

THE EVACTRON DE-CONTAMINATOR FOR CARBON FREE VACUUM ENVIRONMENTS

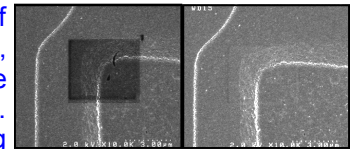
As the technology using vacuum systems becomes more sensitive, the need for vacuum chambers free of carbon contamination becomes more important. In 1999, XEI Scientific introduced the Evactron De-Contaminator, which is now recognized as the leading product for removing carbon contamination *in situ* from vacuum chambers.

The Evactron De-Contaminator is a compact, relatively inexpensive, and easy to use device which can be installed on almost any vacuum system. The Evactron De-Contaminator works by leaking in a flow of oxygen containing gas, such as room air, past an electrode energized by a low power (<20 W) radio frequency (RF) generator. As the oxygen containing gas flows past the electrode energized by the RF generator, a fraction of the oxygen is turned atomic oxygen radicals. The oxygen radicals flow throughout the vacuum chamber and react with carbon contamination, turning it into water and carbon dioxide, which are pumped away from the vacuum chamber. Because the Evactron De-Contaminator works with low power RF, it does not produce highly energetic ions which can damage sensitive equipment such as X-ray windows.

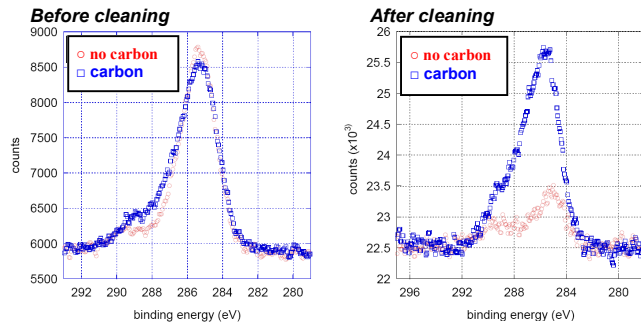


An important application for the Evactron De-Contaminator is the removal of hydrocarbons from Scanning Electron Microscopes (SEMs). A contaminated SEM, especially when operated at low voltage and high magnification, will lead to the carbon actually building up and obscuring the image the SEM user is trying to see. With the Evactron De-Contaminator, the source of the carbon is eliminated leading to cleaner imaging and better results.

Before cleaning After cleaning



Images by R. Passey, HP

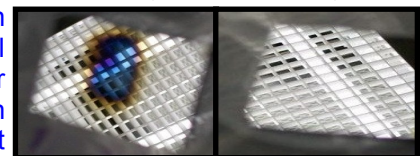


Data courtesy of L. Strein and D. Allred, BYU

analysis. Cleaning the antechamber with the Evactron De-Contaminator removes the carbon artifact from the data, as shown in the XPS traces on the right.

Another example is the cleaning of Extreme Ultraviolet (EUV) optics in vacuum chambers. Like SEM electron beams high energy, EUV light will cause hydrocarbon contamination to build up on EUV optics, reducing their effectiveness. The Evactron De-Contaminator can remove the contamination from the EUV Lithography chambers, and it can clean the optics without damage.

Before cleaning After cleaning



Images courtesy of LBNL

As new technology increases the need for cleaner vacuum chambers, the Evactron De-Contaminator provides the solution for removing carbon contamination. Over 1000+ units have been shipped. The Evactron De-Contaminator conforms to CE, NRTL, and SEMI S2, and comes with a five year warranty.



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