

26. The microfluidic system of claim 25, wherein at least one of the first fluid path and the second fluid path comprises a cross-sectional dimension of less than about 50 μm .

27. The microfluidic system of claim 1, wherein both the first fluid path and the second fluid path have a cross-sectional dimension of less than about 500 μm .

28. A fluidic system, comprising:

a first fluid path;

a second fluid path;

a third fluid path segregated from the first fluid path by a convection controller at a first contact region and the second fluid path by a convection controller at a second contact region; and

a fourth fluid path segregated from the first fluid path by a convection controller at a third contact region and segregated from the second fluid flow path by a fourth convection controller at a fourth contact region.

29. A fluidic array, comprising:

a first set of fluid paths arranged generally parallel to one another;

a second set of fluid paths arranged generally parallel to one another and crossing the first set of fluid paths such that a plurality of contact regions are formed between at least some of the fluid paths in the first set of fluid paths and at least some of the fluid paths in the second set of fluid paths; and

a convection controller segregating one of the first set of fluid paths from one of the second set of fluid paths at the contact region.

30. A method of promoting interaction, comprising:

introducing a first fluid including a first material into a first fluid path having a cross-sectional dimension of less than 1 millimeter;

introducing a second fluid including a second material into a second fluid path segregated from the first fluid path by a convection controller at a contact region; and

allowing the first and second materials to interact at the contact region.

31. The method of promoting interaction of claim 30, further comprising maintaining a pressure within the first fluid path at the contact region substantially equal to a pressure within the second fluid path at the contact region.

32. The method of promoting interaction of claim 30, further comprising diffusing at least one of the first material and the second material into the convection controller.

33. The method of promoting interaction of claim 30, further comprising flowing at least one of the first fluid through the first fluid path and the second fluid through the second fluid path.

34. The method of promoting interaction of claim 30, further comprising immobilizing at least one of the first fluid in the first fluid path and the second fluid in the second fluid path.

35. The method of promoting interaction of claim 30, wherein the first fluid is the first material.

36. The method of promoting interaction of claim 30, wherein the second fluid is the second material.

37. A method of immobilizing a material in a microfluidic system, comprising:

introducing an immobilizer containing the material into a fluid path having a cross-sectional dimension of less than about 1 millimeter.

38. The method of immobilizing a material in a microfluidic system of claim 37, wherein introducing the immobilizer comprises flowing an immobilizer comprising a flowable gel into the fluid path.

39. The method of immobilizing a material in a microfluidic system of claim 37, wherein introducing the immobilizer comprises flowing the immobilizer into the fluid path and allowing the immobilizer to set within the fluid path.

40. A microfluidic system, comprising

a fluid path having a cross-sectional dimension of less than about 1 millimeter;

an immobilizer positioned within the fluid path.

41. The microfluidic system of claim 40, wherein the immobilizer comprises a gel.

42. The microfluidic system of claim 41, wherein the immobilizer comprises a flowable gel.

43. The microfluidic system of claim 40, wherein the immobilizer comprises a test material.

44. The microfluidic system of claim 40, wherein the immobilizer comprises an indicator material.

45. The microfluidic system of claim 40, wherein at least 5% of the fluid path is occupied by the immobilizer at least one point in the fluid path.

46. The microfluidic system of claim 45, wherein at least 25% of the fluid path is occupied by the immobilizer at least one point in the fluid path.

47. The microfluidic system of claim 46, wherein at least 50% of the fluid path is occupied by the immobilizer at least one point in the fluid path.

48. A method of patterning a material on a substrate, comprising:

placing a first fluid path in fluid contact with the substrate;

flowing a fluid comprising the material into the first fluid path;

immobilizing at least a portion of the material within the first fluid path;

removing the first fluid path from the substrate, leaving at least a portion of the immobilized material in contact with the substrate; and

placing a second fluid path in fluid contact with the substrate such that the second fluid path is in fluid contact with at least a portion of the immobilized material.

49. The method of claim 48, wherein immobilizing further comprises adsorbing a portion of the fluid onto the substrate.

50. The method of claim 48, wherein removing comprises removing the fluid path from the substrate such that the immobilized material is not substantially damaged.

51. The method of claim 48, wherein placing further comprises placing a first plurality of fluid paths in contact with the substrate and flowing further comprises flowing a plurality of fluids into the first plurality of fluid paths.

52. The method of claim 48, wherein placing a first fluid path further comprises placing a first fluid path having a cross-sectional dimension of less than 1 millimeter in fluid contact with the substrate.