

## "40 years of GADEST"

Hans Richter
Frankfurt (Oder), Germany
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)
- $2.1 \quad 1985 2005$
- 2.2 2005 2025
- 3. The future of semiconductor technology





### Important new aspects:

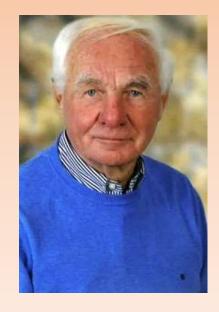
#### From Micron-Electronics to Quantum-Electronics

- 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"



Hans Richter
Frankfurt (Oder), Germany
richter@gfww.de

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



