Characteristics of Solution Spray by Ultrasonic Spray Nozzle

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Viscosity of spray solution is the important factor in designing the ultrasonic spray nozzle. In this study, flux solution with 10cP viscosity was sprayed using 40KHz ultrasonic spray nozzle. During spraying, variation of coating width depending on flow rate, ultrasonic power, nozzle height, air pressure and moving speed was monitored. When, using water, the coating width was increased to 14~29cm, 27~34cm, and 23~34cm with increasing the input flow rate 5~40ml/min, the ultrasonic power 10~85W, and nozzle height 15~35, respectively. Then coating width was decreased to 42~37㎝ with increasing the air pressure in the range of 500~900㎜H2O. When using flux solution, coating width was increased to 10~23㎝, 25~32㎝, and 20~30㎝ with increasing the input flow rate in the range of 5~40ml/min, the ultrasonic power 45~85W, and the nozzle height 15~35㎝ respectively. Air pressure and moving speed had no significant effect on coating width.