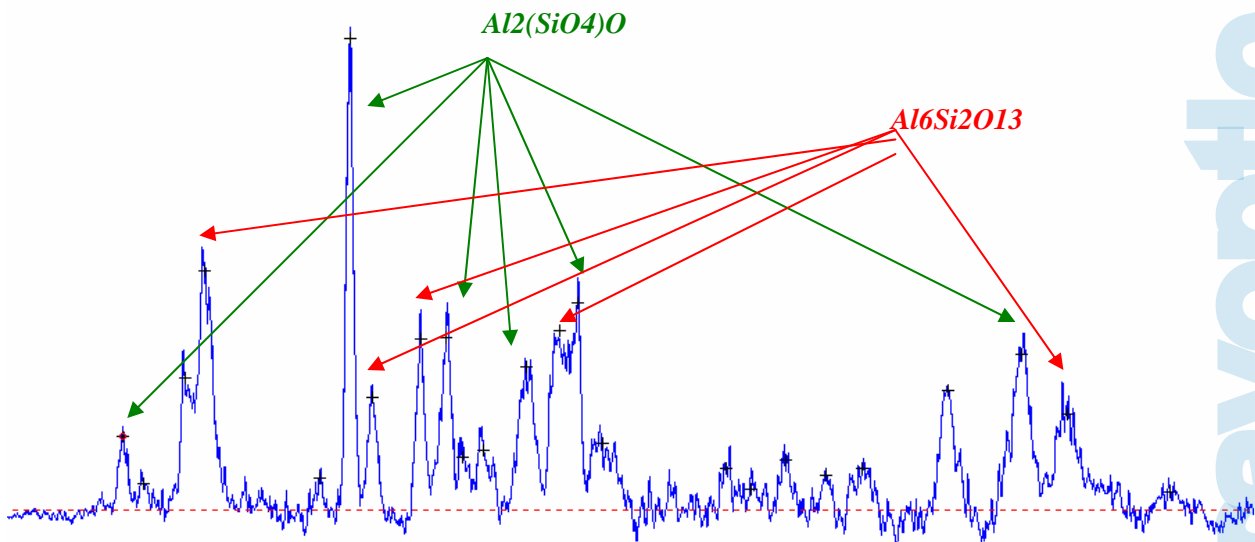


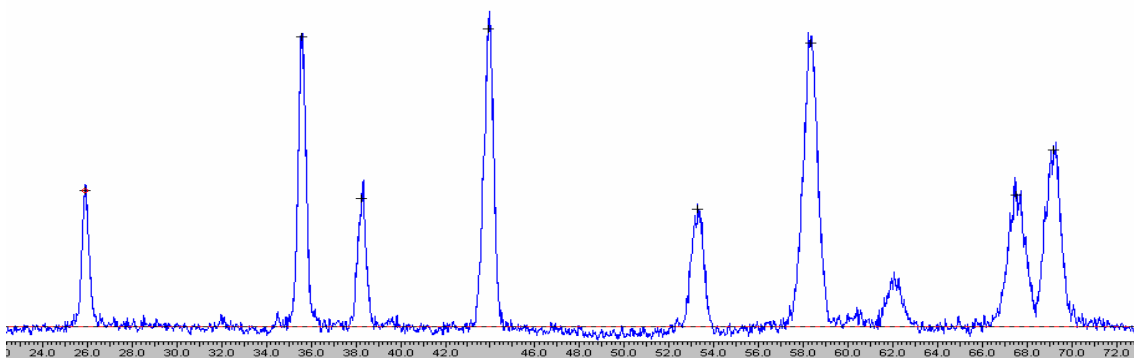
Aluminosilicate-Based Heat-Resistant Ceramics

Modern heat-resistant materials should retain their chemical, physical, and mechanic properties at high temperatures; do not interact with electric heaters, gas medium of furnaces and materials heated there - metals, alloys, and slag. Oxide heat-resistant ceramics have advantages compared to other types of refractory materials. It is manufactured by traditional powder metallurgy methods. The input raw materials are thoroughly milled, mixed, plasticized, pressed, baked (annealed) at high temperature, and blanks are formed at high temperature. In the course of ceramics manufacture, it is necessary to monitor the technological process both at intermediate stages and at the final stage.



Phase composition of ceramics based on natural aluminosilicates after annealing. Andalusite ($Al_2(SiO_4)O$), mullite ($Al_6Si_2O_{13}$), and a small quantity of corundum (Al_2O_3) are observed.

Manufacture of corundum-based ceramics for chip resistors



Diffractogram of corundum typical for pressed ceramics used for chip wafers.