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Removal of Barrier Oxide in the Anodized Aluminum Oxide Nanotemplates

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Aluminum as other valve metals possesses an important feature: it can form on the surface a porous structure –aluminium anodized oxide (AAO), under proper anodization conditions (voltage, pH, temperature, and etc). In order to be used as a template obtained AAO should undertake the barrier oxide removing step, which will ensure the appropriate electrical contact for material deposition. Thus, in this study we show the simple and unique method for barrier oxide thinning/removing by anodizing solution itself, in comparison with conventional procedure used. The more precise control of barrier oxide removing/thinning was achieved in the same solution used as for anodisation, but at the temperature of 50 °C.