

# Improvement of Smoke Removal Efficiency of Innovative Paper Filter

Young-Hoh Kim, Chung-Ryul Kim, Jong-Yeol Kim,  
Chang-Ho Shin and Young-Taek Lee  
*Korea Ginseng & Tobacco Research Institute*

The performance of paper filters is mainly dependent on the grammage, bulk density, crimping type, roughness as well as on the specific surface area( $m^2/g$ ) of the raw paper material. Although high smoke removal efficiencies of paper filter have been known for many years, the removal efficiency available has not been sufficient to enable designing ultra low tar and nicotine cigarette. Therefore, this project was initiated to improve the ability of tar removal for less harmful cigarette. The specific objective was to provide a means of dry type crimping and reasonable mixed pulp fibers, Aracruz for NBKP and Cariboo for LBKP.

To accomplish this objective we had to determine the tar removal efficiency by CORESTA method under restricted conditions. Cigarette filter tips were prepared from those dry crimping paper with new mixed pulp fibers and tar and nicotine retentions measured. This data was compared with corresponding figures obtained from commercial wet type crimping paper filter. From the information obtained, It was determined that innovative paper filter reduced the delivery of tar in cigarette smoke by as much as 9%. The tar retention of the paper filter was also found to depend on the crimping index(CI) of their manufacturing.