(including any notches (**54**, **62**) associated with the end channels such as notches **68** or **70** as shown in **FIG. 2***g*).

[**0086**] The depth of one of the secondary channels (**52**, **60**) (the height of the top of the secondary peaks **64** over the notches **54**) is uniform over the length of the fluid control films, and is typically at least 5 microns. The depth of the secondary channels (**52**, **60**) is generally 0.5 to 80 percent of the depth of the primary channels, preferably 5 to 50 percent. The spacing of the notches (**54**, **62**) on either side of a peak is also preferably uniform over the length of the fluid control film. Preferably the primary and/or secondary channel depth and width varies by less than 20 percent, preferably less than 10 percent for each channel over a given length of the fluid control film. Variation in the secondary channel depth and shape above this range has a substantial adverse impact on the rate and uniformity of liquid transport along the fluid control film. Generally the primary and secondary channels are continuous and undisturbed.

[**0087**] In **FIG. 3***a* an active fluid transport device **74** is illustrated which includes a layer **75** of polymeric material that has a structured surface **76** on one of its two major surfaces. The device **74** also includes a source **78** for providing a potential to assist in moving a liquid over the structured surface **76** of the active fluid transport device **74**. Layer **75** also includes a body layer **80** from which the structured surface **76** projects. Body layer **80** serves to support structured surface **76** to retain the individual structured features together in layer **75**, and may include additives or additional layers as described herein.

[**0088**] Layer **75** may be comprised of flexible, semi-rigid, or rigid material, which may be chosen depending on the particular application of the active fluid transport device **74**. The layer **75** comprises a polymeric material because such materials can be accurately formed to create a microstructured surface **76**. Substantial versatility is available because polymeric materials possess many different properties suitable for various needs. Polymeric materials may be chosen, for example, based on flexibility, rigidity, permeability, etc. The use of a polymeric layer **75** also allows a structured surface to be consistently manufactured to produce a large number of high density of channels, that when capped, form discrete liquid flow channels **82**. Thus, a highly distributed liquid transport system (i.e., one that has many channels that distribute the potential along the face of the structured surface) can be provided that is amenable to being manufactured at a high level of accuracy and economy. The structured polymeric surface **76** may be made from the same or different materials of the body layer **75**.

[**0089**] As shown in **FIG. 3***a*, each of the channels **82** is opened at one edge of the layer **75** to define channel inlets **84**. Liquid can thus pass through the inlets **84** guided by the channels **82** toward a further edge of the layer **75** to a connector **86**. The connector **86** preferably is in fluid communication with each of the channels **82** through outlets (not shown) and also is in liquid communication with the potential source **78**. The connector **86** may be fashioned in a variety of forms but as illustrated in **FIG. 3***a*, it includes a manifold **88**. Manifold **88** is provided with a plenum (not shown) that is defined internally therein and which is in fluid communication with channels **82**. The plenum may simply comprise a chamber within the manifold **88** that is sealingly connected to at least a plurality of the channels **82**. The manifold **88** may be flexible, semi-rigid, or rigid, like the layer **75**. A second manifold (not shown) also may be provided at the side of layer **75** having inlets **84** so as to supply liquid to the channels **82**, depending on the particular application. The manifolds may be formed using microreplicated channels (e.g., converging channels).

[**0090**] In accordance with the invention, the connector may take on essentially any adaptation that enables the potential to be transferred from the source to the multiple channels. Although a manifold with a plenum and a tubing have been described, other connectors—such as compression couplings, or seals and gaskets that fluidically join a conduit to the flow channels and permit the isolation or partition of regions of higher and lower potential from the surrounding environment—are contemplated for use in this invention. The connector could also include capillary fibers, for example, less than 10 μm in inner diameter, each in fluid communication with an individual channel to allow individual liquids to flow discretely through separate channels. The connector could also be one or more molded chambers, a microstructured fluid conduit integrally or nonintegrally disposed relative to the discrete flow channels, or for example, a system or mechanism that allows the discrete microstructured flow channels to be seated in a centrifuge or that allows a flow stream such as a jet to be directed at channel inlets or outlets.

[**0091**] To close off or enclose at least part of the channels **82** along peaks **90** thereof, a cap layer **92** may be juxtaposed against the structured surface **76**. Cap layer **92** thus closes at least a plurality of the channels **82** to create discrete liquid flow channels in a capillary module **94**. The capillary module **94** typically would have a thickness of 1 to 10 millimeters (mm), and more typically 2 to 6 mm. Cap layer **92** may likewise sealingly connect to the manifold **88** so that plural discrete channels **82** provide active liquid transport channels based upon the creation of a potential difference along the channels **82** from a first potential to a second potential. Cap layer **92** typically has a thickness of about 0.01 to 2 mm, and could be comprised of any protective film, flooring laminate, or other functional part of an industrial device. If the channels of the invention are hermetically sealed then the flexible system of channels could generally withstand high pressure without rupture, as a result of the hoop strength of the small individual channels.

[**0092**] The cap layer **92** may be bonded to the peaks **90** of some or all of the structured surface **76** to enhance creation of discrete channels **82**. This can be done thermally or by using conventional adhesives that are compatible with the cap layer material **92** and the polymeric structured layer **75** (when an adhesive is used for this purpose, it must be selected so that it does not immediately, or over time, flow into and close off the channels **82** to which it is adhered). The formation of discrete channels **82** may be accomplished through heat bonding, ultrasonic welding, compression, or mechanical engagement such as an interference fit. Bonds may be provided entirely along the peaks **90** to the cap layer **92**, or the bonds may be spot welds or bonds that may be placed thereon in an ordered or random pattern. Alternatively, the cap layer **92** may simply be placed over the structured surface **76**, without an adhesive or bond therebetween.

[**0093**] Cap layer **92** may be made from a polymeric material such as the polymers described herein for the