

# False Morphology of Aerogels Caused by Gold Coating for SEM Imaging

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Scanning electron microscopy (SEM) imaging is one of the most fundamental techniques to study aerogel morphology [1]. Some aerogels are non-conductive materials, and it may be necessary to deposit a few nanometers thick conductive layer on the samples. However, this procedure can change the morphology of the aerogels.

In my presentation, I demonstrate how the surface structures of different aerogels change as a result gold sputtering. Aerogels were imaged in pristine form and after gold sputtering by low voltage scanning electron microscopy (LVSEM). The structural characteristics of the pristine aerogels are in good correlation with the characteristics measured by N<sub>2</sub> adsorption-desorption porosimetry. However, the structure of the coated aerogels changes and contains nanostructured gold [2].

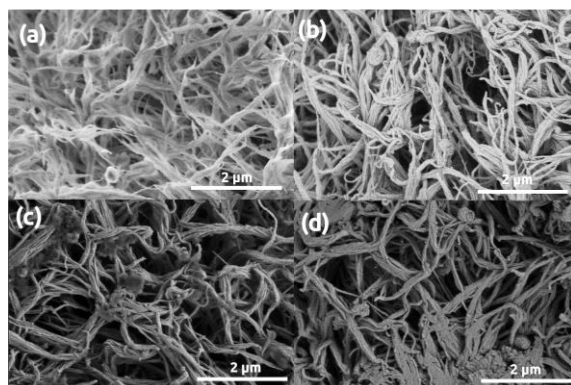


Figure 1: Low-Voltage Scanning Electron Microscopy (LVSEM) images of polyamide-Ca(II) aerogel samples. (a) Pristine, uncoated. (b, c, d) Sputter coated with 5 nm, 16 nm and 32 nm thick Au layers, respectively.

## References:

1. C. W. Price, P. L. McCarthy, *Scanning*, **10**, 29–36. (1988)
2. L. Juhász, K. Moldován, P. Gurikov, F. Liebner, I. Fábíán, J. Kalmár, C. Cserhádi, *Polymers* **13**, 588. (2021)