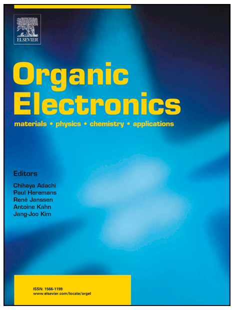


Enhanced performance and reliability of organic thin film transistors through structural scaling in gravure printing process

Jaemin Kim, Daehwan Chae, Wi Hyoung Lee, Janghoon Park, Jaehak Shin, Byeong-Chan Kown, Sunglim Ko

PII: S1566-1199(18)30203-9

DOI: 10.1016/j.orgel.2018.04.039

Reference: ORGELE 4647

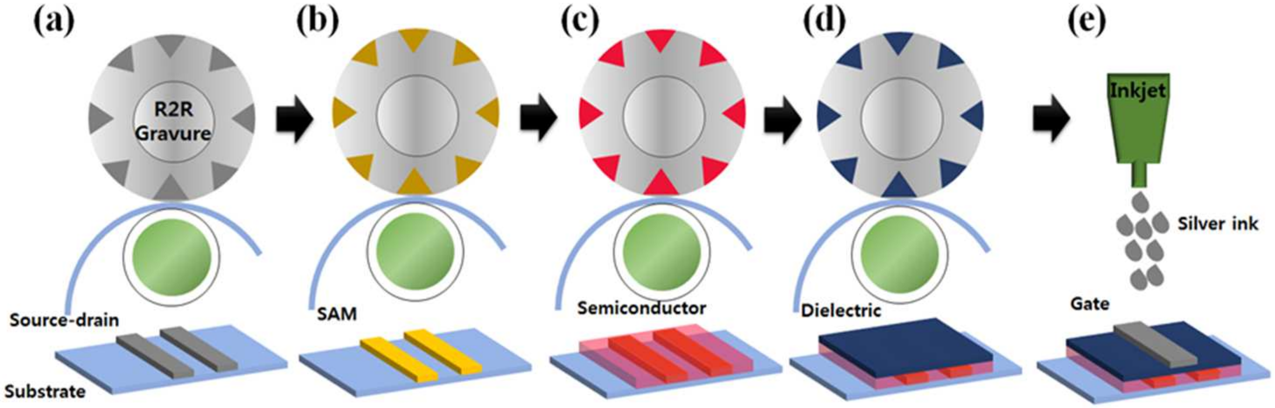
To appear in: *Organic Electronics*

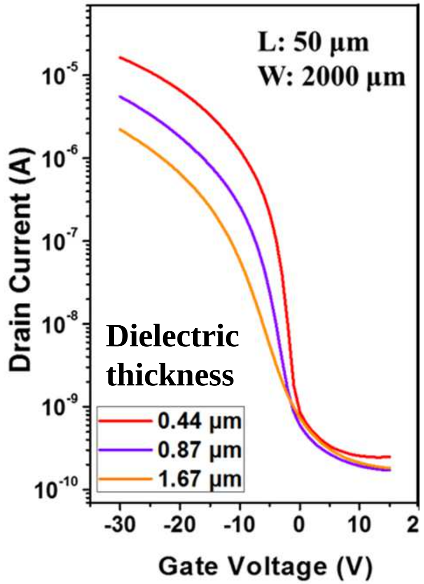
Received Date: 22 January 2018

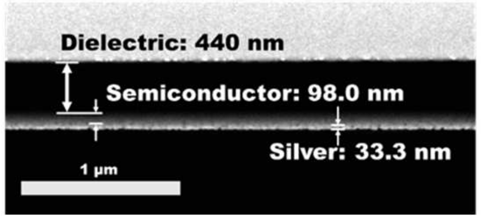
Revised Date: 11 April 2018

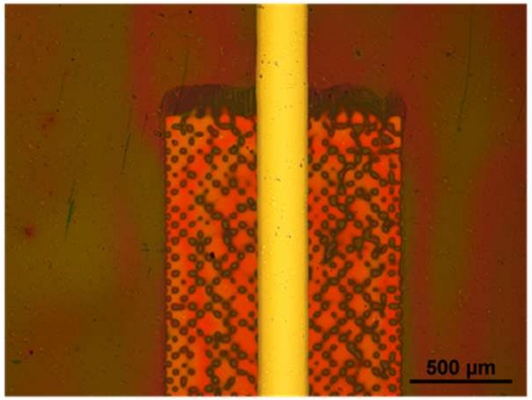
Accepted Date: 23 April 2018

Please cite this article as: J. Kim, D. Chae, W.H. Lee, J. Park, J. Shin, B.-C. Kown, S. Ko, Enhanced performance and reliability of organic thin film transistors through structural scaling in gravure printing process, *Organic Electronics* (2018), doi: 10.1016/j.orgel.2018.04.039.


(a)
(b)
(c)
(d)
(e)
R2R Gravure
Inkjet
Silver ink
Source-drain
Substrate
SAM
Semiconductor
Dielectric
Gate


L: 50 µm
W: 2000 µm
Dielectric thickness
0.44 µm
0.87 µm
1.67 µm
Drain Current (A)
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
10^{-10}
Gate Voltage (V)
-30
-20
-10
0
10
2


Dielectric: 440 nm
Semiconductor: 98.0 nm
Silver: 33.3 nm
1 µm


500 µm