

s5.m1.p5 The ELECTRON CRYSTALLOGRAPHY FORUM – A new Corner for Electron Crystallographers at the Web. T.E. Weirich¹, K. Gjønnnes², J. Jansen³, U. Kolb⁴.

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Keywords: electron crystallography, mineralogy, web.

A web-site maintained by members of the special interest group (SIG) on Electron Crystallography of the ECA was recently installed. This new site, the ELECTRON CRYSTALLOGRAPHY FORUM, aims to meet two principal demands.

The ELECTRON CRYSTALLOGRAPHY FORUM intends to inform about upcoming events, to present relevant and up to date information from both disciplines electron microscopy and crystallography and it will keep the growing community of electron crystallographers in Europe in touch with the activities of the SIG.

Another major reason to launch this site was to give more practical support for scientists who want to use a particular method for structure determination from electron microscopy data. Several subsections were created for this purpose which contain basic descriptions and tutorials for different electron microscopy techniques, references to key-literature, computer programs and databases. For example the literature section of the current version (April 2000) of the ELECTRON CRYSTALLOGRAPHY FORUM includes already more than 100 articles about electron crystallography in general and how different electron microscopy techniques can be employed for determining the structure of biological, inorganic and organic materials. Another highlight that will be realized in the near future is a database which allows the user to submit and download electron microscopy images and various data from electron diffraction.

The ELECTRON CRYSTALLOGRAPHY FORUM is available at <http://www.tu-darmstadt.de/sig-ec/>

s5.m1.p6 Study of morphology of crystals of synthetic mullite. E.G. Iarotskaia, E.V. Polianski, I.P. Hadgy, Russian Research Institute for the Synthesis of Minerals, Alexandrov, RUSSIA.

Keywords: mullite, habitus, electronic microscopy.

The present paper describes the results of the preparation of synthetic mullite and the electronic microscopy studying his crystals. The composition of synthetic mullite is $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$. It is obtained from the system $\text{Al}_2\text{O}_3 - \text{SiO}_2 - \text{AlF}_3$. The synthesis takes place in solid state with the participation the vapour and liquid phases. For the purpose of increasing the efficiency of the process the components were preliminary ground and mixed. The mixture was sintered in the temperature range of $1000 - 1100^\circ\text{C}$ for several hours with using the open alundum crucibles. The resulting product have been studied by the electronic microscopy (JEM - 6A) using various diffraction techniques including diffraction contrast. The samples were studied in the range of the magnification $2\,000 - 30\,000$. It is determinated that the crystal morphology depends on the quantity of the fluoride in the starting mixture and the temperature of the synthesis. The synthetic mullite is observed in the form of the elongated crystals with the needle-shaped aspect. The crystalline habitus is characterized by mainly (110), (010), (100) facets. It is noted the temperature influence upon the habitus of the crystal. The thin crystals were synthesized at the low temperatures only. They have the smoother surface. The mullite has unique properties. It is highly effective filler of the rubber, the polymeric compositions for the preparation of the dielectric film materials. This material is needed for many scientific and technological applications.