

Wiping out the coffee-ring effect advances inkjet printing of electronic circuits

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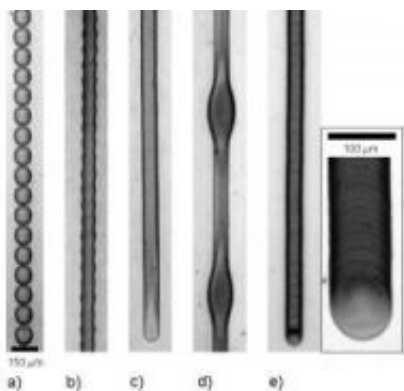


Figure 2. Examples of principal printed line behaviors: a) individual drops; b) scalloped; c) uniform; d) bulging; and e) stacked coins. Drop spacing decreases from left to right.

Examples of printed line behaviors from inkjet printers: (a) individual drops, (b) scalloped, (c) uniform, (d) bulging, and (e) stacked coins. Credit: Courtesy of the American Chemical Society

Researchers in California report a key advance in efforts to use inkjet printing technology in the manufacture of a new generation of low cost, high-performance electronic circuits for flexible video displays and other products. Their study, which describes development of a new method for producing straighter, uniform circuits using inkjet-printing, is scheduled for the March 4 issue of ACS' *Langmuir*.

In the report, Dan Soltman and Vivek Subramanian note that inkjet-printed circuits must be extremely smooth and straight. That difficult

feat has been elusive because the drop-by-drop nature of inkjet-printing often leaves uneven printed features on surfaces, especially a circular pattern known as the “coffee ring” effect, they note.

The scientists describe a new way to optimize printing conditions to eliminate the coffee-ring effect and produce smooth, narrow lines with an even edge. The development demonstrates the feasibility of tuning and optimizing inkjet technology for microelectronic applications, they say.

Source: ACS

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