

The high resolution patterning of carbon nanomaterials by controlled surface energy

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Comparing with traditional coating technique, solution-based patterning method has its strength in process cost as it can be proceeded in room temperature and pressure condition. Because of its merits, solution-based patterning method has been actively exploited in various application such as field effect transistor, flexible transparent electrode, solar cell. However there are some drawbacks in these techniques: controllability of pattern thickness, high material consumption, extended process time. In our study, we design high speed, low cost, thickness controllable, solution-based patterning technique by controlling surface energy of substrate and demonstrate its application to electronic device. Furthermore we also study application for deposition of nano particles. Solution based metal deposition process is very competitive to currently used method vacuum based deposition in point of cost and processing time.