Claims

1. A flow cell, comprising:

a patterned substrate including depressions separated by interstitial regions and including a bonding region;

sequencing surface chemistry attached to each of the depressions, the sequencing surface chemistry including:

a functionalized coating layer; and

a primer grafted to the functional coating layer;

a non-grafted hydrogel on at least the sequencing surface chemistry, the non-grafted hydrogel selected from the group consisting of crosslinked polyacrylamide, an agarose gel, and crosslinked polyethylene glycol;

a lid attached to the patterned substrate at the bonding region; and

a flow channel defined between the patterned substrate and the lid.

2. The flow cell as defined in claim 1, wherein the non-grafted hydrogel is also on at least some of the interstitial regions.

3. The flow cell as defined in claim 1, wherein the functionalized coating layer is poly(N-(5-azidoacetamidylpentyl)acrylamide-co-acrylamide).

4. The flow cell as defined in claim 1, further comprising a spacer layer bonding the lid to the bonding region.

5. The flow cell as defined in claim 1, wherein the non-grafted hydrogel is the crosslinked polyethylene glycol, and wherein the crosslinked polyethylene glycol includes a polyethylene glycol macromer crosslinked with a reactive chain end selected from the group consisting of acrylate, methacrylate, allyl ether, maleimide, vinyl sulfone, N-hydroxysuccinimide ester, and vinyl ether.