30. A microfluidic device comprising a body and at least one nozzle extending outwardly therefrom, the body having at least one channel formed therein, each channel extending through the body from a first surface to a second surface thereof, wherein each channel has a reservoir section that is open at the first surface for receiving a sample, the at least one nozzle extending outwardly from the second surface, wherein each nozzle is in fluid communication with one channel such that each channel terminates in a nozzle opening that is formed as part of the nozzle, the body and at least one nozzle being formed by a process comprising the steps of:

providing a mold which includes a negative impression of the channel and the at least one nozzle;

injecting a polymeric material into the mold;

curing the polymeric material to form the body with the at least one nozzle extending outwardly from the second surface with the at least one channel formed in the body; and

removing the body from the mold.

31. The microfluidic device of claim 30, wherein the mold is constructed so that the nozzle opening of the formed microfluidic device has a diameter equal to or less than 100 μm and an outside diameter of the nozzle is equal to or less than 150 μm.

32. The microfluidic device of claim 30, wherein the mold is constructed so that the nozzle opening of the formed microfluidic device has a diameter equal to or less than 50 μm and an outside diameter of the nozzle is equal to or less than 100 μm.

33. The microfluidic device of claim 30, wherein the mold is constructed so that the nozzle opening of the formed microfluidic device has a diameter equal to or less than 20 μm and an outside diameter of the nozzle is equal to or less than 50 μm.

34. The microfluidic device of claim 30, wherein the mold includes a first die and a second die, the first die having a plurality of pins extending outwardly therefrom which are received in openings formed in the second die, each opening terminating in a closed, conically shaped section.

35. The microfluidic device of claim 30, wherein in a closed position, a tip of each pin is in intimate contact with a tip of the conically shaped section of the second die, the interface between the two tips defining the nozzle opening.

36. The microfluidic device of claim 30, wherein in a closed position, a tip of each pin is spaced a predetermined distance from a tip of the conically shaped section of the second die to form a gap between the two tips, wherein during the step of injecting the polymeric material, the polymeric material is only partially disposed within the gap so as to form the nozzle opening.

37. The microfluidic device of claim 36, wherein the nozzle opening has a diameter greater than a diameter of the tip of the pin.

38. The microfluidic device of claim 30, further including the step of:

controlling a pressure used to inject the polymeric resin such that an area within the gap is free of polymeric material, thereby defining the nozzle opening.

39. The microfluidic device of claim 30, further including the step of:

polishing at least a portion of the mold to create a smooth finish prior to injecting the polymeric material, wherein the portion at least includes a section of the mold that defines an outer surface of the nozzle.

40. The microfluidic device of claim 30, further including the step of:

varying the surface characteristics of at least a section of the mold that defines and outer surface of the nozzle so as to reduce the surface friction in this section to enhance the flow properties of the injected resin in the section.

41. A detection system for detecting one or more properties of a sample, the detection system including:

a microfluidic device comprising:

a body having a first surface and an opposing second surface, the body having at least one channel formed therein, the channel extending through the body from the first surface to the second surface, wherein the channel has a reservoir section that is open at the first surface; and

at least one nozzle integrally formed with the body and disposed along and extending beyond the second surface, the number of nozzles equal to the number of channels with each nozzle being in fluid communication with one channel such that each channel terminates in a nozzle opening that is formed as part of the nozzle, wherein a diameter of the nozzle opening is equal to or less than about 100 μm and an outside diameter of the nozzle is equal to or less than about 150 μm; and

a detector for receiving the sample discharged from the microfluidic device through the nozzle opening thereof, wherein the detector analyzes the discharged sample and provides information regarding one or more properties of the sample.

42. The detection system of claim 41, wherein the detector is a mass spectrometer.

43. The detection system of claim 41, wherein the diameter of the nozzle opening is equal to or less than 20 μm and the outside diameter of the nozzle is equal to or less than 50 μm.

44. The detection system of claim 41, wherein the body includes a thin conductive film disposed on the second surface around each nozzle, the conductive film being connected to a source of electricity so that when an electric field is applied to the conductive film, the sample is vaporized and ionized as it is discharged through the nozzle opening.

45. The detection system of claim 41, wherein the sample is formed of a liquid and analytes.

46. The detection system of claim 45, wherein the detector is a mass spectrometer and the liquid comprises a water and at least one component selected from the group consisting of acetonitrile, methanol, and ammonium acetate.

47. The detection system of claim 41, further including:

a device for sealing the reservoir section and for transporting the sample from the reservoir section through the channel to the nozzle opening where the sample is discharged.