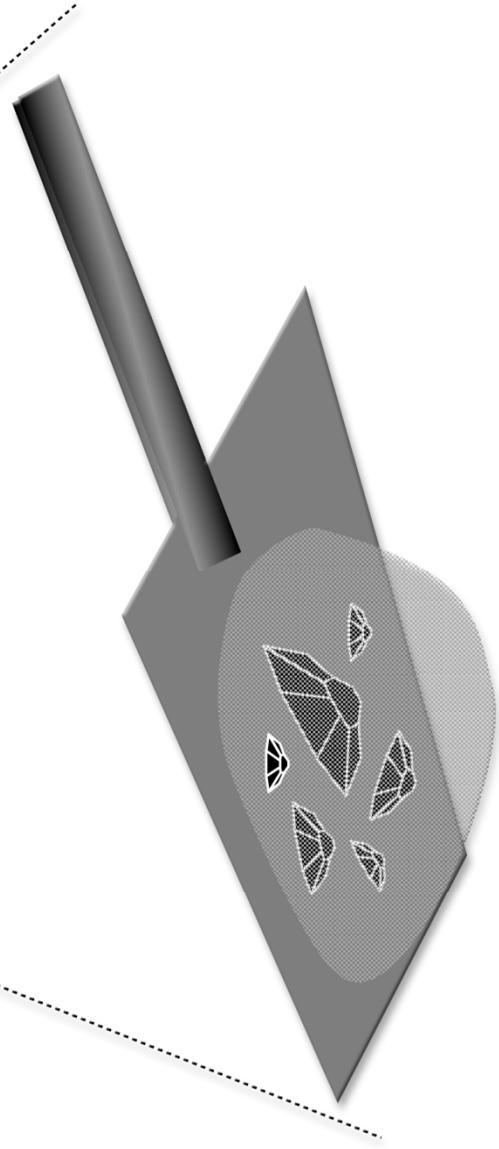
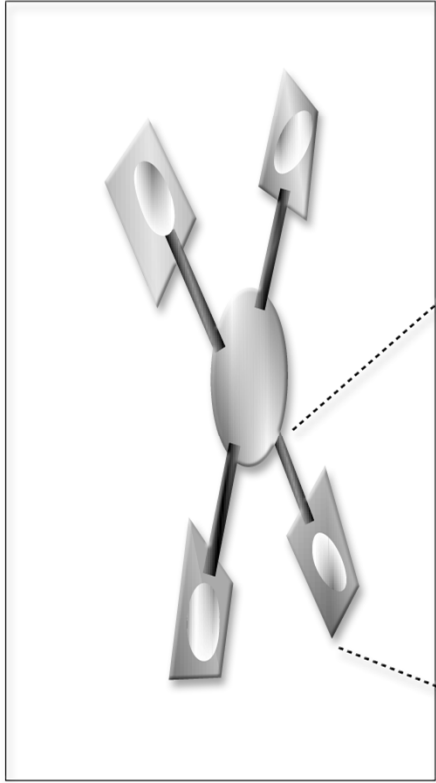
**b**

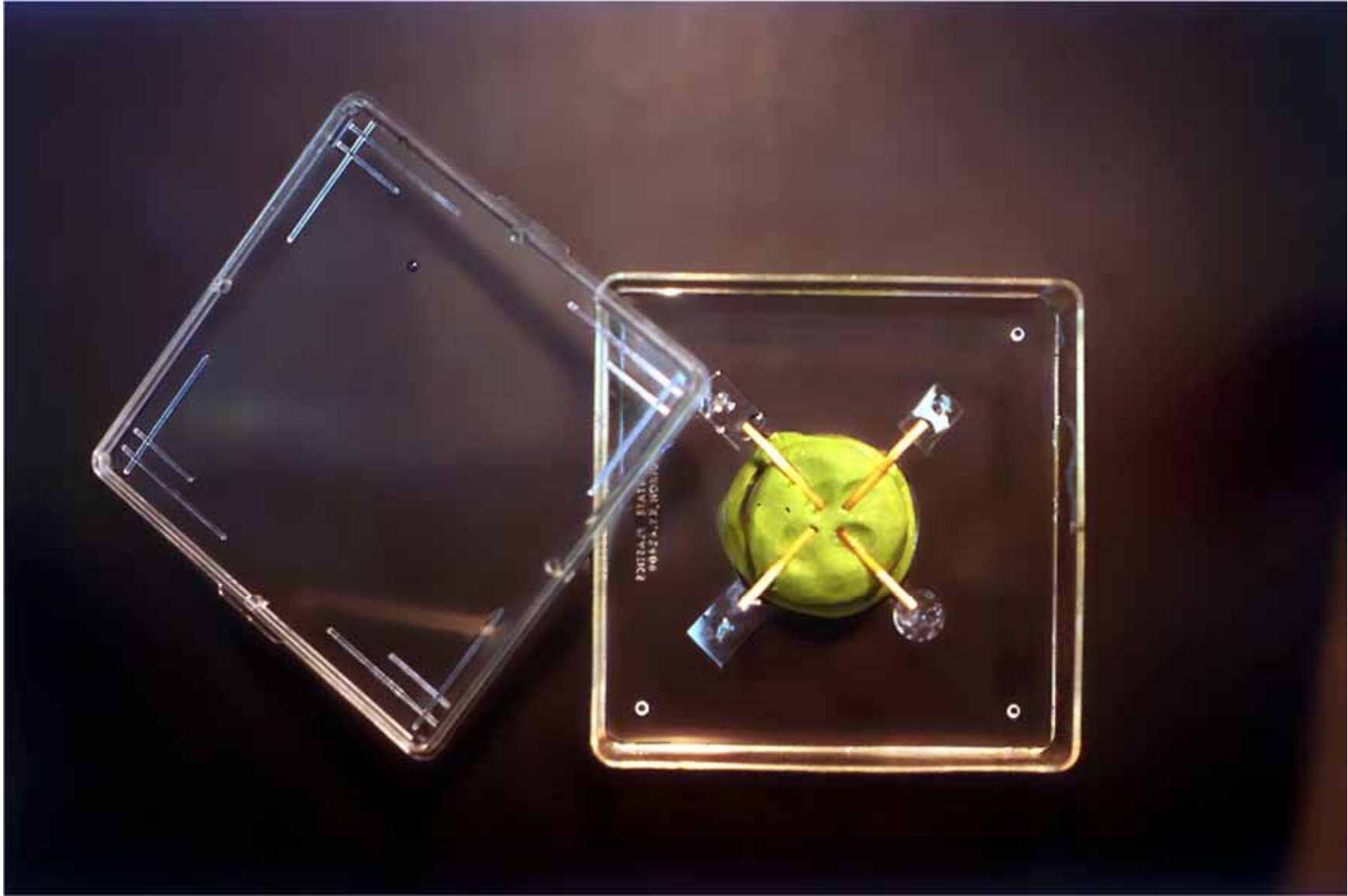


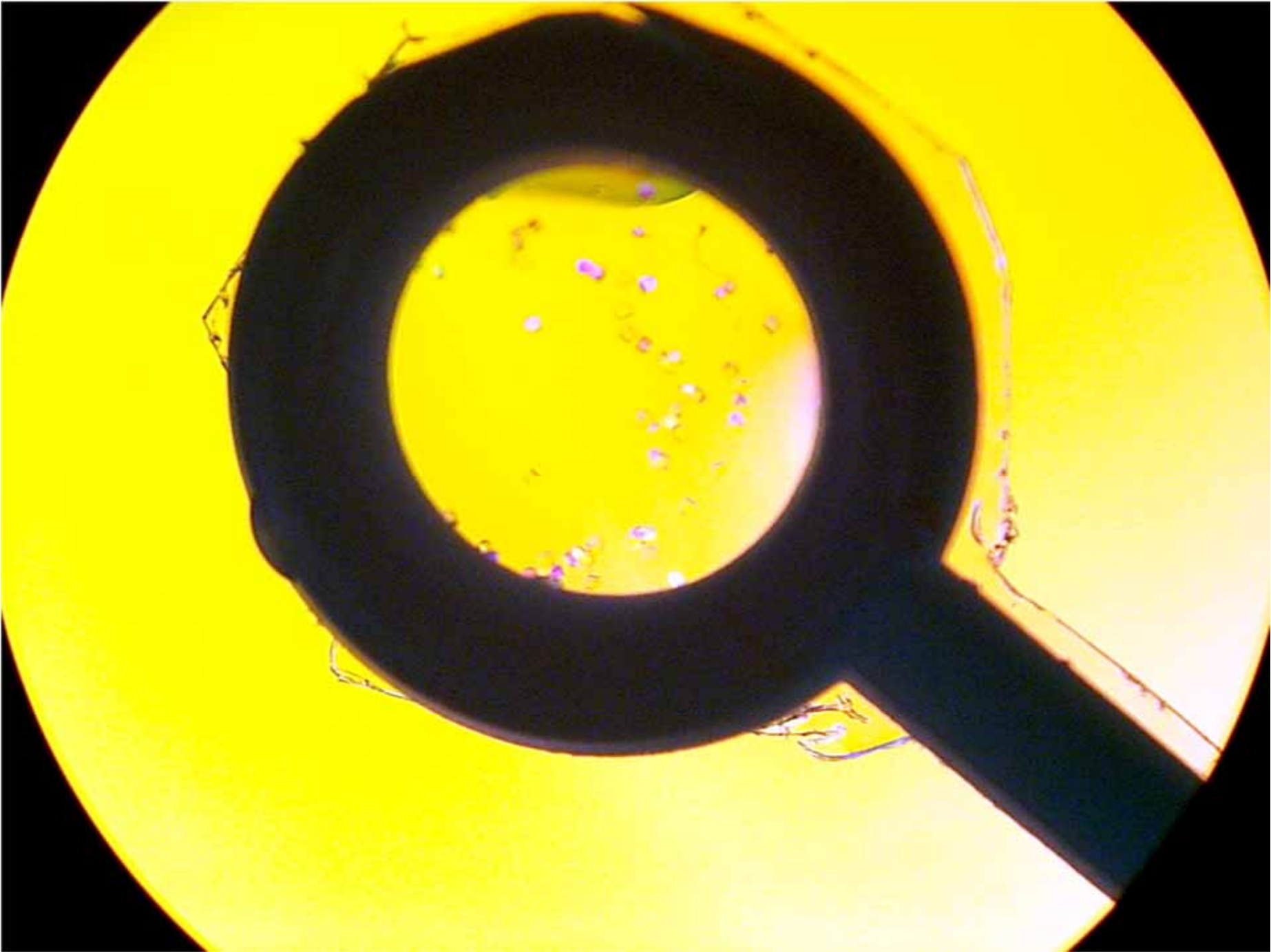
**c**



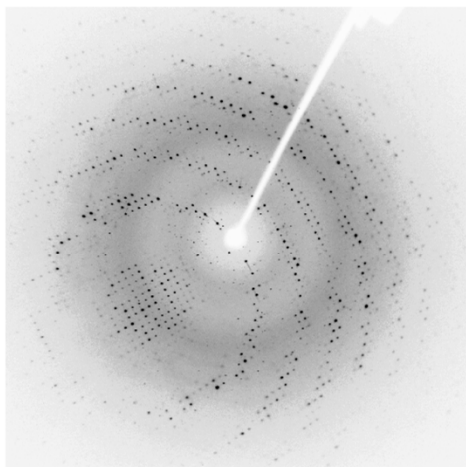
**d**



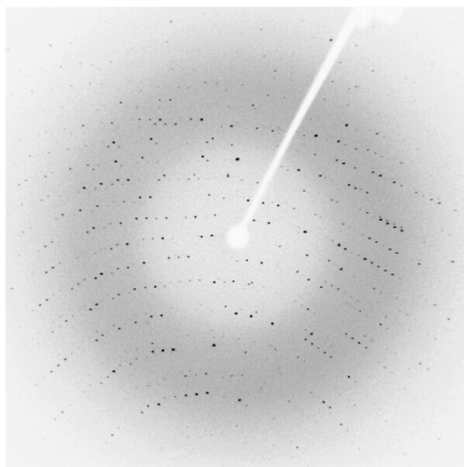




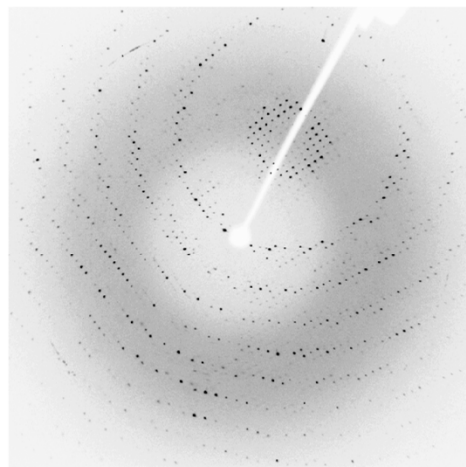




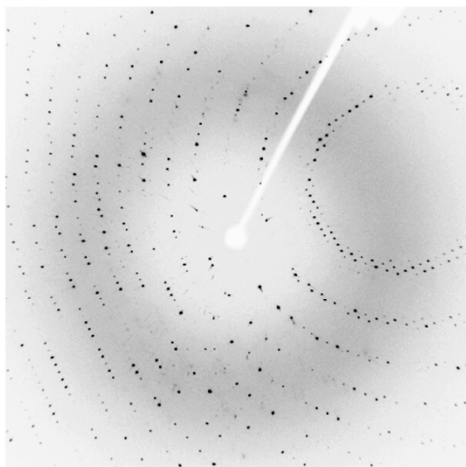
**a**



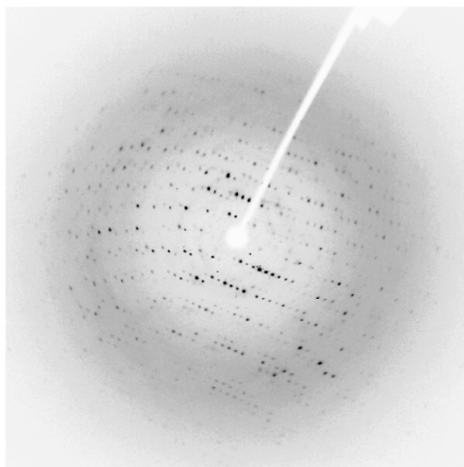
**b**



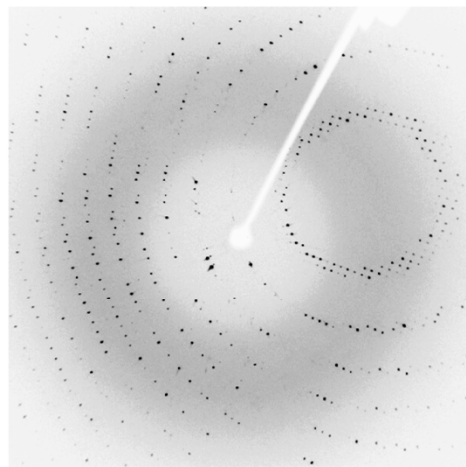
**c**



**d**



**e**



**f**