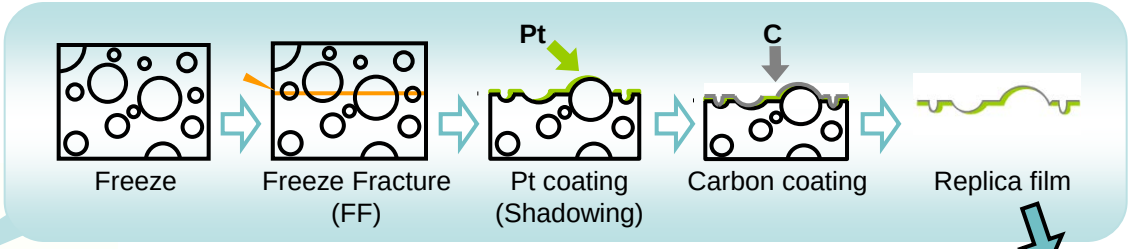
Freeze-Fracture TEM

Liposome, Biological Samples, Foods, Health-Care Products…

Freeze-fracture techniques are based on the mechanical fracture of frozen material and the high-resolution metal foil replication of the exposed surfaces. Replication by vapor deposition of platinum and carbon reveals nano-structures of membrane, interface and dispersion state of materials by transmission electron microscopy (TEM) at high resolution.

Procedure of Freeze-Fracture Replica Transmission Electron Microscopy (FF-TEM)



Freeze-Fracture Apparatus (JEOL JFDII)

Application Fields

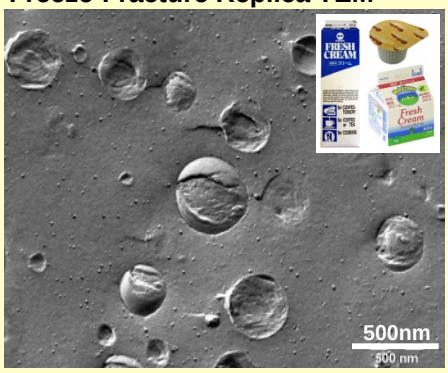
Foods
mayonnaise
cheese
ice cream
butter
chocolate
food oil

Biological samples
cell
DNA
virus
bacteria
myosin
protein

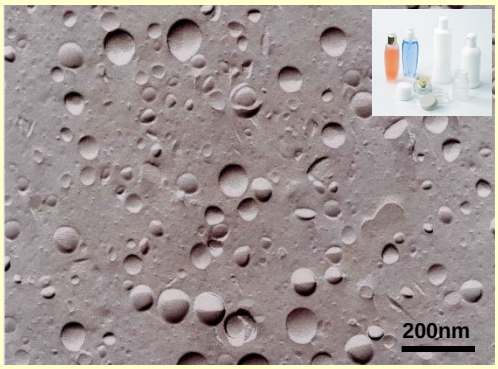
Materials
emulsion
gel
ink
pigment
oil
liposome

Applications of Freeze-Fracture Technique

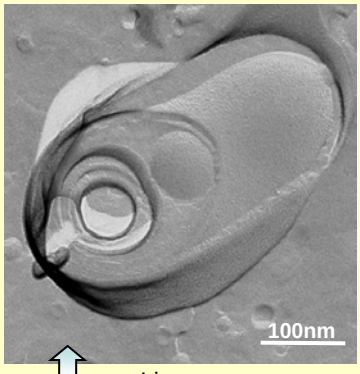
Freeze-Fracture Replica TEM



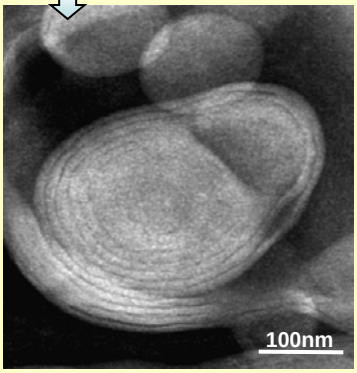
Milk



Emulsion

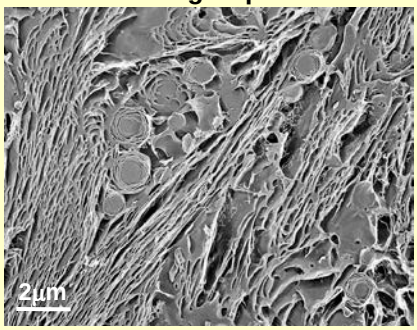


Liposome



Liposome (Negatively Stained)

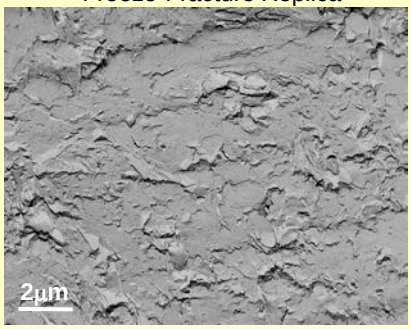
Freeze-Etching Replica TEM



Hair Conditioner

Ice sublimation

Freeze-Fracture Replica



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