



# „40 years of GADEST“

**Hans Richter**  
Frankfurt (Oder), Germany  
[richter@gfww.de](mailto:richter@gfww.de)

**The 20th International Autumn Meeting GADEST**  
**September 8 - 13, 2024,**  
**Hotel Elbresidenz, Bad Schandau, Saxony, Germany**

# Agenda

1. A few personal remarks on the GADEST and its history
2. The development of semiconductor technology and the role of GADEST (1985 – 2025)
  - 2.1 1985 – 2005
  - 2.2 2005 - 2025
3. The future of semiconductor technology

# Important new aspects:

## From Micron-Electronics to Quantum-Electronics

- In the 80s and 90s of the last century basic researchers began to create man-made quantum systems in III-V semiconductor structures with sizes in the submicron range.
- Well known effects in these systems include the quantization of the conductivity in point contacts and single electron tunneling in transport through quantum dots at **low temperatures**.
- With today's industrial technology much smaller, customarily tailored **quantum systems** with sizes down to the Angstrom level can be constructed on Si, this way suitable for **room temperature** operation and for mass production.
- **In addition to the monolithic on-chip integration:** With new Back End technologies as advanced packaging/system integration it is now possible to split the chip in a number of functional blocks (**Chiplets**). Here Si - Photonics plays a central role for optical communication between chiplets (**Heterogeneous Integration**).

# „Silicon is and will still be the skeleton of Semiconductor Applications“



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**We want the  
GADEST Family  
to play a pioneering role  
the thrilling forthcoming  
Angstrom Era**