

## Synthesis of BaTiO<sub>3</sub> powder coated with Y<sub>2</sub>O<sub>3</sub> and MgO

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Y<sub>2</sub>O<sub>3</sub> and MgO are well-known additives to BaTiO<sub>3</sub> powder for MLCC application. A nano-coating process was investigated to produce Y<sub>2</sub>O<sub>3</sub> and MgO shell layer onto BaTiO<sub>3</sub> core powder. Coating reaction routes were examined to find out that yttrium nitrate-urea system and magnesium ethoxide-water system worked out very well, if not the best. The core-shell morphology was characterized using SEM and TEM whereas the composition of shell layer was determined via ICP-AES and XRF. The composition of Y<sub>2</sub>O<sub>3</sub> and MgO shell layer was rather easily controlled by adjusting initial amounts of reactants.