

# Tribology in Semiconductor Manufacturing

5 June 2024, ASML Veldhoven

Semiconductor manufacturing equipment uses machine parts that are being manufactured in series against nanometer specifications. During the use in mass production at continuous operation and ever increasing throughput rates this accuracy needs to be maintained. The usage puts challenging demands on lifetime performance as well as on contamination due to wear and particle generation.



Tribological components such as bearings and guides are used under conditions beyond the limits set by suppliers: making small oscillating movements or step-scan motions under high accelerations. Vacuum environments prevent the use of conventional greases.

Planned restrictions of PFAS containing materials demand the replacement of PTFE, 'Teflon', and PFPE, the main base oil in vacuum grade lubricants.



We prepared a program where several experts in the field will share their knowledge and experience on these and other challenges. Speakers include Julien van Kuilenburg (ASML), Kasper van den Broek (VDL-ETG), Steve Franklin (University of Sheffield) and Jacob Sukumaran (ASML).

The event is organized by the Tribology section of the Dutch and Flemish Bond voor Materialenkennis and will be hosted by ASML including a visit to the ASML Experience Center.

On Wednesday 5 June you are invited to learn and exchange knowledge. We hope to see you then!

*On behalf of the board of the Tribology section of the Bond voor Materialenkennis,  
Julien van Kuilenburg and Harry van Leeuwen*

## Program

12:00 Welcome with sandwiches

12:50 Opening, TBD

13:00 *Tribological challenges in semiconductor manufacturing*, Julien van Kuilenburg (ASML)

13:30 *The relation between tribology and particle contamination*, Kasper van den Broek (VDL-ETG)

14:00 break

14:30 *Tribology of the wafer – wafer table system*, Steve Franklin (University of Sheffield)

15:00 TBD, Jacob Sukumaran (ASML)

15:30 Closure, TBD

16:00 ASML Experience Center

17:00 Drinks and networking

18:00 End

## Time and location

- Wednesday 5 June 2024, 12:00 – 18:00 hours
- ASML Veldhoven

## Fee

- Non-members of the BvM: € 100 (excl. VAT)
- Members of the BvM: € 75 (excl. VAT)
- Members of the Tribology section: € 50 (excl. VAT)

## Registration

You can register by following [this link](#).

## Cancellation

Absence from the meeting without prior written cancellation no later than 24 hours before the meeting will incur the full participation fee.