

Supporting Information

Thermoresponsive Polymer Micropatterns Fabricated by Dip-Pen Nanolithography for a Highly Controllable Substrate with Potential Cellular Applications

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SUPPORTING INFORMATION

To confirm the chemical composition of the DEAAm array spot, a Raman spectrum of the printed spot was obtained and compared to that of the bulk ink solution. Since the spectra of the bulk material and the printed spot differed significantly, spectra were also collected for each of the other components of the ink. Figure S1 shows that the Raman spectrum of the printed spot is very similar to that of the PEG-DMA crosslinker, indicating that the spot is composed of PEG-DMA. The absence of bands characteristic of DEAAm confirms that the DEAAm has evaporated during the printing process.

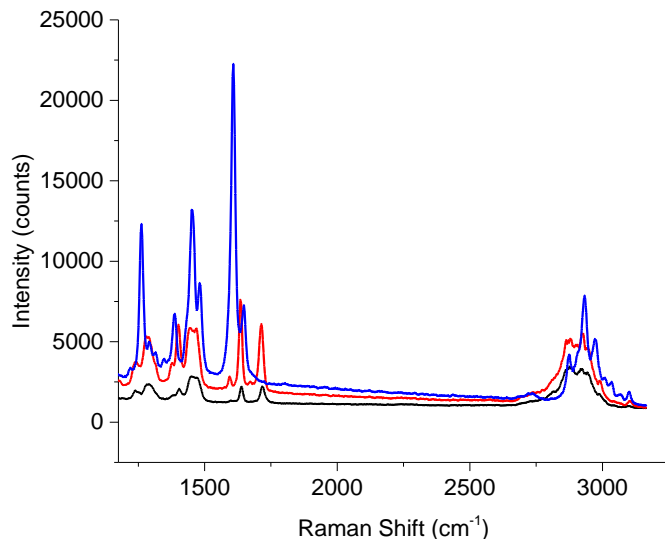


Figure S1. Raman spectra of the printed spot of DEAAm (black) the PEG-DMA crosslinker (red) and the whole ink solution (blue). Spectra were collected using a 633 nm laser excitation wavelength with 5 x 10 second accumulations.

Table S1 compares the bands present in the Raman spectra of the array spots and the bulk material for both the Jeffamine and the Jeffamine/DEAAm ink systems. Approximate assignments are suggested for each of the Raman bands.

Table S1. Assignment of Raman vibrations for bulk material and array spots of both Jeffamine and Jeffamine/DEAAM.

Band assignment	Jeffamine bulk material (cm⁻¹)	Jeffamine array spot (cm⁻¹)	Jeffamine/ DEAAM bulk material (cm⁻¹)	Jeffamine/ DEAAM array spot (cm⁻¹)
CH₂/CH₃ deformation				
symmetric Si-CH ₃	1256	1257	1263	1251
asymmetric/symmetric O-CH	1458	1457	1456	1461
C-O-C stretching	1293	1296	1284	1296
N-H deformation	1611-1641	1605-1642		1601 & 1642
C=C & C=O stretching			1615 & 1673	
Aliphatic CH stretching				
Symmetric	2874	2882	2892 & 2875	2889 & 2873
Asymmetric	2919	2918	2970 & 2972	2919 & 1927