Microelectronics without PFAS

Application of PFAS

- PFAS in many areas of life, especially in manufacturing and waste management (Figure 1)
- Application as an anti-sticktion surface on chips, hydrophobization of the chip surface (Figure 2)
- Regulation/banning of PFAS by the EU can be countered by retrofitting existing systems (Figure 3)
- Replacement with chloroalkanes WITHOUT fluorine at chip and wafer level (Figure 4)

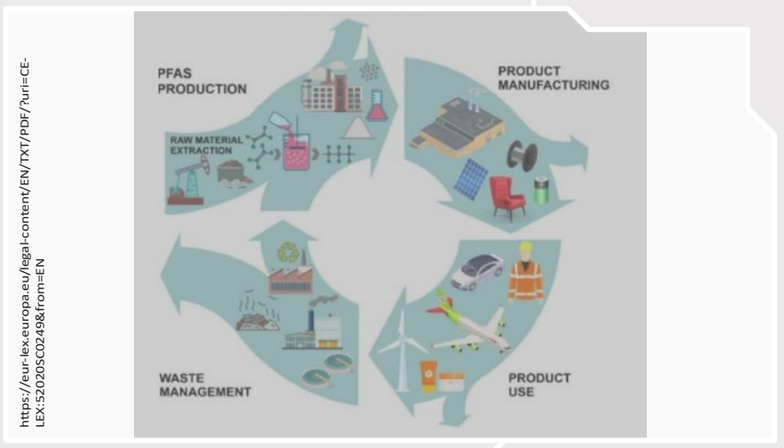

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Figure 1: Application of PFAS

What are we doing for MEMS development?

- Development of processes with harmless substances as a replacement for e.g. FDTS
- Evaluation of processes and systems to prevent PFAS leakage.
- Use of new, less environmentally harmful materials without compromising product quality Verification through analysis, e.g. determination of hydrophilicity (Figure 5)
- Opportunity assessment of the long-term effects of alterative materials

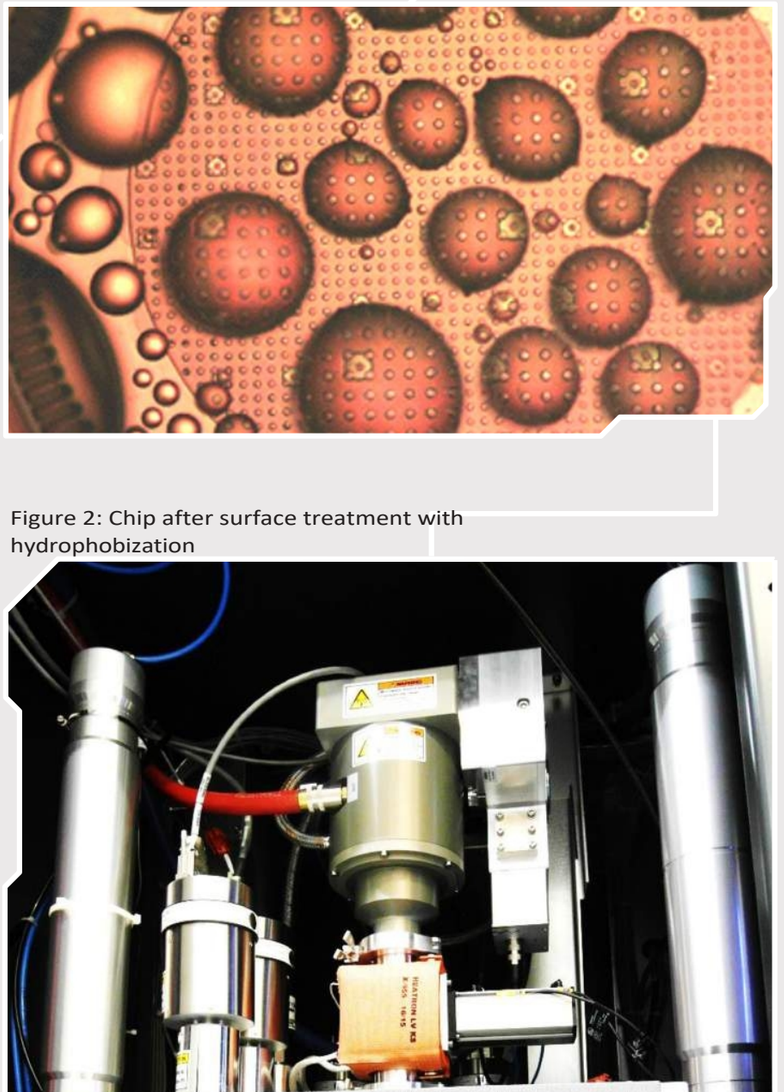

Figure 2: Chip after surface treatment with hydrophobization

Figure 3: Conversion of existing systems and process development

Figure 5: Contact angle before and after hydrophobization

Figure 4: Alkanes containing fluorine are harmful to the environment and are
not degradable. They accumulate in the groundwater.