

NANO HIGHLIGHT

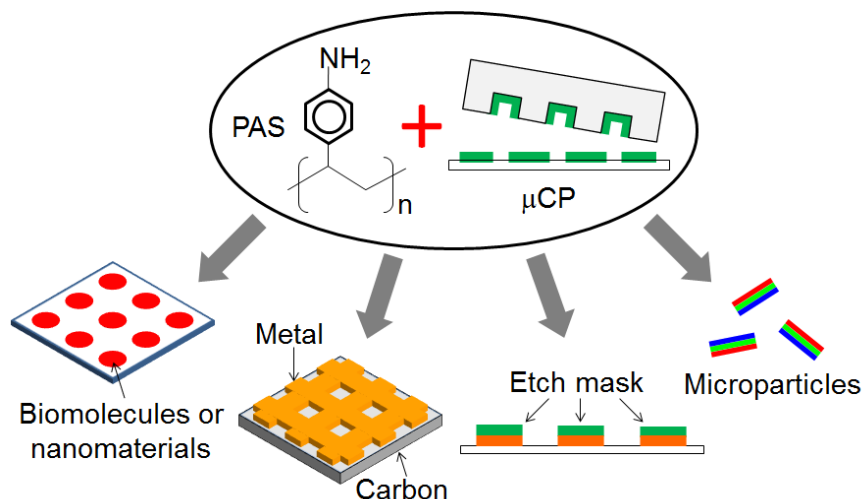
Versatile Surface Micropatterning and Functionalization Enabled by Microcontact Printing of Poly(4-aminostyrene)

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Microcontact printing (μ CP) of polyelectrolytes is a facile and powerful method for surface micro/nanopatterning and functionalization. Poly(4-aminostyrene) (PAS) is a polyelectrolyte that can be converted to aryldiazonium salt and exhibits pH-dependent hydrophobicity. As schematically shown below, we have demonstrated μ CP of PAS and the expansion of this technique in four directions. First, the microcontact-printed PAS can be diazotized to micropattern biomolecules including DNA and protein and nanomaterials including single-walled carbon nanotubes and gold nanoparticles. Second, the diazotized PAS enables μ CP of a metallic structure on a carbon surface. Third, the hydrophobic nature of PAS at the neutral pH allows the microcontact-printed PAS-based polyelectrolyte multilayer to be used as masks for wet etching. Lastly, this technique allows facile fabrication of highly engineered microparticles with a unique structure. Overall, this work has established a novel μ CP platform with various potential applications.



References

- [1] For further information about this project email <guan@eng.fsu.deu>
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