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(54) Title: SEMICONDUCTOR WAFER HANDLING AND TRANSPORT

(57) Abstract: Modular wafer transport and handling facilities are combined in a variety of ways deliver greater levels of flexibility, utility, efficiency, and functionality in a vacuum semiconductor processing system. Various processing and other modules may be interconnected with tunnel-and-cart transportation systems to extend the distance and versatility of the vacuum environment. Other improvements such as bypass thermal adjusters, buffering aligners, batch processing, multifunction modules, low particle vents, cluster processing cells, and the like are incorporated to expand functionality and improve processing efficiency.

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