전자 소자 프린팅을 위한 롤 투 롤 프린팅 장비 개발

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Development of Roll-to-Roll Printing System for Printing of Printed Electronics

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Key Words: Printing(프린팅), Roll-to-Roll(롤 투 롤), Printed Electronics(인쇄 전자 소자).

Abstract : Manufacturing of printed electronics using printing technology has begun to get into the hot issue in many ways due to the low cost effectiveness to existing semi-conductor process. This technology ,with low cost and high productivity, can make it possible to produce printed electronics(sensors, simple circuit, LCD color filter, RFID antenna, OLED, and so on). In this paper, the roll-to-roll printing system under development for printing of printed electronics is presented. The system consists of winder/ rewinder, two printing units, dryer units, guiding unit, vision system, and other auxiliary devices. For testing of multi-layer printing, the system was designed to be capable of printing two different materials from each printing unit using gravure-offset printing method and have a function of alignment of two printed materials.

간극조절 및 고온구동 가능한 DoD 인젝터

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gap-adjustable and high-temperature-applicable DoD injector

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Key Words: Printing(프린팅), Injector(인젝터), DoD Injector (DoD 인젝터), Inkjet(잉크젯)

Abstract : Inkjet printing technology has drawn spotlights in many ways due to the superior price competitiveness. This paper introduces a newly devised gap adjustable DoD injector which can be applicable to dense and high-temperature-melting materials. The design on the gap adjustable DoD injector for precise control of the size and spacing of the injected metal droplets is discussed in detail. The effect of design parameters on droplet size was analyzed. Finally, the gap adjustable DoD injector was fabricated and its performances were tested with varying the gap distances. The droplet characteristics are measured in view of precise droplet controllability and productivity.