



The basics of metal sputter coating

QUICK INTRODUCTION GUIDE

What is “sample charging” ?

Basic understanding of sample charging in an electron microscope

- ❑ Electron microscopes use an electron beam in a vacuum
- ❑ An electron beam has a lot more energy than a light beam
- ❑ Samples in an electron microscope (SEM) that are bad electrical conductors will accumulate the charges from the electron beam
- ❑ As a result these samples will start radiating energy which leads to bad image quality

Avoiding “sample charging”

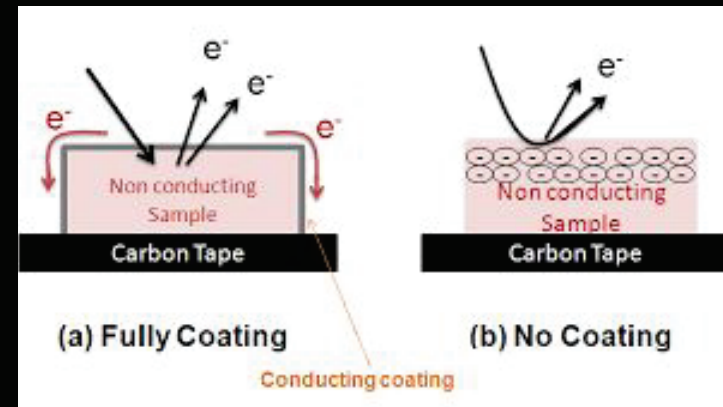
How to avoid sample charging in an electron microscope?

- 1) Energy radiation or sample charging in a SEM can be avoided in a number of ways:
 - a) Use a less energetic electron beam
 - b) Let some air or gas in the SEM (“lower the vacuum”) that picks up the charges
- 2) All these solutions have the disadvantage of compromising the image quality by creating a higher noise/signal ratio
- 3) The best solution is to use a sputter coater to first coat the samples before imaging.

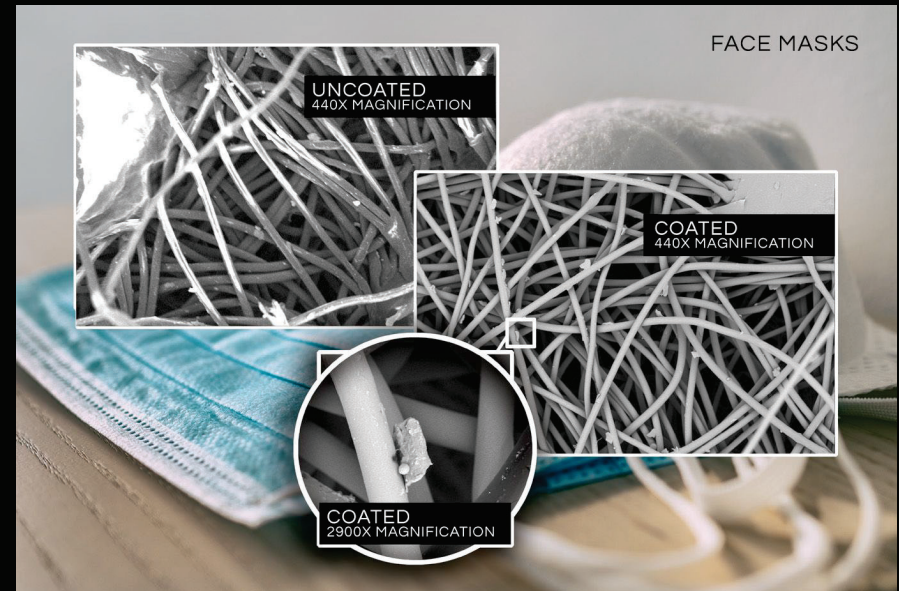
How does a sputter coater work?

Quick explanation of the technique

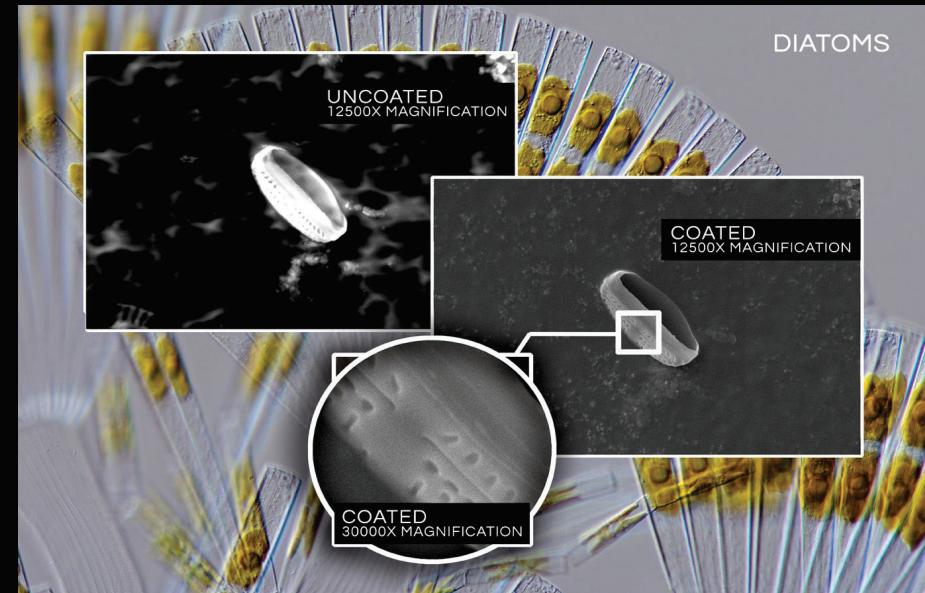
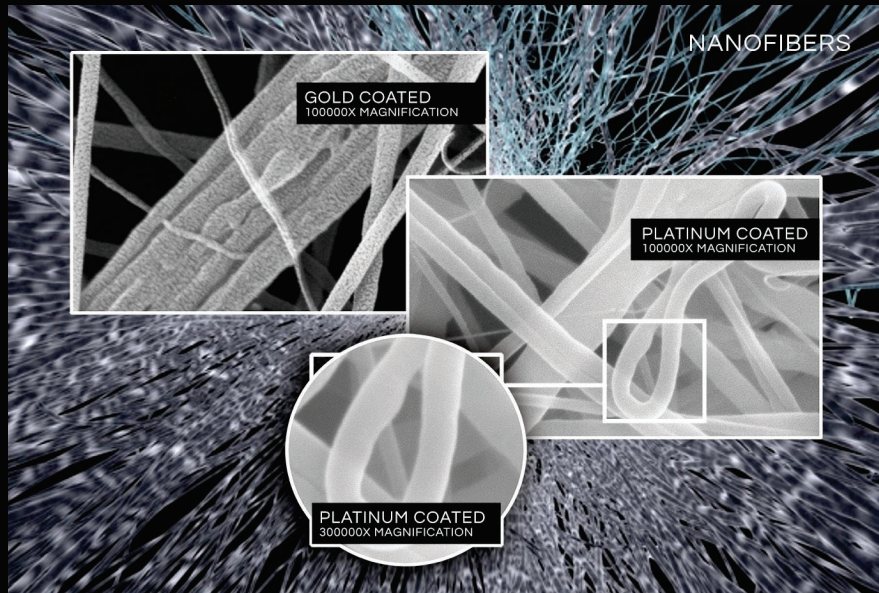
- ❑ It puts a thin layer of metal on the sample
- ❑ This conducting “coating” will remove the excess of electrons from the sample to the sample holder and SEM
- ❑ In this way charging will be avoided



SEM images of samples before and after coating



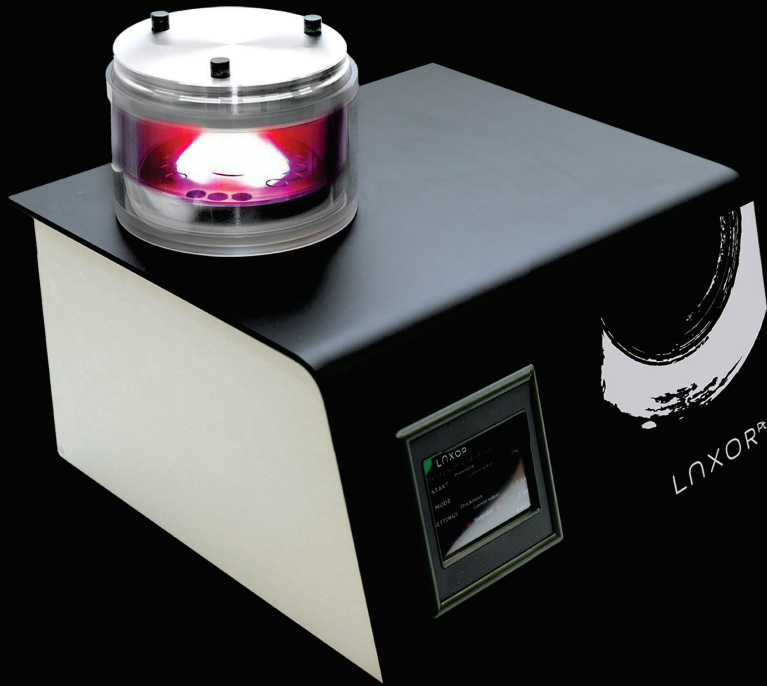
SEM images of samples before and after coating



LUXOR

Why using a Luxor metal coater?

The benefits of the Luxor metal coater for electron microscopy



01.

UNIQUE A² TECHNOLOGY

A² Technology ensures the most accurate, thin and uniform sample coating for improved SEM analysis

02.

UPSIDE DOWN DESIGN

The revolutionary upside-down design safeguards your SEM while also protecting samples and operators

03.

FULLY AUTOMATED

Load your samples, select the coating thickness, and push the start button. As simple as that.

APPLICATIONS

FIBERS AND FILTERS

LIFE SCIENCES

PHARMACEUTICALS

POLYMERS

GUIDES

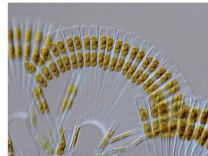
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APPLICATION NOTES

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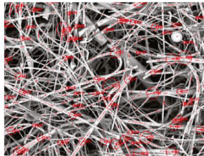
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BROCHURES



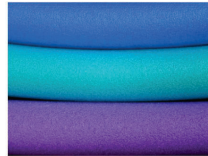
METAL COATING OF DIATOMS
APPLICATION NOTES / LIFE SCIENCES



METAL COATING OF A FACE MASK
APPLICATION NOTES / FIBERS AND
FILTERS / POLYMERS



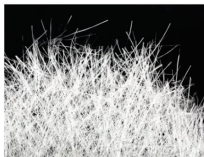
METAL COATING OF NANOFIBERS
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FILTERS / POLYMERS



METAL COATING OF STYROFOAM
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METAL COATING OF BIO SAMPLES
APPLICATION NOTES / LIFE
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METAL COATING OF GLASS FIBERS
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SEM COATING

Made smart and easy