

Position control of a wafer stage

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In the semiconductor industry, wafer stages are the key tool in the manufacturing of integrated circuits (ICs). The system needs to be extremely accurate for obtaining high throughput. The left photo shows a chip manufacturing machine from the company ASML where the stage is located under the red light. The right photo shows the wafer under the exposure of UV light. Since the sensors for measuring the position are located at a different location from exposure, time-varying performance location needs to be considered. Furthermore, higher tracking accuracy can be achieved only when the structural dynamics are taken into account. Our research is dealing with controlling this nano-positioning system.

