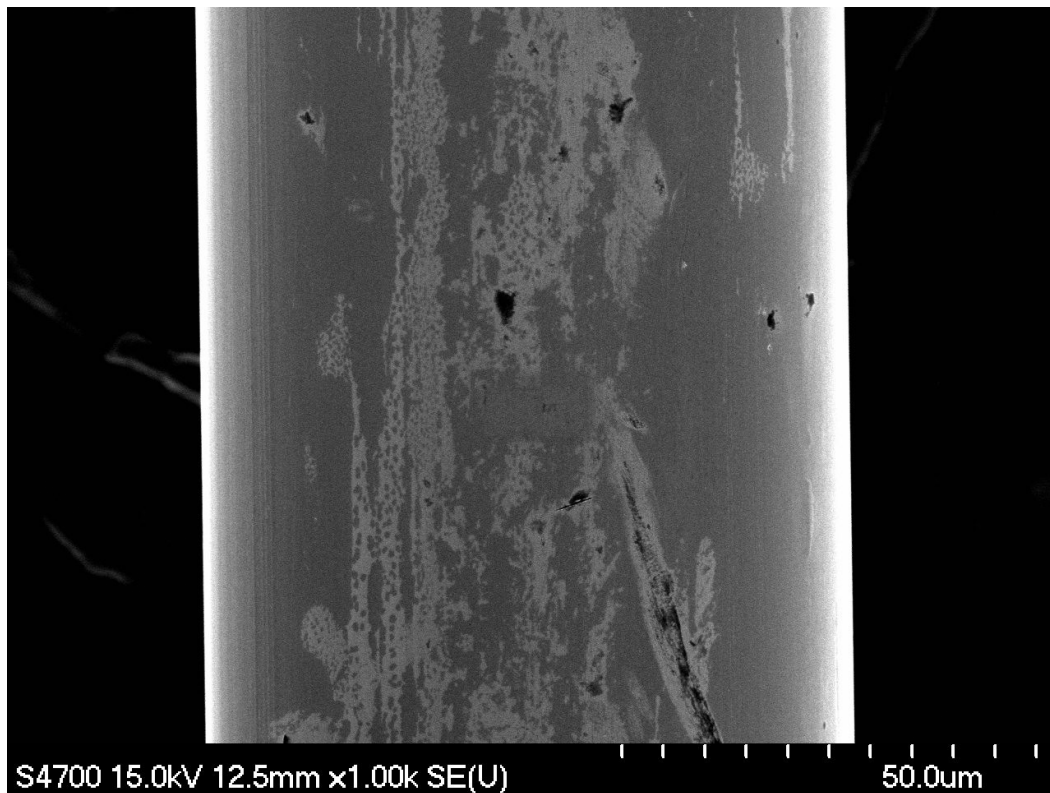


80 μm Gold-coated Wire. Hall D. FE SEM & EDS Characterization Report.

Wire samples were installed on the clean aluminum sample holder and fixed with two pieces of sticky copper tape. Due to the presence of uncovered aluminum all EDS spectra contain an Al peak, which could be ignored. Two $\sim 25\text{mm}$ pieces of wire were examined at magnifications in the interval between 500x and 800x (second fast scan). Images were taken at various magnifications at slow scan. Corresponding EDS analysis was performed.

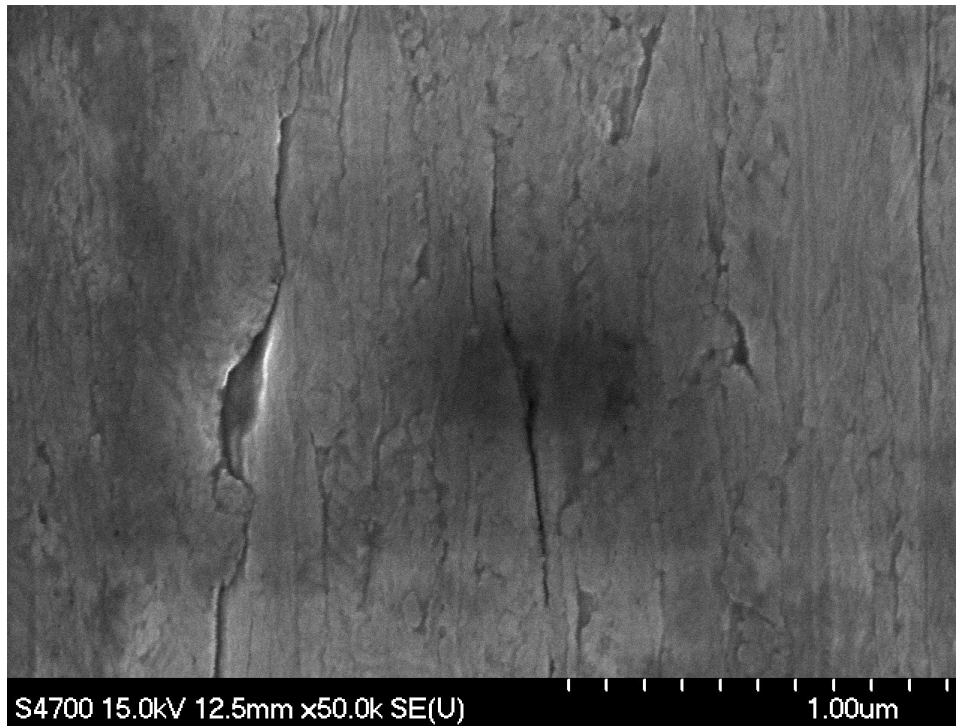
1) Pic1. Sample image at 1Kx magnification.



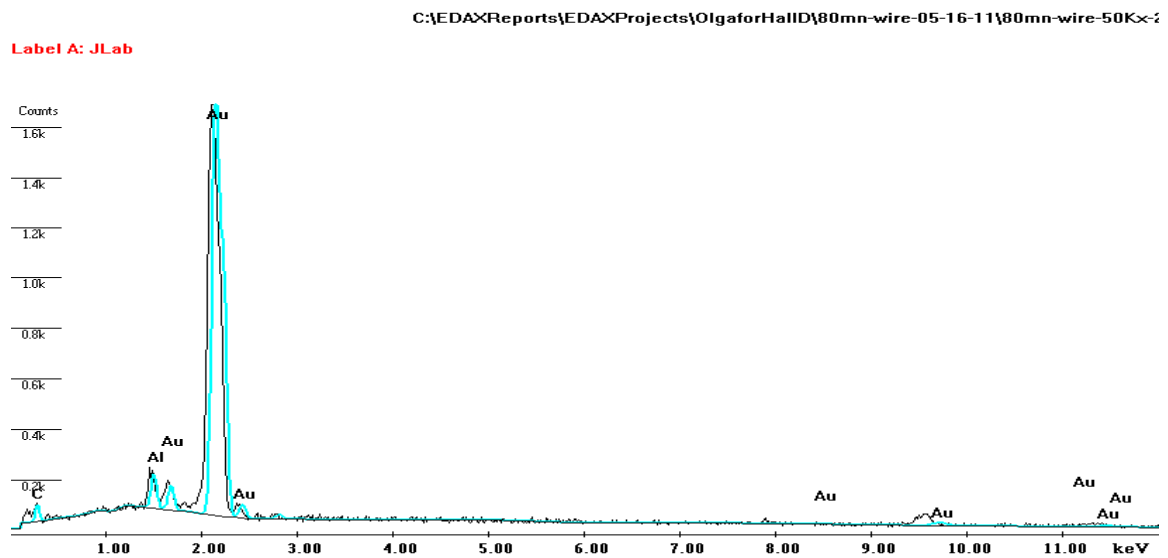
As observed, wire sample has some surface contamination. Partly, this contamination layer could be “burned off” by an electron beam at high magnification after prolonged exposure (see clear rectangular spot in the center of the image). Contamination layer was observed EVERYWHERE on the sample surface: some places were cleaner than others, but not a single part of wire completely contamination-free was found.

As shown below, contamination is most probably of environmental origin. Contaminated areas contained substantial amount of carbon while clean spots were practically carbon-free, as shown by the EDS analysis.

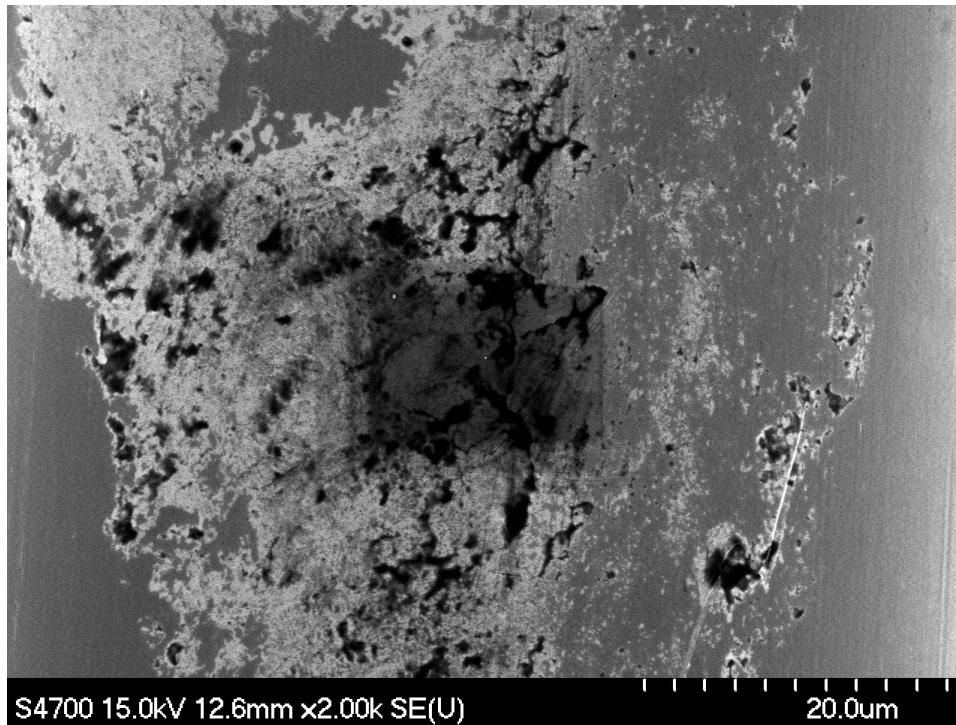
Pic2. High magnification (50Kx) image of contamination-free surface area. Surface details.



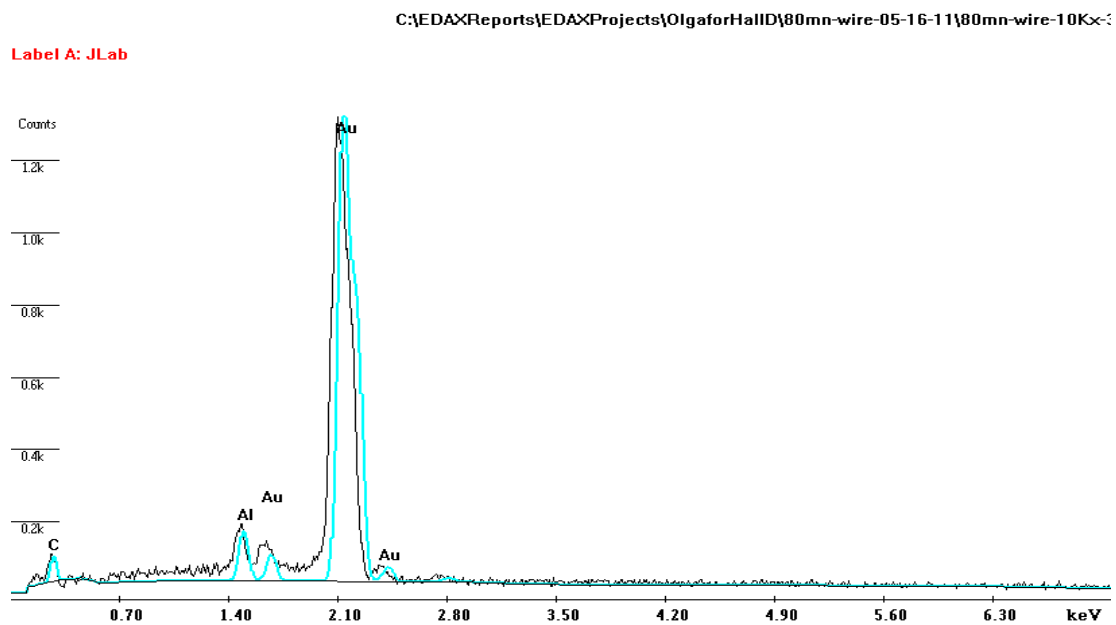
Pic3. Corresponding EDS spectrum. Carbon peak is close to noise level. Beam energy – 50KeV, filament current – 10μA.



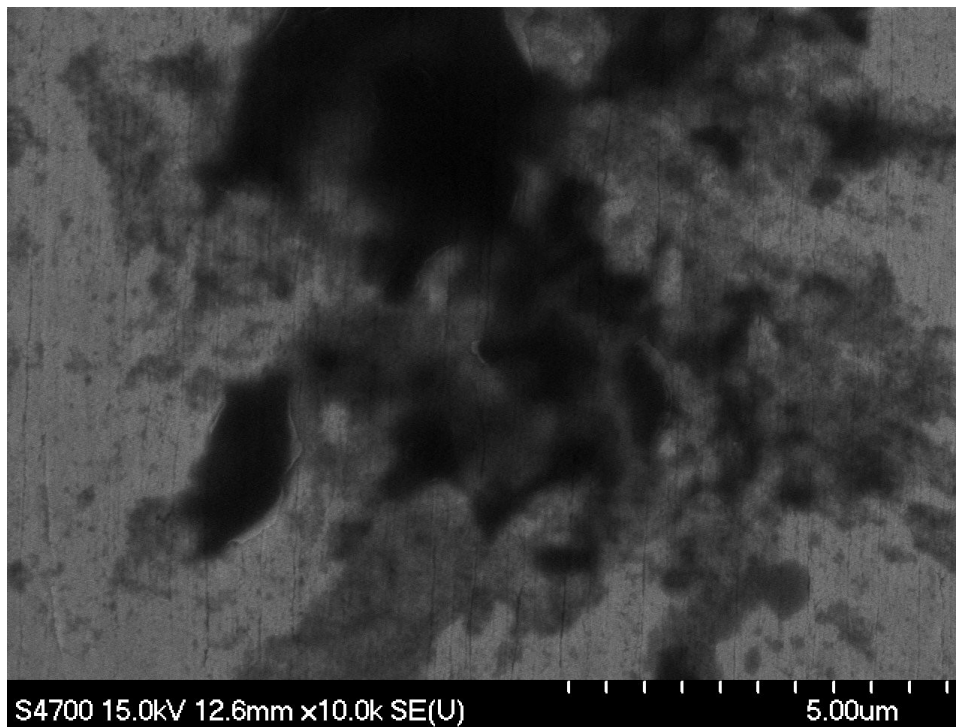
Pic4. General view of contaminated area. Magnification 2Kx. Darkened area is where EDS scan was taken.



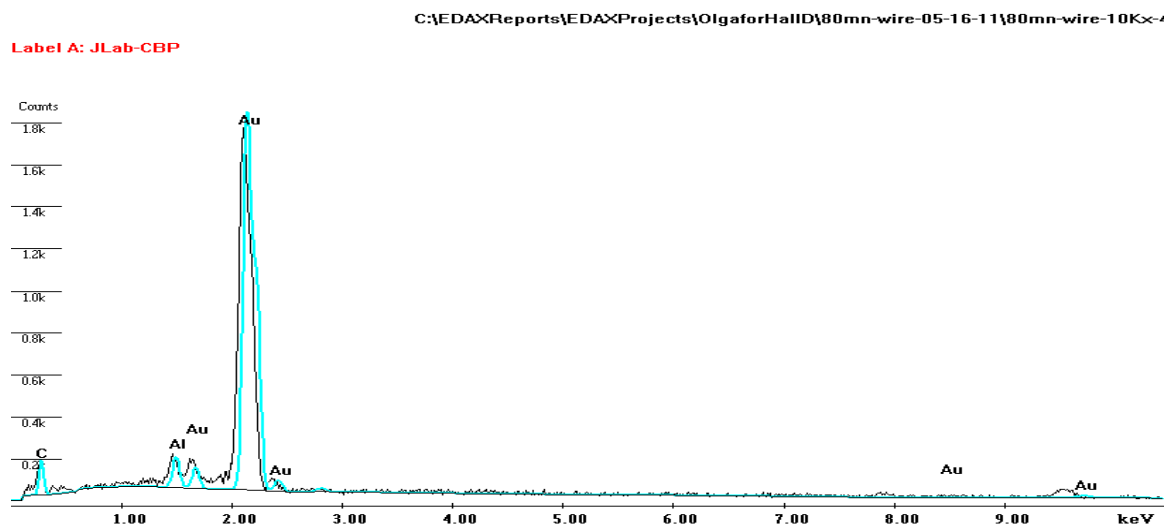
Pic5. Corresponding EDS spectrum, mag. 10Kx. Carbon peak is pronounced.



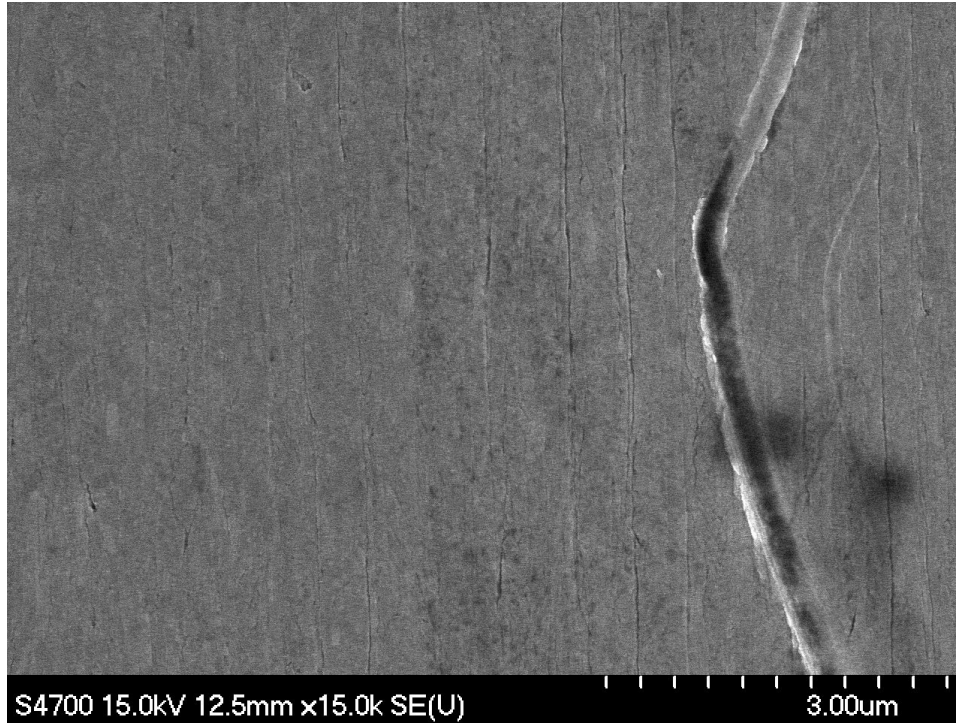
Pic6. Another contaminated area at 10Kx magnification.



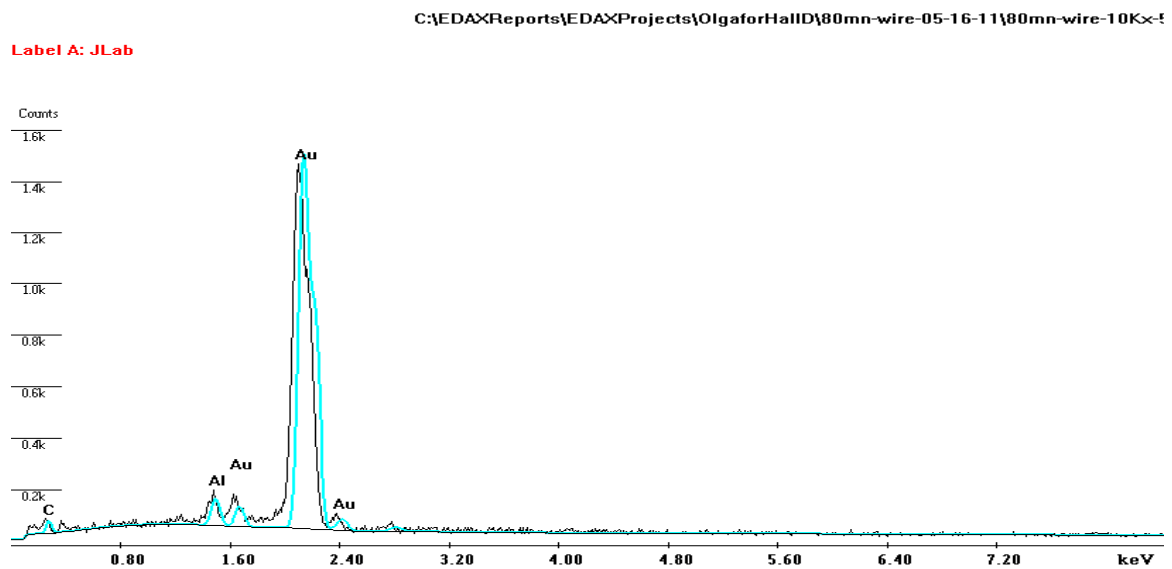
Pic7. Corresponding EDS spectrum, mag. 10Kx. Carbon peak is pronounced.



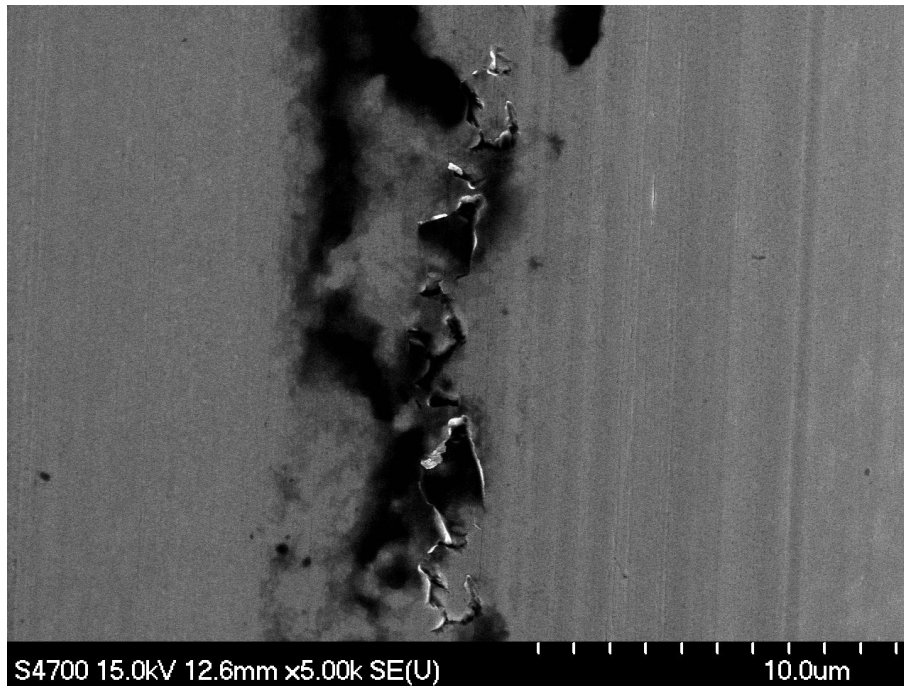
Pic8. Magnification 15Kx. Contamination-free surface area. Surface detail.



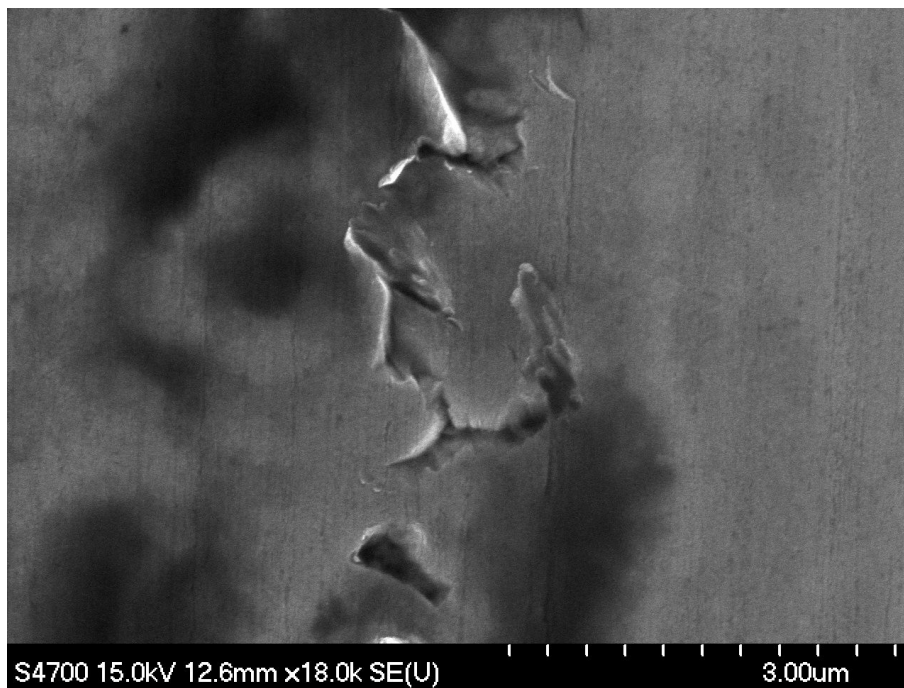
Pic9. Corresponding EDS spectrum, mag. 10Kx. Carbon peak is at noise level.



Pic10, pic11. Detailed view of some contaminated areas.

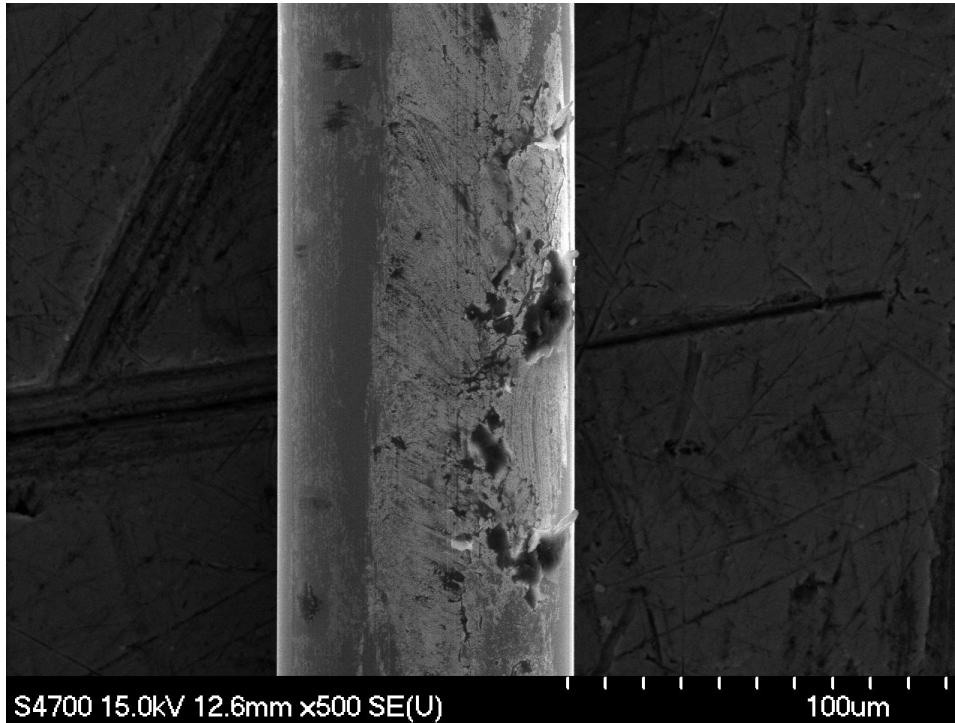


Magnification 5Kx.

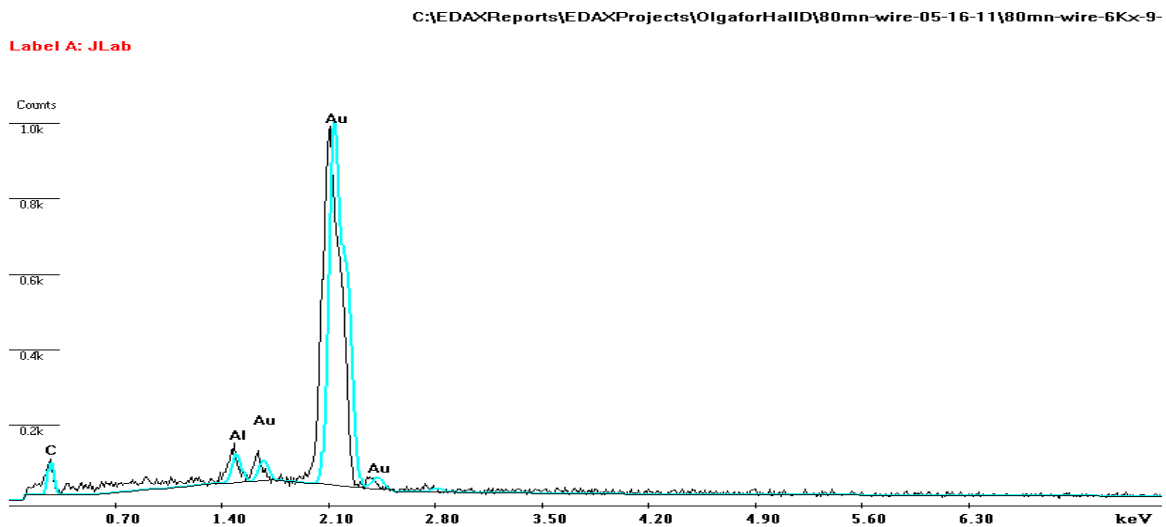


Magnification 18Kx.

Pic12. General view of contamination on wire at low magnification (500x).



Pic13. EDS spectrum of contaminated part of the surface , mag. 10Kx. Carbon peak is pronounced.



I have not observed any anomalies apart from the contamination of most probably environmental origine at given wire samples.