

Redding, CA, USA. September 2008. For immediate release

Next generation Silicon Dioxide flat support films

Ted Pella, Inc, introduces the next generation of Silicon Dioxide Support Films for analytical electron microscopy. Utilizing advanced MEMS technologies with novel stress reducing techniques, smooth freestanding silicon dioxide membranes with unsurpassed flatness are now available. The film thickness of these flat membranes is 40nm, offering enhanced imaging capabilities for analytical TEM applications.

The PELCO Silicon Dioxide (SiO₂) support films are manufactured using the 200nm PELCO Silicon Nitride (Si₃N₄) membranes with a 0.5 x 0.5mm window as a platform. The 0.5 x 0.5mm Si₃N₄ window is patterned into 50 x 50 um small apertures and etched back to the thermally deposited silicon dioxide, leaving an amorphous, virtually wrinkle free 40nm thin SiO₂ membrane suspended by a 200nm optically transparent Si₃N₄ support mesh. The design and the size of the support mesh has been optimized to provide flat silicon dioxide supports films with a size of 50 x 50um. This is comparable with the free areas available in 300/400 mesh TEM grids and is considered to be a practical size for many applications.

The PELCO Silicon Dioxide Support Films are indispensable tools for virtually all fields of nanotechnology research using platforms such as TEM, SEM and AFM. Since silicon dioxide is a well known and functionalized material it is an ideal active participant for dynamic experiments. It can also be used as a passive physical support for TEM imaging. The silicon dioxide films show excellent chemical, physical and thermal stability. Examples of applications are:

- Nanomaterial deposition and growth (temperature studies)
- Analysis of colloids, aerosols, nanoparticles
- Carbon free TEM analysis
- Catalyst research and development with dynamic chemical reactions
- Thin film analysis and characterization (direct deposition)
- Materials science
- Study of attached biological molecules

The PELCO Silicon Dioxide Membranes manufactured on perfectly round 3mm diameter frames with the EasyGrip™ edge are fully compatible with standard TEM holders. They are debris free and are packaged under clean room conditions.

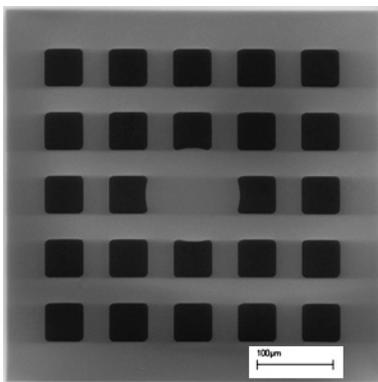


Image caption 1: PELCO Silicon Dioxide support film array with individual 50x50um windows.

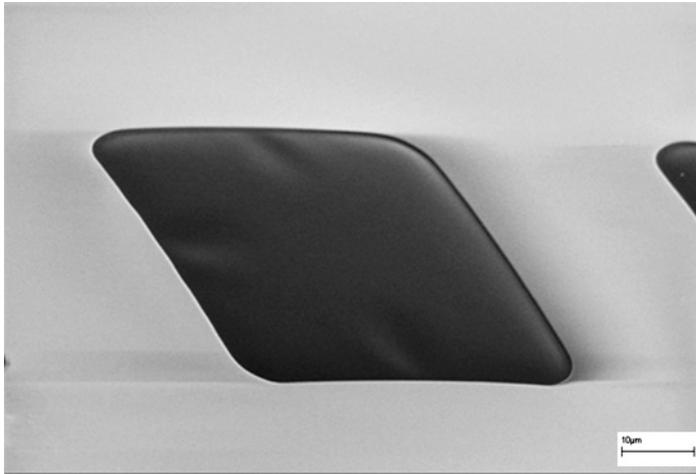


Image caption2: Tilted SEM image of Silicon Dioxide support film, note the flatness of the membrane.

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