



מכון אילזה כ"ץ למדע וטכנולוגיה בתחום הננומטרי  
Ilse Katz Institute for  
Nanoscale Science and Technology

***XPS/AEA surface  
analysis Report for  
UNIQA DENTAL  
23.02.2023***

## XPS analyses of the samples.

### Samples:

**S1: USI-3710 LH0205**

**S2: USI-3710D LH0205**



### Experimental

For surface analysis Thermo Fisher ESCALAB X<sup>i+</sup> apparatus with basic pressure  $2 \times 10^{-9}$  mbar was used. For XPS measurements the samples were irradiated with monochromatic Al K $\alpha$ , 1486.6eV X-rays. The X-ray beam size was 500  $\mu$ m. Survey spectra was recorded with pass energy (PE) 200eV and high energy resolution spectra of Ti2p was recorded with pass energy (PE)20eV. The AVANTAGE software was used for data acquisition and analysis. The elemental composition of the surfaces was determined. The atomic concentrations were calculated using elemental sensitivity factors without applying any standardization procedure.

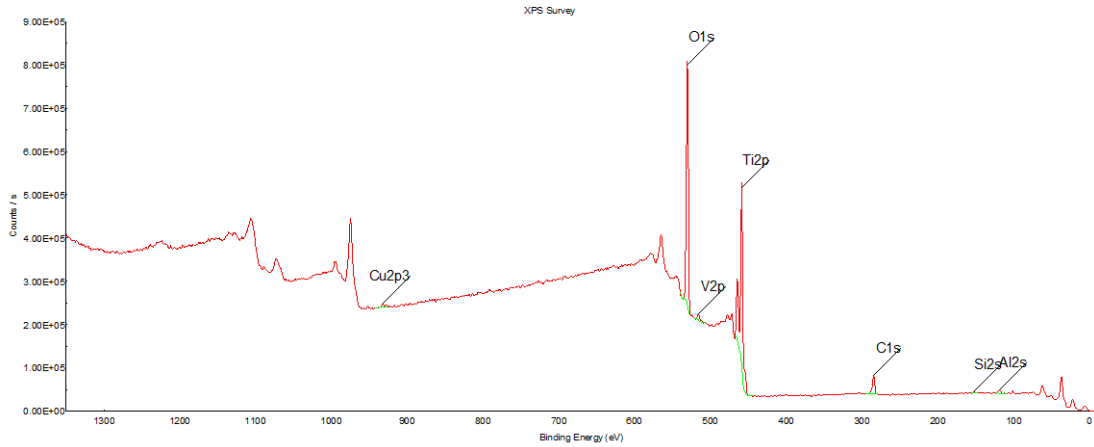
**Table 1 Elemental composition of the surface for the corresponding samples**

Sample	Element content at%						
	Ti	V	Al	O	C	Si	Cu
<b>S1 USI-3710 LH0205 Point 1</b>	25.21	0.56	3.22	56.98	13.17	0.58	0.29
<b>S1 USI-3710 LH0205 Point 2</b>	24.74	0.52	2.98	56.15	14.39	0.96	0.26
<b>S2 USI-3710D LH0205 Point 1</b>	25.22	0.42	2.93	57.15	13.34	0.78	0.16
<b>S2 USI-3710D LH0205 Point 2</b>	24.93	0.37	2.66	55.35	15.64	0.82	0.23

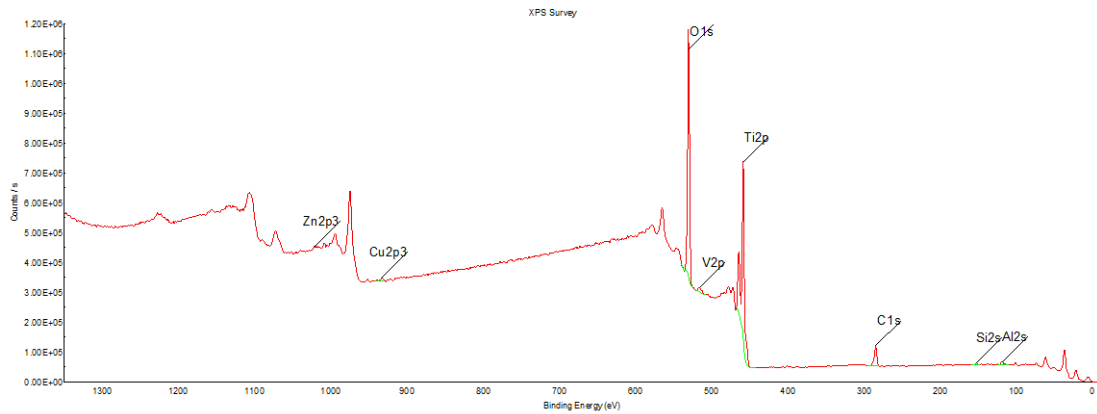
XPS Survey spectrum measured from the area up, middle, and flat down areas of the surface of the samples in the as received state.

For clarity of the figure, only main XPS lines are indicated.

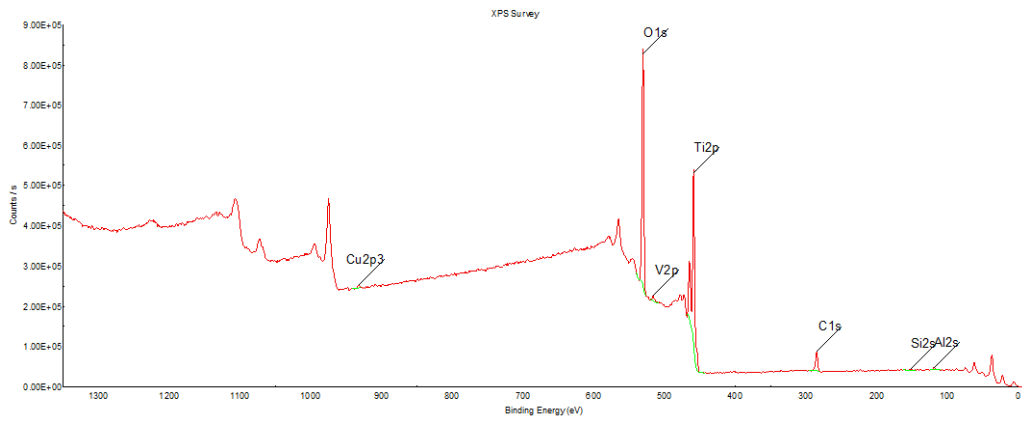
### S1 USI-3710 LH0205 Point 1



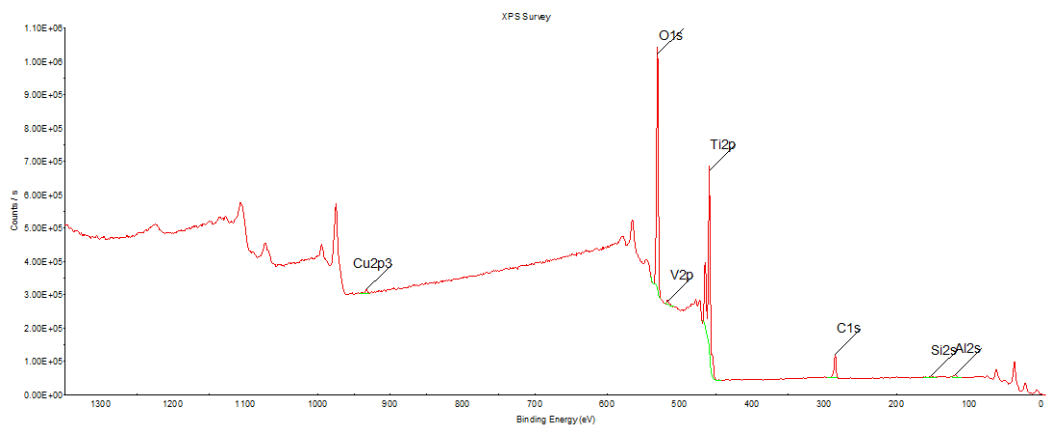
### S1 USI-3710 LH0205 Point 2



### S2 USI-3710D LH0205 Point 1



### S2 USI-3710D LH0205 Point 2



The test was conducted by:

Lab Manager

Dr. N. Froumin

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