puddle. This mixing is slow and not particularly vigorous, and it can create significant evaporation losses, especially at the elevated temperatures that are often necessary. Large volumes of rinse liquid are used to physically displace the large puddles of reagents, which are covered with oil. This rinsing procedure produces large volumes of waste liquid, which may be hazardous waste.

OVERVIEW OF TECHNOLOGY

[0007a] According to a first aspect of the present disclosure, there is provided an automated slide processing apparatus configured to apply at least one reagent to a specimen carried by a microscope slide, the automated slide processing apparatus comprising: a support element having a support surface; at least one vacuum port; and a sealing member having a non-round shape as viewed from above, wherein the sealing member in an uncompressed state extends upwardly beyond the support surface and in a compressed state is configured to maintain an airtight seal with a backside of the microscope slide when the microscope slide is pulled against the support surface by a vacuum drawn via the at least one vacuum port.

[0007b] According to a second aspect of the present disclosure, there is provided a method for holding a microscope slide, comprising: positioning a microscope slide on a support element such that a specimen-bearing portion of the slide is supported by a first portion of the support element and a label-bearing portion of the slide is supported by a second portion of the support element, wherein the first portion surrounds the second portion and a sealing member is positioned between the first and the second portions; and drawing a vacuum through the second portion while a sealing member contacts the slide.

[0008] At least some embodiments of the technology are directed to an automated slide processing apparatus configured to apply at least one reagent to a specimen carried by a microscope slide. A slide processing station can include a support element with a support surface, at least one port, and a sealing member having a non-round shape (e.g., as viewed from above). The sealing member can be moveable between an uncompressed state and a compressed state. In the uncompressed state, the sealing member can extend upwardly beyond the support surface. In the compressed state, the sealing member can be configured to maintain a seal with a backside of the microscope slide as the microscope slide is urged against the support surface by a vacuum drawn via the at least one port. The sealing member, in some embodiments, can have

a rounded-corner rectangular shape (e.g., a shape with rounded corners with radii less than the lengths of straight sides) or a rectangular shape as viewed from above. In one embodiment, the sealing member has a rounded-corner polygonal shape or a polygonal shape as viewed along an axis generally perpendicular to the support surface.

[0009] In some embodiments, at least a portion of the support element can have a non-round shape and can extend between the sealing member and the at least one vacuum port. In one embodiment, the support element includes a trench, and the sealing member includes a compliant gasket having a main body and a lip. The main body can be positioned in the trench, and the lip can extend radially outward from the main body. In some embodiments, the lip can be moveable between a compressed configuration and a uncompressed configuration. In the uncompressed configuration, the lip can extend upwardly from the trench. In the compressed configuration, the lip can extend toward a sidewall of the trench. In one embodiment, the lip is movable between the uncompressed configuration and the compressed configuration without contacting the sidewall of the trench. When the microscope slide is drawn against the support surface, the lip can be spaced apart from a sidewall of the trench but capable of physically contacting the sidewall of the trench to inhibit movement of the microscope slide relative to the