Aluminum scraps collected from local workshop, were used as electrode to electrolyze distilled water at different pH. A mixture of gibbsite, boehmite, bayerite and a little diaspore were precipitated. Subsequent heating of this mixture of compounds, results in the formation of different phases of aluminum oxide, namely α (corundum), δ, γ and θ, depending on pH and temperature. If the pH is about 9, a mixture of predominantly nano δ and θ phase result at 900°C. As the temperature is further raised, predominantly θ-phase is produced at 1100°C. On the other hand, if the pH is around 4, micro-meter sized α-phase predominates.

![Figure 1](image-url)