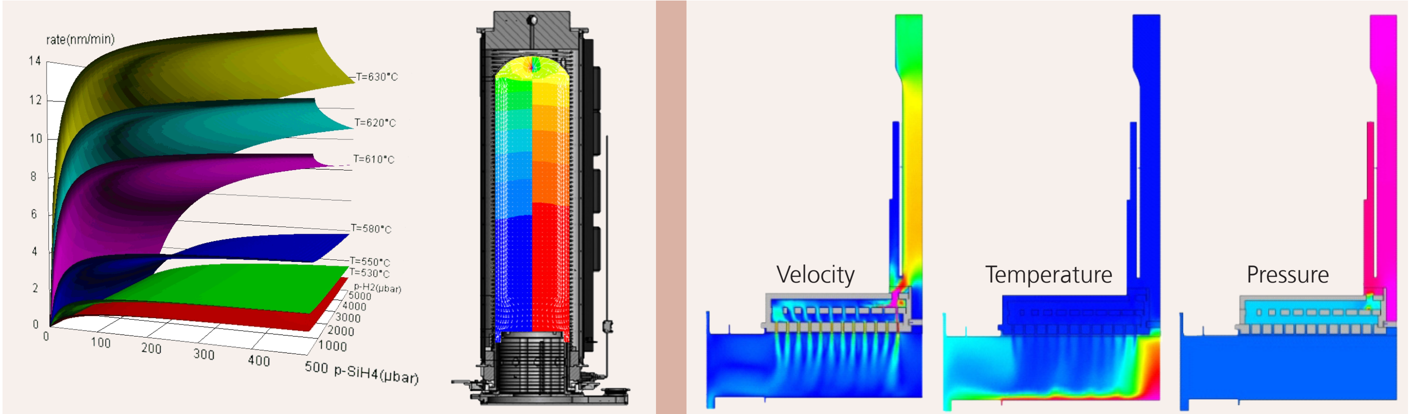
PROCESS AND EQUIPMENT SIMULATION OF CHEMICAL VAPOR DEPOSITION



Contact

Fraunhofer Institute for Electronic Nano Systems ENAS
Technologie-Campus 3
09126 Chemnitz | Germany

Contact person
Prof. Dr. Stefan E. Schulz
Phone: +49 371 45001-232
E-mail: stefan.schulz@enas.fraunhofer.de

Dr. Joerg Schuster
Phone: +49 371 45001-286
E-mail: joerg.schuster@enas.fraunhofer.de

Figures: Silicon CVD in a vertical furnace (left); GaN MOVPE in a single wafer reactor (right)

Graphic acknowledgements: Fraunhofer ENAS

All information contained in this datasheet is preliminary and subject to change. Furthermore, the described system is not a commercial product.

Computational fluid dynamics including gas phase and surface reactions for:

- multi component flow dynamics
- partial pressure distribution
- temperature distribution
- growth rate and uniformity

Plasma module for simulation of DC and RF plasma deposition (ICP, CCP)

Selected examples from our process simulation portfolio:

Oxides, Nitrides and Carbides		
SiO_2	$SiH_4 + O_2 + Ar$	PECVD
Si_3N_4	$SiH_4 + NH_3$	PECVD
Si_3N_4	$DCS + NH_3$	LPCVD
SiC	$SiH_4 + C_3H_8$	LPCVD
TiN	$TDMAT + NH_3$	LPCVD
Semiconductors		
GaN	TMGa	LPCVD
AlGaN	TMGa + TMAl	LPCVD
GaAs	$TMGa + AsH_3$	LPCVD
InP	$TMI + PH_3$	LPCVD
Si	SiH_4 $(+BCl_3/PH_3)$	LPCVD
Metals		
Cu	Cu hfac tmvs	LPCVD
W	$WF_6 + SiH_4$	LPCVD

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