
PFAS in photolithography

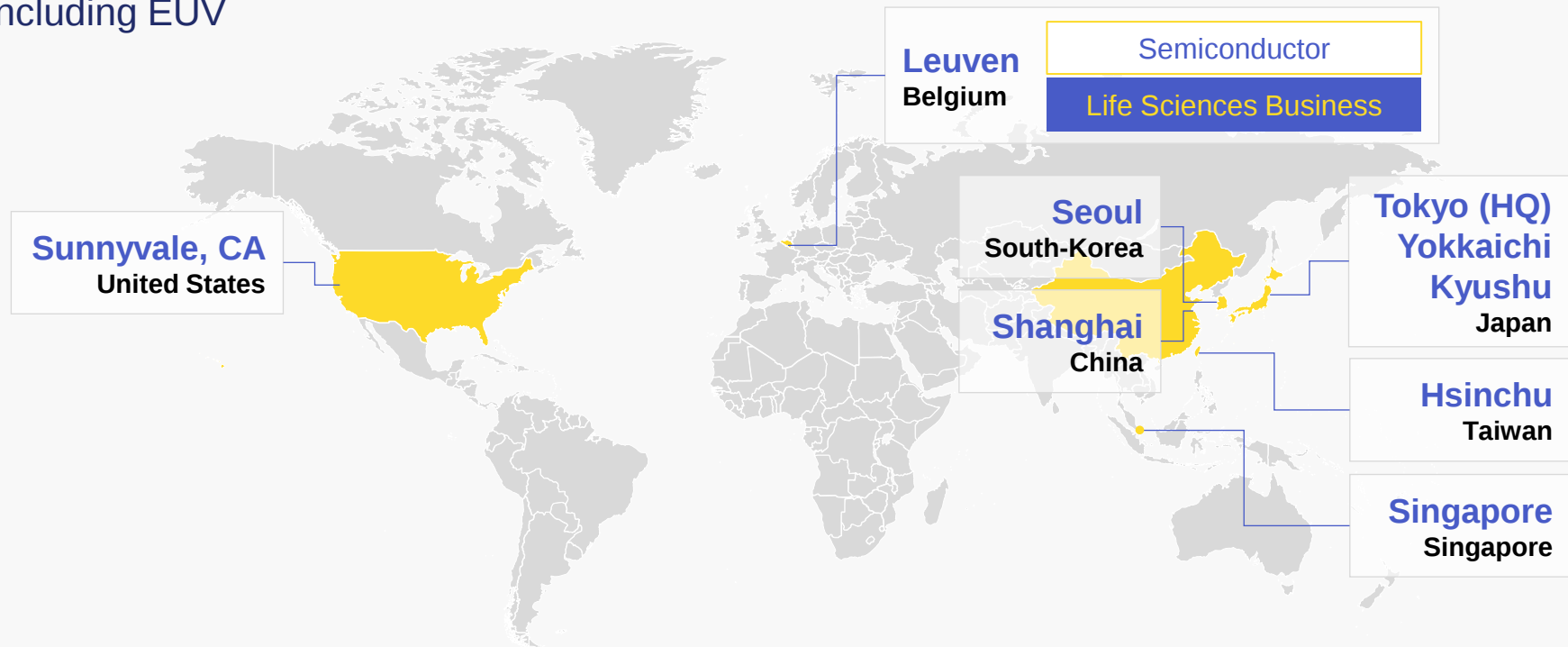


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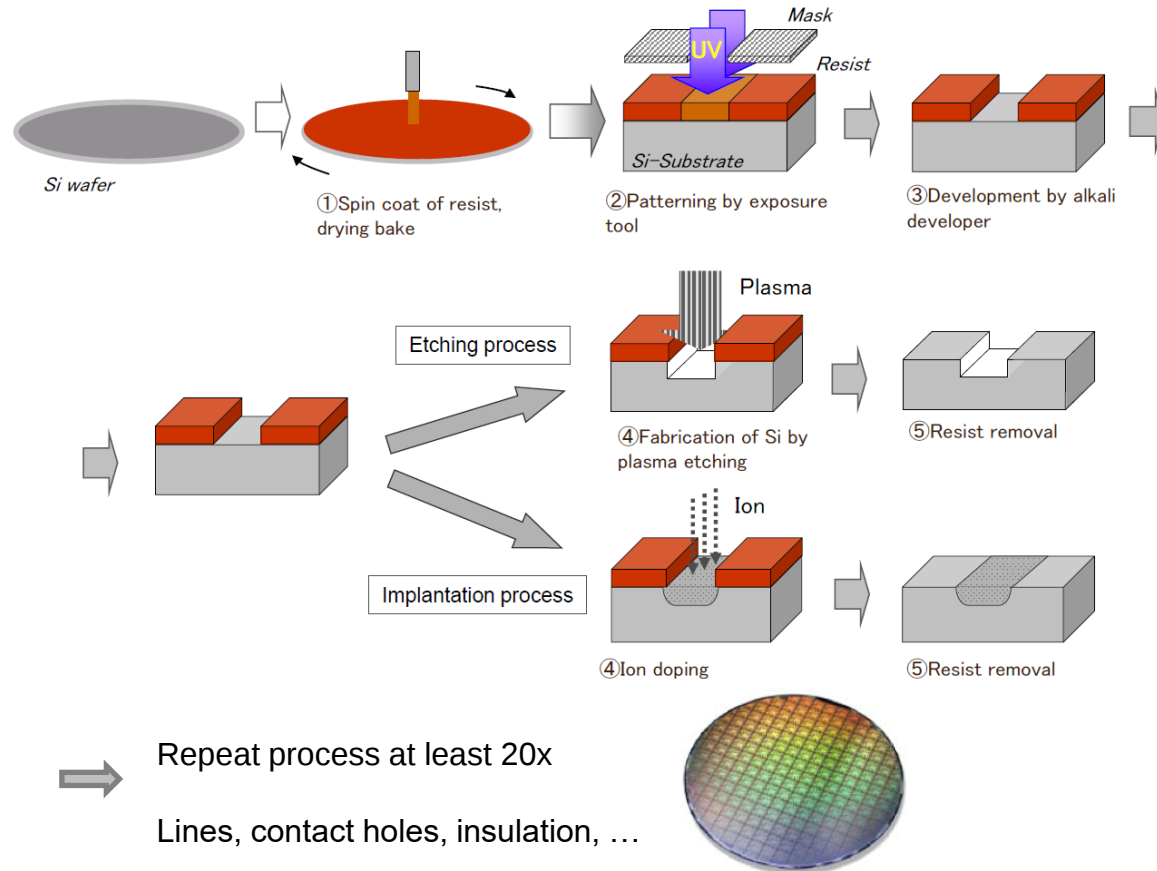
Production of
photoresists in Leuven
including EUV

worldwide presence

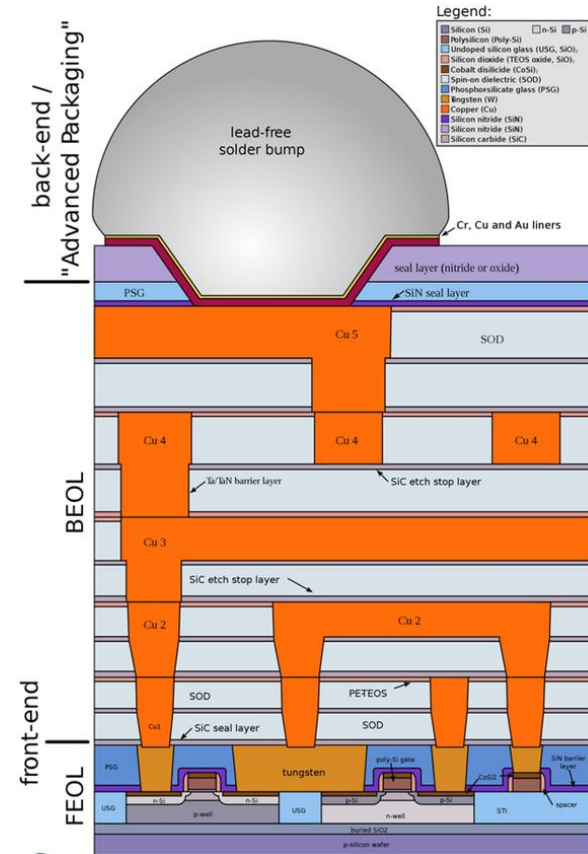
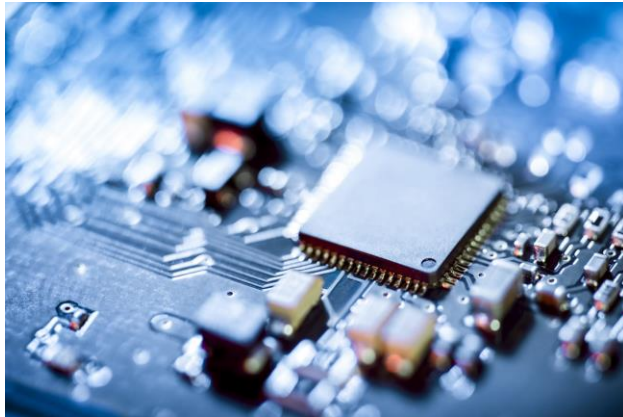
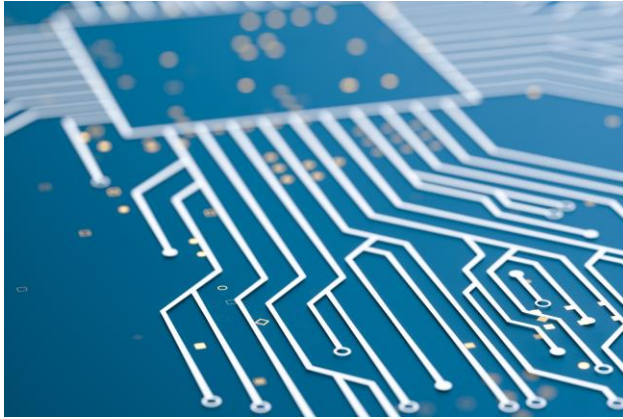
JSR Global network



Photolithographic process



The final product



Depending on the type of photoresist the following short chain PFAS may be present as ingredients:

- Photoacid generators (PAGs): generates strong acid on exposure to light
- PFAS surfactants: low surface tension, hydrofobic/hydrophilic behaviour
- Polymers

PFAS consumption in photolithography is very small compared to global releases. In EEA:

- Photolithography: ± 2.3 tonnes / year
 - EU PFAS 2020: ± 850000 tonnes / year (Annex XV report PFAS restriction proposal)
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Potential derogation of 13.5 years for the semiconductor manufacturing process

Semiconductor manufacturing process should cover the whole semiconductor manufacturing ecosystem → other actors are also dependent on PFAS

- Process chemistries
- Semiconductor manufacturing equipment
- Semiconductor manufacturing support equipment
- Semiconductor manufacturing infrastructure
- Semiconductor device

The PFAS restriction should not undermine the EU Chips Act (a framework to strengthen the semiconductor section in the EU;

https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en).

Thank you for your attention.

Questions?

