

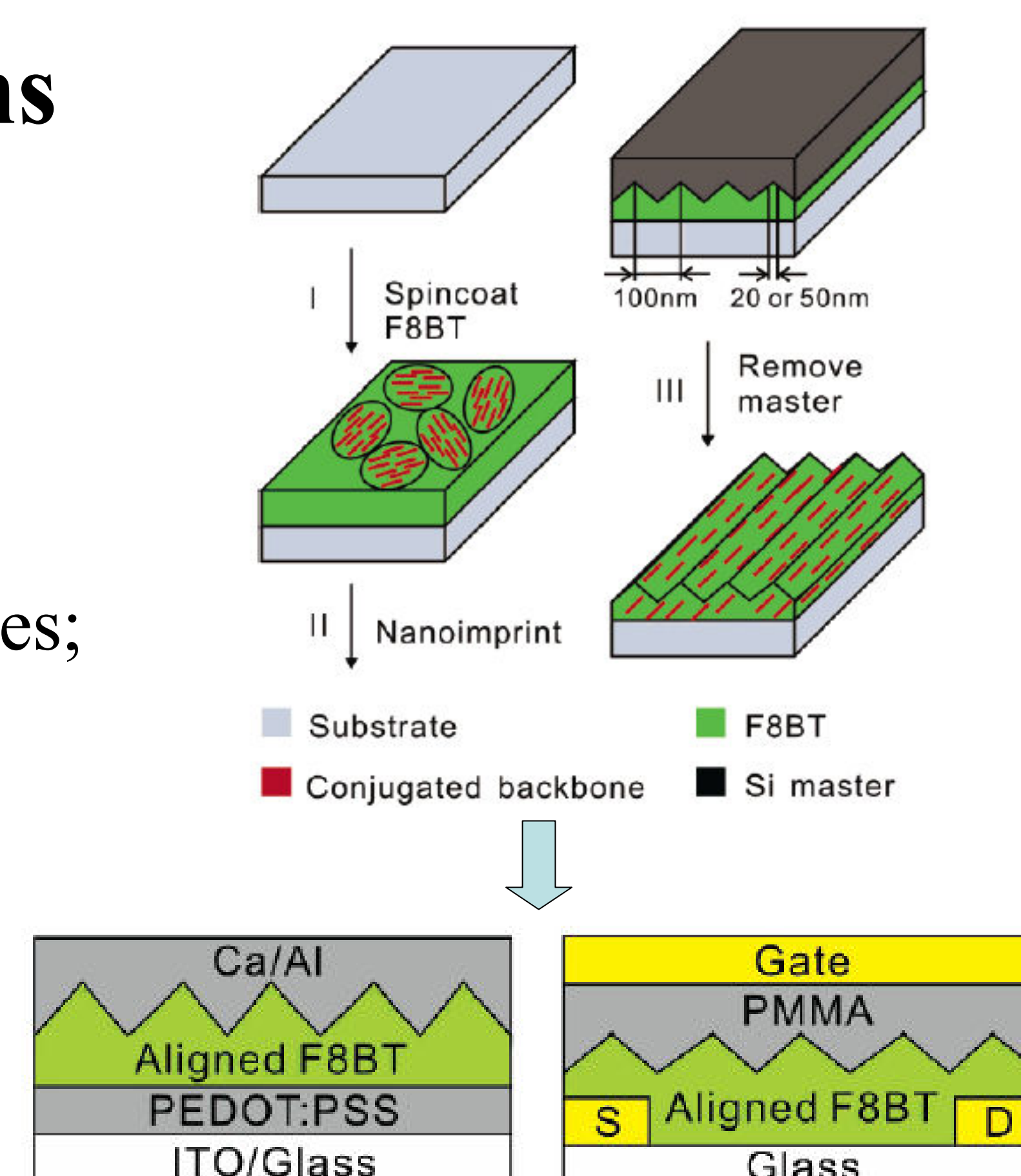
# Synthesis of light-emitting liquid crystal molecules

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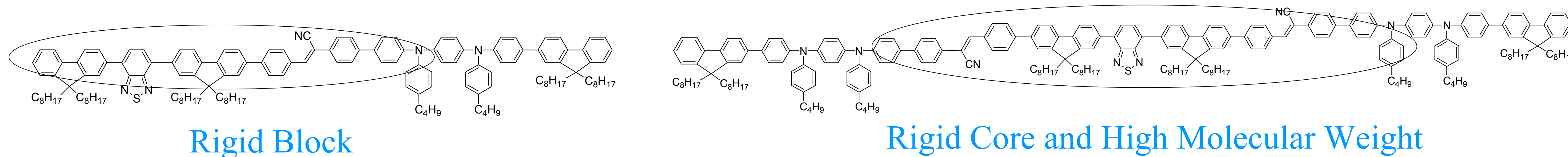
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## Introduction: Nano-confinement technique and applications

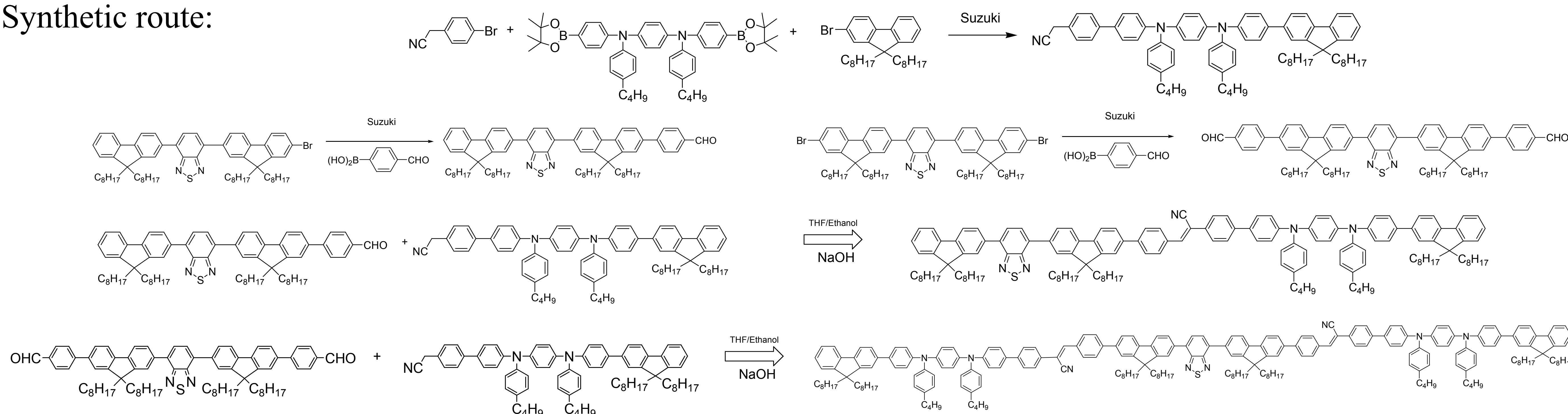
- Nano-confinement polymer devices<sup>1</sup>:
  - Polarized electroluminescence with a polarization ratio of 11;
  - Ambipolar PFET mobilities were improved 10-15 and 5-7 times for hole and electron transport, respectively, because of the alignment of the F8BT in devices;
- Advantages of small molecules for nano-confinement devices:
  - Faster movement than polymer at the same temperature;
  - Fixed and homogeneous molecular weight and molecular size;



## Synthesis of red light-emitting molecules for nano-confinement laser



Synthetic route:



## Conclusions:

- Di- and tri- block conjugated LC molecules were synthesized with molecular weight of 2028 and 3143, respectively;
- High quality spin-coated films can be obtained from these two intramolecular charge red light-emitting molecules;

Further reading: *Nano Letters*, 7, 987-992 ;