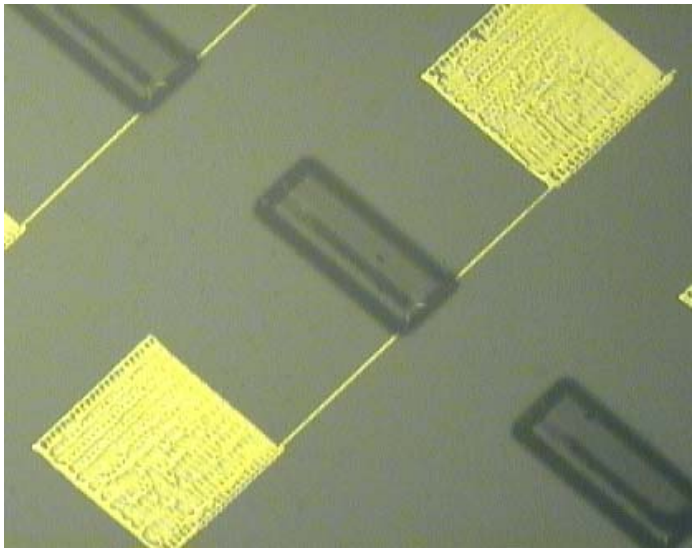
Low Voltage, Printed Transistors on Plastic Employing High Capacitance, Nanostructured Gate Dielectrics

Keun Hyung Lee, Timothy P. Lodge (PI), C. Daniel Frisbie (PI)
Department of Chemical Engineering and Materials Science, University of Minnesota

Investigation of electrical properties of an ion gel (a soft solid consists of ionic liquid and block copolymer) as a gate dielectric in order to improve transistor's functioning frequency.



- MAJOR OBSERVATIONS
  - Operating speed of a transistor is enhanced up to the kilohertz range by using ion gel gate dielectrics.
  - RC time constant of 2 μm thin ion gels reaches several μsec.