

## Striation of YBCO Coated Conductors by Photolithography Process

Byeong-Joo Kim<sup>\*</sup>, Sang Beom Byun, Byung Wook Han,  
Kyeongdal Choi, Hee-Gyoun Lee and Gye-Won Hong  
*Korea Polytechnic University, Siheung-si, Gyunggi-do, Korea*

Filamentation of coated conductor with silver stabilizer layer has been performed by a photolithography process in order to reduce AC loss of YBCO coated conductor. A negative type photo resist polymer thin film was laminated on a coated conductor with silver top layer. Patterns were created on polymer films by exposing UV light (380 nm) onto photo mask. Patterned polymer film was obtained via development process by etching using 1% Sodium carbonate( $\text{Na}_2\text{CO}_3$ ) solution. The silver layer was etched off using mixed solution of hydrogen peroxide ( $\text{H}_2\text{O}_2$ ) and potassium cyanide (KCN) and YBCO layer were etched off using 3% hydrochloric acid (HCl) solution. Remaining photo resist was striped off using acetone. YBCO films were successfully patterned with a filament width of 900 microns and a filament spacing of 100 microns. Microstructure and electrical characteristics of patterned coated conductor will be presented.

Keywords : YBCO, coated conductor, photolithography, patterning