Abstract
In this study, the effects of the performance of air nozzles called jetring, which can be connected to a conventional ring spinning machine, over the yarn hairiness values were investigated. To determine the lowest yarn hairiness value, experimental and statistical studies were carried out on various nozzle structural parameters. The response surface methodology was used to optimize the yarn hairiness value. In the experiment, 100% cotton Ne 30/1 yarns were produced. In all jetring yarn productions, the air pressure was kept at 125 kPa (gauge). Hairiness results were analyzed using ANOVA in the Design Expert 11.0 program. Nozzle structural configuration that provided the lowest yarn hairiness according to the statistical model was as follows: twisting chamber diameter Ø2 mm, injector diameter Ø0.5 mm and injector angle 35° as determined. Ne 30/1 100% cotton yarns produced with this nozzle structural configuration, yarn hairiness values were reduced by 12%.