

DPN Publications by Application: 2010-2011

Protein Analysis & Printing
Cell Biology & Microenvironment
Biomolecules, Biomaterials & Biointerfaces
Sensor & Microstructure Functionalization
Nanofabrication & Nanomaterials
Tip-Based Nanofabrication: Theory, Tools, & Techniques

Protein Analysis & Printing

1. Bellido, E., R. de Miguel, et al. (2010). "Controlling the Number of Proteins with Dip-Pen Nanolithography." Advanced Materials **22**(3): 352-+.
2. Chai, J., L. S. Wong, et al. (2011). "Single-molecule protein arrays enabled by scanning probe block copolymer lithography." Proceedings of the National Academy of Sciences of the United States of America **108**(49): 19521-19525.
3. Ekblad, T. and B. Liedberg (2010). "Protein adsorption and surface patterning." Current Opinion in Colloid & Interface Science **15**(6): 499-509.
4. Ganesan, R., K. Kratz, et al. (2010). "Multicomponent protein patterning of material surfaces." Journal of Materials Chemistry **20**(35): 7322-7331.
5. Irvine, E. J., A. Hernandez-Santana, et al. (2011). "Fabricating protein immunoassay arrays on nitrocellulose using dip-pen lithography techniques." Analyst **136**(14): 2925-2930.
6. Thompson, D. G., E. O. McKenna, et al. (2011). "Microscale mesoarrays created by dip-pen nanolithography for screening of protein-protein interactions." Biosensors & Bioelectronics **26**(12): 4667-4673.
7. Tsarfati-BarAd, I., U. Sauer, et al. (2011). "Miniaturized protein arrays: Model and experiment." Biosensors & Bioelectronics **26**(9): 3774-3781.
8. Wu, C. C., D. N. Reinhoudt, et al. (2010). "Protein Immobilization on Ni(II) Ion Patterns Prepared by Microcontact Printing and Dip-Pen Nanolithography." ACS Nano **4**(2): 1083-1091.

Cell Biology & Microenvironment

1. Collins, J. M. and S. Nettikadan (2011). "Subcellular scaled multiplexed protein patterns for single cell cocultures." Analytical Biochemistry **419**(2): 339-341.
2. Curran, J. M., R. Chen, et al. (2010). "Nanoscale definition of substrate materials to direct human adult stem cells towards tissue specific populations." Journal of Materials

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Science-Materials in Medicine **21**(3): 1021-1029.

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4. Jing, G., S. F. Perry, et al. (2010). "Precise cell patterning using cytophobic self-assembled monolayer deposited on top of semi-transparent gold." Biomedical Microdevices **12**(5): 935-948.
5. Kim, M. H., M. Kino-oka, et al. (2010). "Designing culture surfaces based on cell anchoring mechanisms to regulate cell morphologies and functions." Biotechnology Advances **28**(1): 7-16.
6. Nair, P. M., K. Salaita, et al. (2011). "Using patterned supported lipid membranes to investigate the role of receptor organization in intercellular signaling." Nature Protocols **6**(4): 523-539.
7. Nyamjav, D., S. Rozhok, et al. (2010). "Immobilization of motile bacterial cells via dip-pen nanolithography." Nanotechnology **21**(23).
8. Pulsipher, A. and M. N. Yousaf (2010). "Surface Chemistry and Cell Biological Tools for the Analysis of Cell Adhesion and Migration." ChemBiochem **11**(6): 745-753.
9. Quist, A. P. and S. Oscarsson (2010). "Micropatterned surfaces: techniques and applications in cell biology." Expert Opinion on Drug Discovery **5**(6): 569-581.
10. Shekaran, A. and A. J. Garcia (2011). "Nanoscale engineering of extracellular matrix-mimetic bioadhesive surfaces and implants for tissue engineering." Biochimica Et Biophysica Acta-General Subjects **1810**(3): 350-360.
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12. Zhao, C., M. Burchardt, et al. (2010). "Microfabrication of Patterns of Adherent Marine Bacterium *Phaeobacter inhibens* Using Soft Lithography and Scanning Probe Lithography." Langmuir **26**(11): 8641-8647.

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1. Chen, L., G. Henein, et al. (2011). "Nanofabrication techniques for controlled drug-release devices." Nanomedicine **6**(1): 1-6.
2. Ogaki, R., M. Alexander, et al. (2010). "Chemical patterning in biointerface science." Materials Today **13**(4): 22-35.
3. Park, C. G., M. H. Kim, et al. (2011). "Polymeric nanofiber coated esophageal stent for sustained delivery of an anticancer drug." Macromolecular Research **19**(11): 1210-1216.

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5. Verma, S., A. J. Domb, et al. (2011). "Nanomaterials for regenerative medicine." Nanomedicine **6**(1): 157-181.
6. Biswas, S., M. Hirtz, et al. (2011). "Measurement of mass transfer during dip-pen nanolithography with phospholipids." Small **7**(14): 2081-2086.
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9. Nafday, O. A. and S. Lenhert (2011). "High-throughput optical quality control of lipid multilayers fabricated by dip-pen nanolithography." Nanotechnology **22**(22): 225301.
10. Shin, Y. H., S. H. Yun, et al. (2010). "Polymer-Coated Tips for Patterning of Viruses by Dip-Pen Nanolithography." Angewandte Chemie-International Edition **49**(50): 9689-9692.
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Sensor & Microstructure Functionalization

1. Agarwal, P. B., A. Kumar, et al. (2010). "Nano-arrays of SAM by dip-pen nanowriting (DPN) technique for futuristic bio-electronic and bio-sensor applications." Thin Solid Films **519**(3): 1025-1027.
2. Castronovo, M. and D. Scaini (2011). The Atomic Force Microscopy as a Lithographic Tool: Nanografting of DNA Nanostructures for Biosensing Applications. DNA Nanotechnology: Methods and Protocols. G. Zuccheri and B. Samori. **749**: 209-221.
3. Chen, X., Z. Guo, et al. (2010). "Electrical nanogap devices for biosensing." Materials Today **13**(11): 28-41.
4. Frasconi, M., F. Mazzei, et al. (2010). "Protein immobilization at gold-thiol surfaces and potential for biosensing." Analytical and Bioanalytical Chemistry **398**(4): 1545-1564.
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9. Martinez-Otero, A., P. Gonzalez-Monje, et al. (2011). "Multiplexed arrays of chemosensors by parallel dip-pen nanolithography." Chem Commun (Camb) **47**(24): 6864-6866.
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11. Sharma, H., N. Diep, et al. (2011). "Unconventional Low-Cost Fabrication and Patterning Techniques for Point of Care Diagnostics." Annals of Biomedical Engineering **39**(4): 1313-1327.
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13. Yokoo, A., T. Tanabe, et al. (2011). "Ultrahigh-Q Nanocavities Written with a Nanoprobe." Nano Letters **11**(9): 3634-3642.

Nanofabrication & Nanomaterials

1. Ahn, B. Y., D. J. Lorang, et al. (2011). "Transparent conductive grids via direct writing of silver nanoparticle inks." Nanoscale **3**(7): 2700-2702.
2. Bellido, E., S. Cardona-Serra, et al. (2011). "Assisted-assembly of coordination materials into advanced nanoarchitectures by Dip Pen nanolithography." Chemical Communications **47**(18): 5175-5177.
3. Brown, T. T., Z. M. LeJeune, et al. (2011). "Automated Scanning Probe Lithography With n-Alkanethiol Self-Assembled Monolayers on Au(111): Application for Teaching Undergraduate Laboratories." Jala **16**(2): 112-125.
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14. Jang, J. W., Z. J. Zheng, et al. (2010). "Arrays of Nanoscale Lenses for Subwavelength Optical Lithography." Nano Letters **10**(11): 4399-4404.
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19. Malfatti, L., D. Marongiu, et al. (2010). "Writing Self-Assembled Mesostructured Films with In situ Formation of Gold Nanoparticles." Chemistry of Materials **22**(6): 2132-2137.
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29. Shin, Y. S., J. Y. Son, et al. (2011). "High-mobility graphene nanoribbons prepared using polystyrene dip-pen nanolithography." J Am Chem Soc **133**(15): 5623-5625.
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31. Son, J. Y., Y. S. Shin, et al. (2011). "Formation of Semiconducting ZnO Nanowires Using Dip-Pen Nanolithography and Step Edge Decoration Approach." Electrochemical and Solid State Letters **14**(10): H397-H399.
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33. Sugimura, H., M. Kanda, et al. (2011). "Self-aligned nucleation of gold onto templates with a nano-scale precision fabricated by scanning probe lithography." Journal of Photochemistry and Photobiology a-Chemistry **221**(2-3): 209-213.
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Tip-Based Nanofabrication: Theory, Tools & Techniques

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3. Basnar, B. (2011). Nanopattern Formation Using Dip-Pen Nanolithography.
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 14. Greiner, C., J. R. Felts, et al. (2010). "Local Nanoscale Heating Modulates Single-Asperity Friction." Nano Letters **10**(11): 4640-4645.
 15. Haaheim, J., V. Val, et al. (2010). "Self-Leveling Two-Dimensional Probe Arrays for Dip Pen Nanolithography (R)." Scanning **32**(1): 49-59.
 16. Haaheim, J. R., V. Val, et al. (2010). Self-Leveling 2D DPN (R) Probe Arrays. Microfluidics, Biomems, and Medical Microsystems Viii. H. Becker and W. Wang. **7593**.
 17. Hines, D. R., N. P. Siwak, et al. (2011). MEMS Lithography and Micromachining Techniques.
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33. Liddle, J. A. and G. M. Gallatin (2011). "Lithography, metrology and nanomanufacturing." Nanoscale **3**(7): 2679-2688.
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35. Malshe, A. P., K. P. Rajurkar, et al. (2010). "Tip-based nanomanufacturing by electrical, chemical, mechanical and thermal processes." Cirp Annals-Manufacturing Technology **59**(2): 628-651.
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37. Onal, C., B. Sumer, et al. (2011). Tip based Robotic Precision Micro/Nanomanipulation Systems. Independent Component Analyses, Wavelets, Neural Networks, Biosystems, and Nanoengineering IX. H. Szu and L. Dai. **8058**.
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46. Saha, S. K. and M. L. Culpepper (2010). "A surface diffusion model for Dip Pen Nanolithography line writing." Applied Physics Letters **96**(24).
47. Saha, S. K. and M. L. Culpepper (2011). "Characterization of the Dip Pen Nanolithography Process for Nanomanufacturing." Journal of Manufacturing Science and Engineering-Transactions of the Asme **133**(4).
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