Supplementary Information

to

Rearrangement/fragmentation reactions of oligosilanes with aluminumchloride

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Analysis depth for EDXS (energy dispersive X-ray spectrometry) in the SEM (Scanning Electron Microscope)

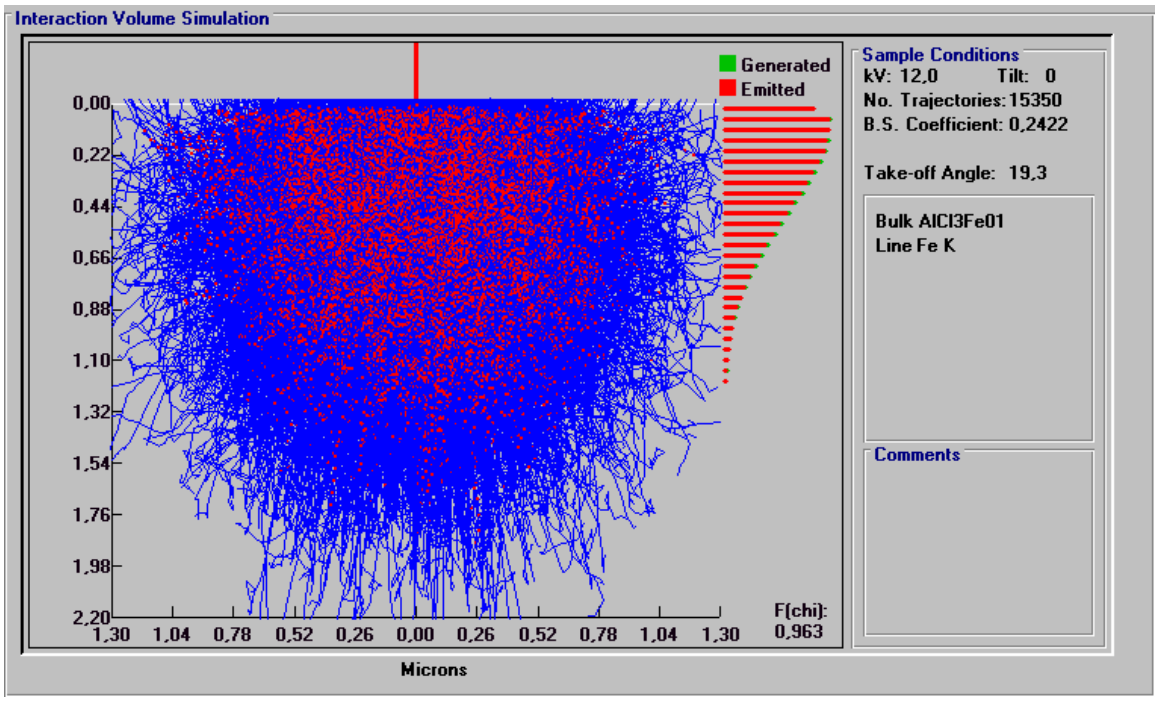

Fig. S1: Simulation showing both the penetration depth of electrons in $AlCl_3$ with a small amount of Fe and the intensity of the Fe-K X-ray signal as a function of depth. The blue lines represent the electron trajectories, the red points are the spots, where Fe-K X-ray quanta are generated. The distribution of these spots shows also the size of the analysis volume in case of a point analysis. The bar chart at the right shows the intensity of the X-ray signal as a function of depth. A density of 2.4 g/cm³ was assumed for the material. Thus, for the microscope parameters used, the bulk of the Fe X-ray signal emerges from a layer with a thickness of around 0.8 µm. For the simulation the program "Electron Flight Simulator", Version 3.1-E from Small World was used.

Sample: $AlCl_3$ - $FeCl_3$ (3%) refluxed in cyclohexane

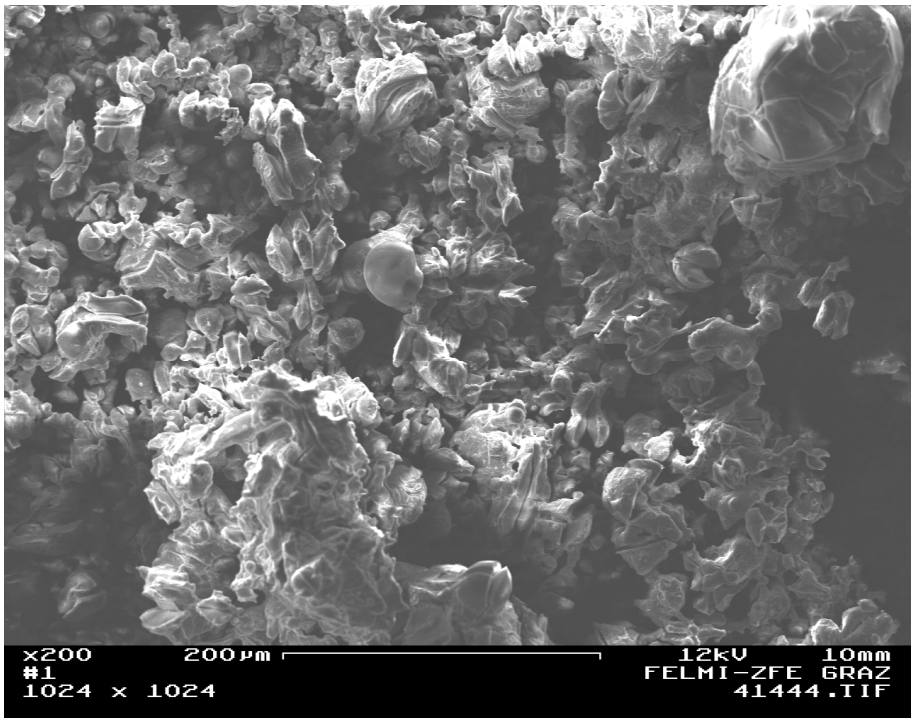

Fig. S2: Secondary electron (SE) image (topography contrast)

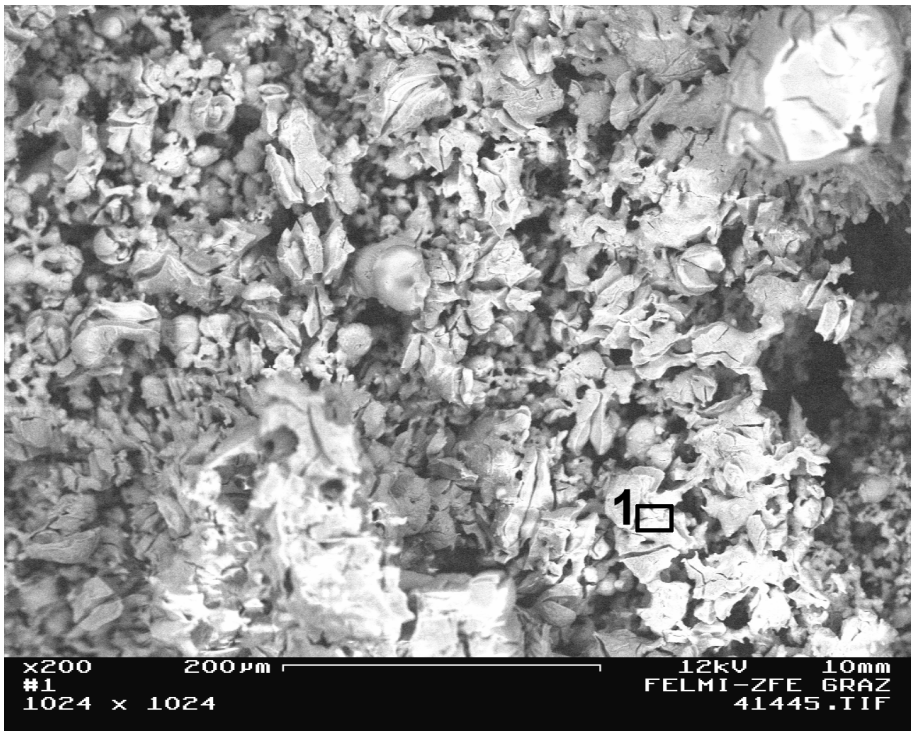

Fig. S3: Backscattered electrons (BSE) image (material contrast), same area as Fig. S2

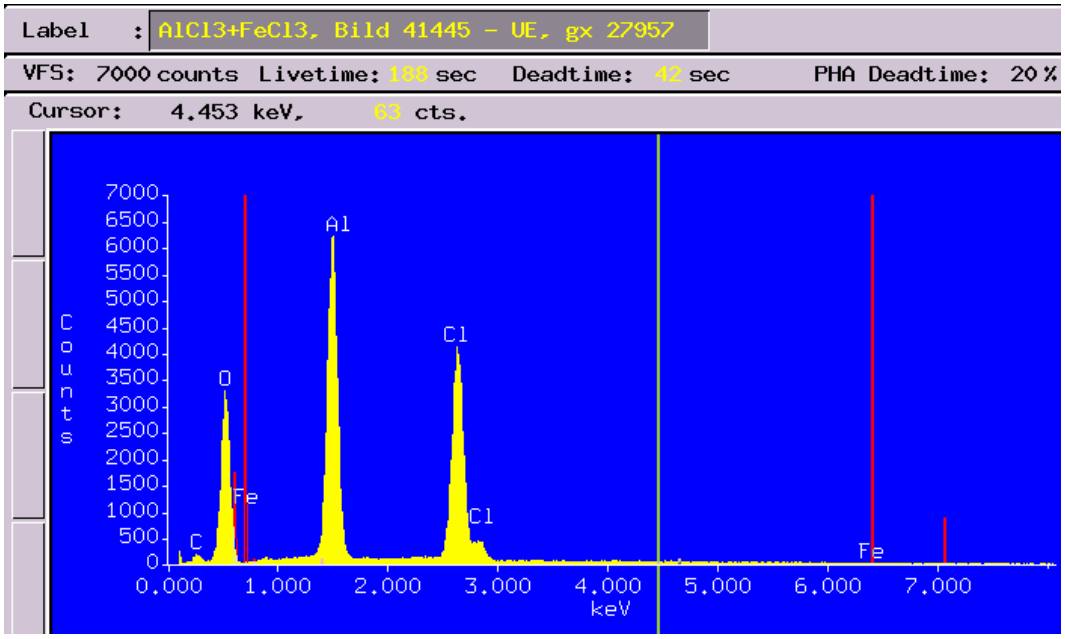

Fig. S4: EDX-spectrum, overview of Fig. S3

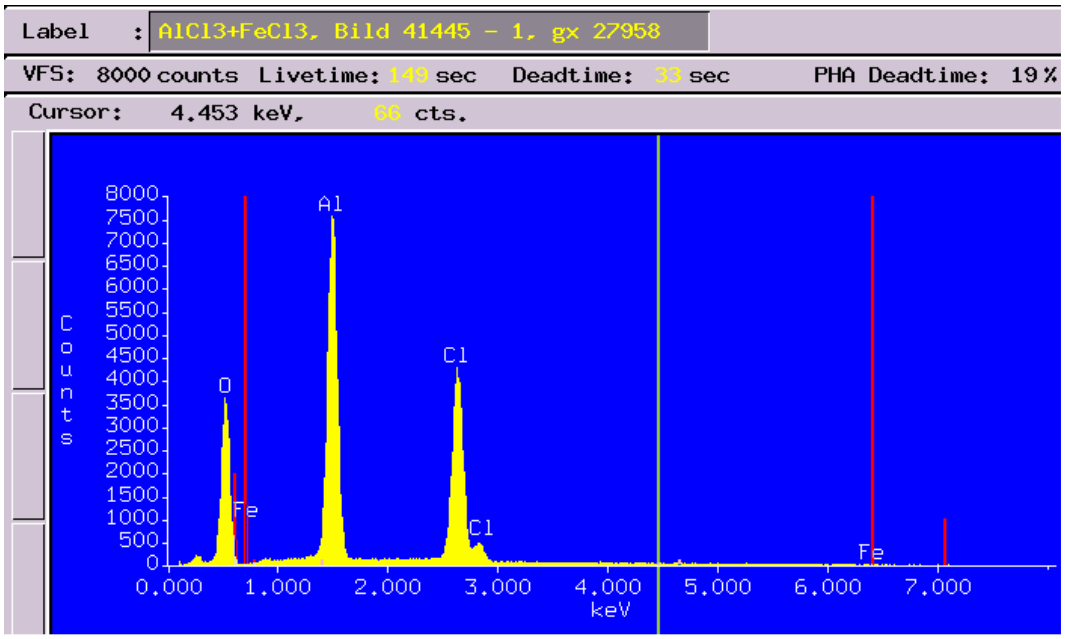

Fig. S5: EDX-spectrum, region 1 of Fig. S3

Remarks:

*) Within detection sensitivity (0.1 wt%) **no** iron could be observed. The red lines of Figs S3 and S4 mark the exact position of the iron X-ray peaks.

*) The differences in contrast in the BSE picture are mainly caused by different ratios of Al, Cl and O and to some minor extent by topography and electric charging caused by the irradiation with the electrons.

*) The high oxygen peaks are likely caused by reaction of the sample with moisture. In this preliminary investigation no transfer system was used, thus the sample was exposed to ambient conditions for about one minute. However, some oxygen was also found in the sample which was transferred from the glove box under exclusion of air into the microscope by use of a transfer system.