

Characterization of the Defects found in Gold Decoration Layer of Bone China

C. S. Yoon and C. K. Kim

Department of Materials Science and Engineering, Hanyang University, Seoul, Korea

We have investigated the microstructure of the surface decoration layer of bone china products to pinpoint the cause of the defects occurring in the process of high quality bone china manufacturing. Through the cross-sectional TEM (Transmission Electron Microscope) analysis it was observed that SnO₂ crystals from the matting agent that lies underneath the gold layer have undergone abnormal grain growth. As the SnO₂ crystals under the gold layer grew excessively, the matting oxide burst through the gold layer resulting in the rupture of the gold decoration layer on top. Thus TEM study revealed the source of the defects and suggested that the controlled growth of the SnO₂ crystals should reduce the observed defects.