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Stabilizing layer of YBCO(Yttrium Barium Copper Oxide) thin-film superconducting wire consists of a metal thin film. The metal thin film used there is deposited using silver (Ag) metal. The Ag thin film is characterized by protecting the superconducting layer and changing the electrical characteristics of the YBCO thin-film superconducting wire. Therefore, if a process for easily depositing an Ag thin film layer of a commercial YBCO thin film wire rod is established, various characteristics of the YBCO thin film superconducting wire material can be changed, and diversification of the application field can be sought. In this paper, to increase the thickness of the Ag layer of the YBCO thin-film superconducting wire, the surface of the existing Ag layer was subjected to Sputter surface treatment and deposition process. The sputter surface treatment proceeded at 5 minutes, 10 minutes, 20 minutes, 25 minutes, and 30 minutes, respectively, and then contact angle analysis was performed. From the test results, the surface contact angle tends to decrease when the sputter surface treatment is performed from 0 minutes to 20 minutes, and then tends to increase. As a result of the thickness analysis by FESEM after deposition, it was confirmed that the increase of the deposition amount and the decrease of the excitation were observed at the time when the surface contact angle was lowered.