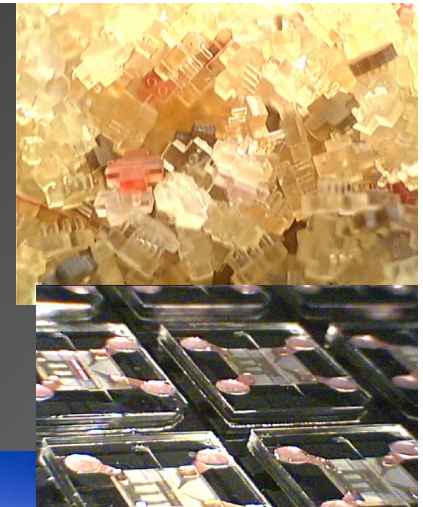
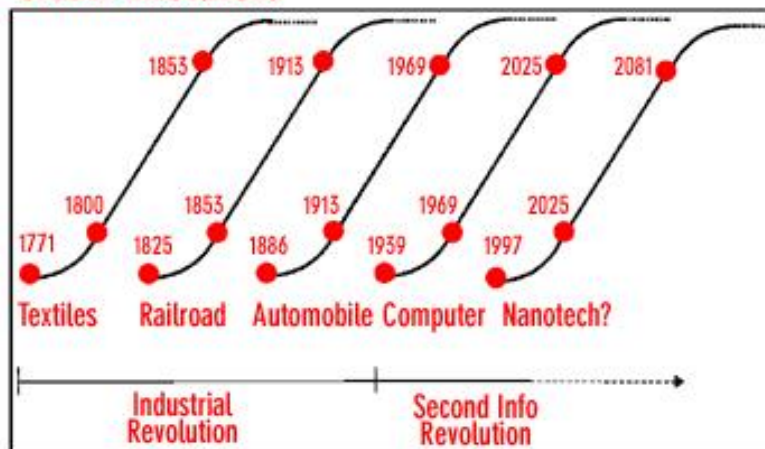


Using new international patented
production technologies for polymer mems
and high-integrated systems

Micromechanics, MEMS, Plastic Lab-on-a-chip
Production Service, Packaging and R&D
Advanced Micro- and Nanotechnologies
International Patented Technologies:
RMPD® Rapid Micro Product Development
3D-CSP 3-dimensional Chip Size Packaging
From the Idea to the Series Production



Growth Innovations

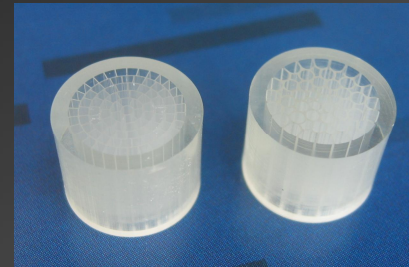


Sources: Norman Poire, Merrill Lynch

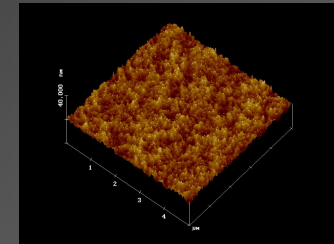


RMPD® - Technologies

multimat

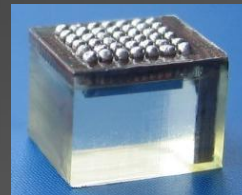


mask

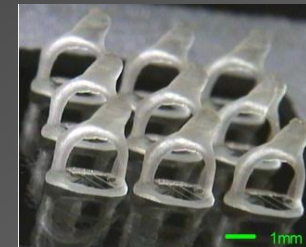


nanoface

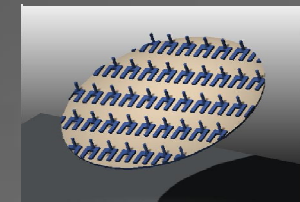
Assembly



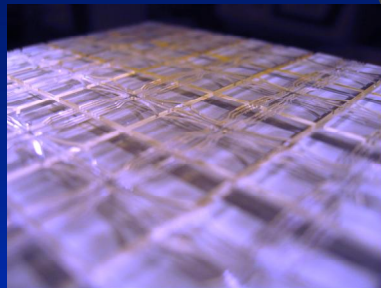
3D-CSP



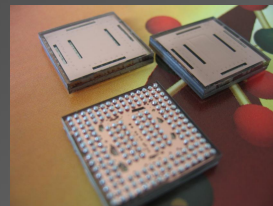
parallel



stick2



Parallel batch production



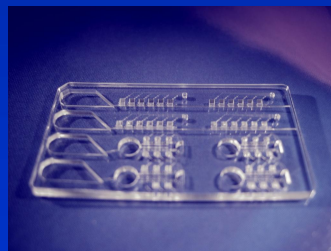
without technology change



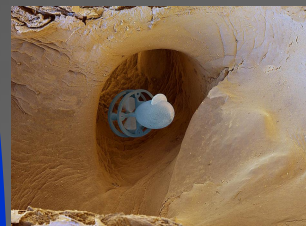
300 materials



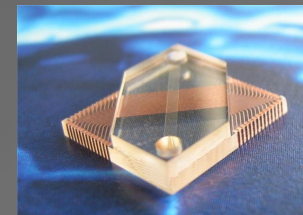
no tools



microFLUIDIC



with light

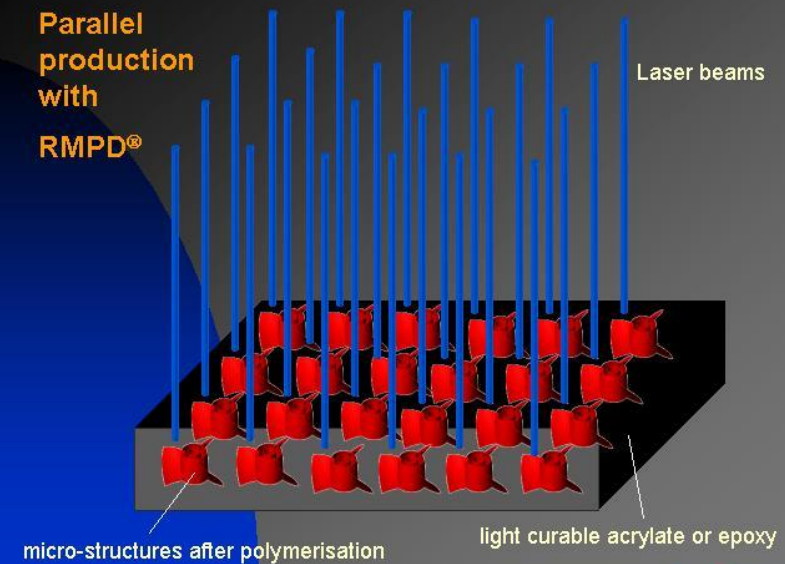


coating

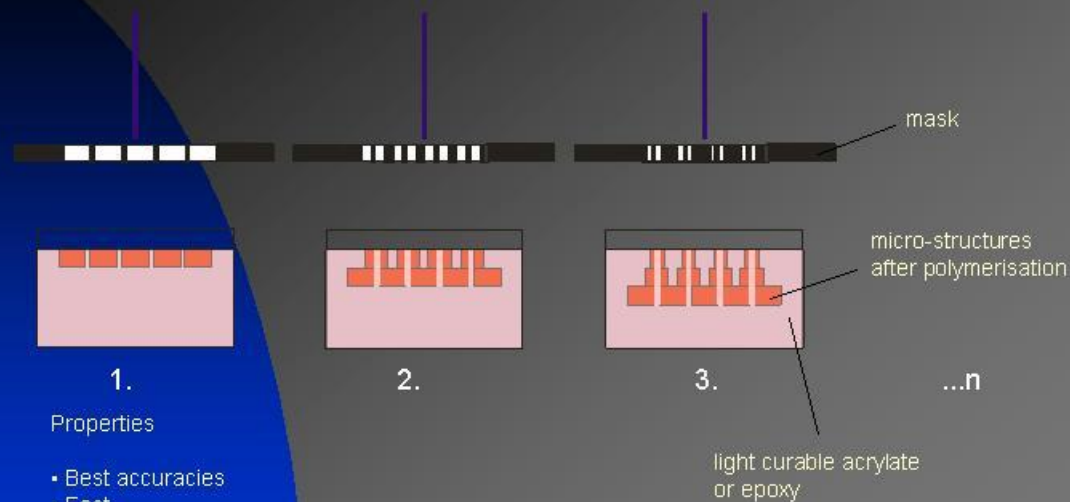


Patented processes for batch production

Parallel production with RMPD®



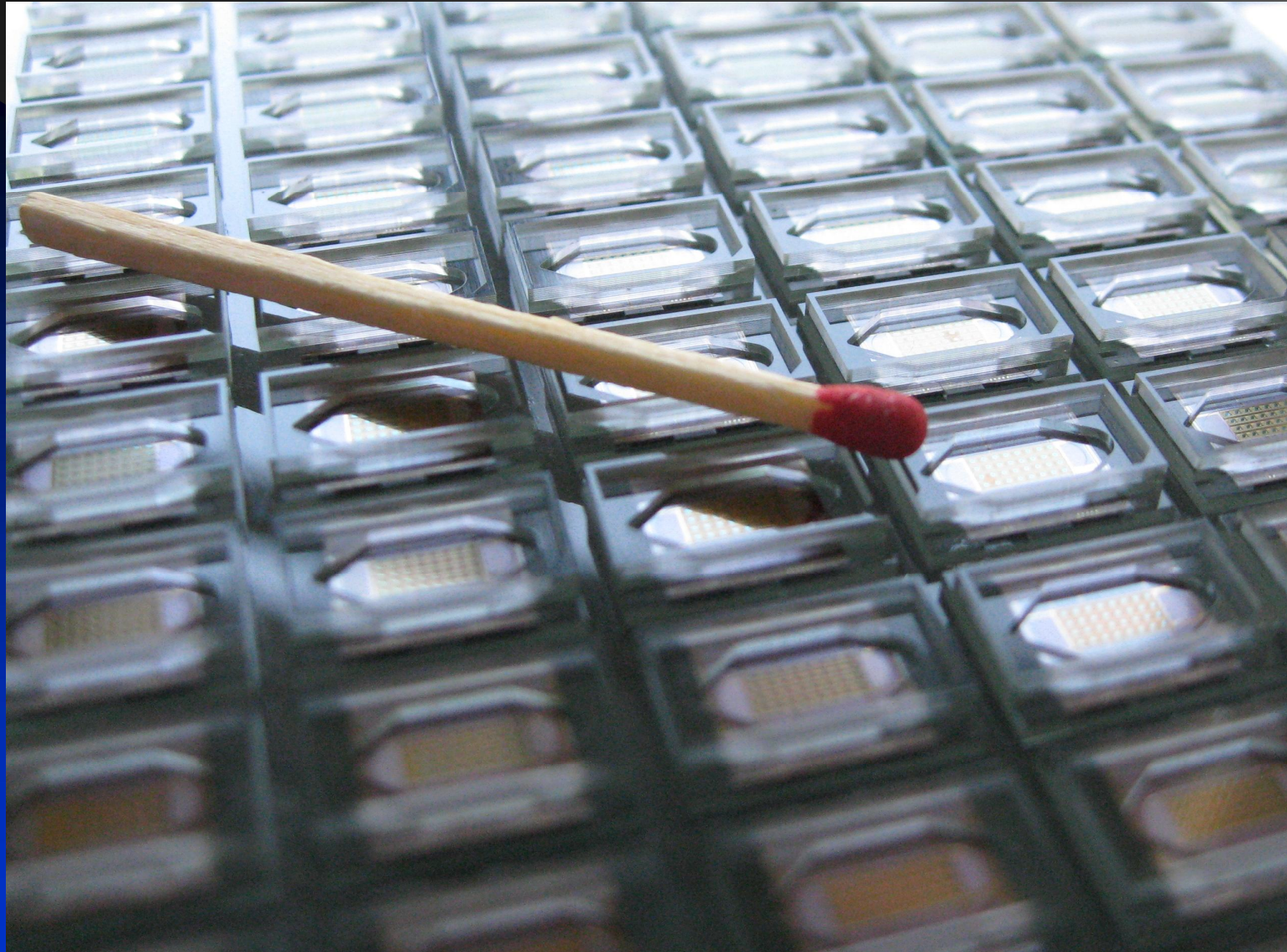
Structures with RMPD®-mask



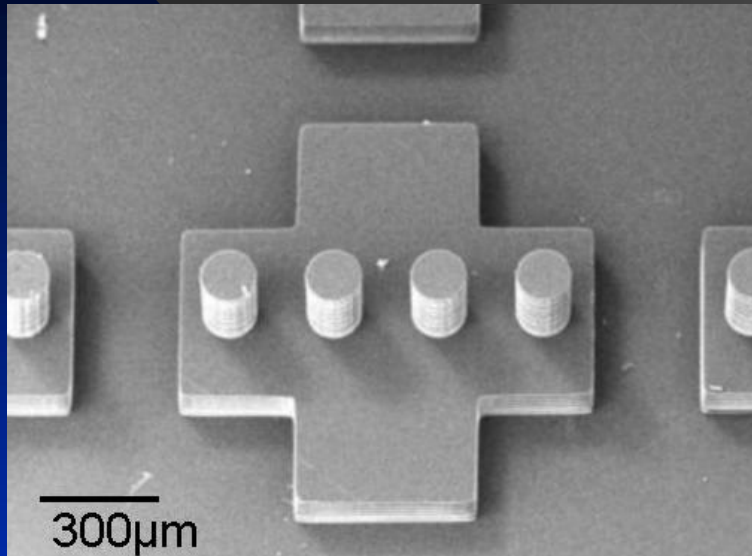
Properties

- Best accuracies
- Fast
- Limitations on geometric design
- Costs and delivery times for masks

Parallel batch production with RMPD®



Typical structure for mass production



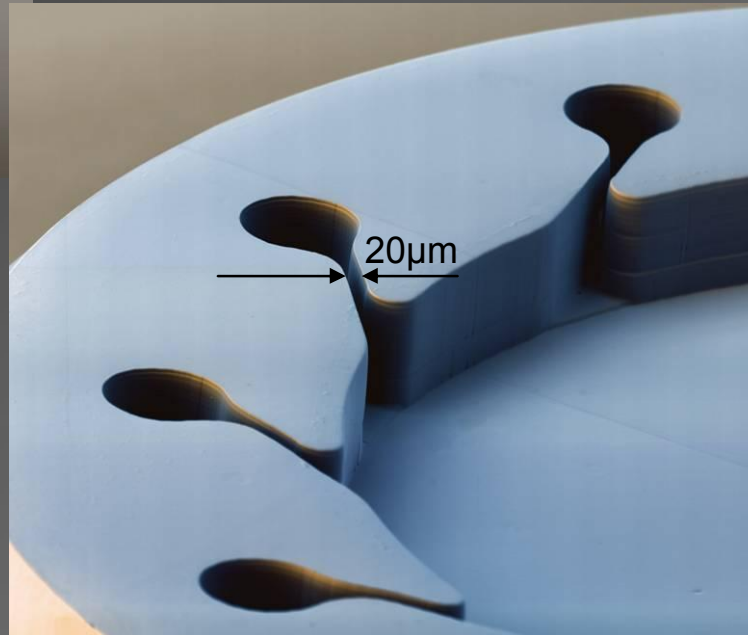
- series production without tooling
- RMPD®-mask allows production runs up to 150.000 parts per machine and hour
- Mass production with 5", 9", 14" and 350 mm mask
- Outlook: 610 mm and RMPD®-Rotation

Medical Application: Heart catheter in minimally invasive therapy

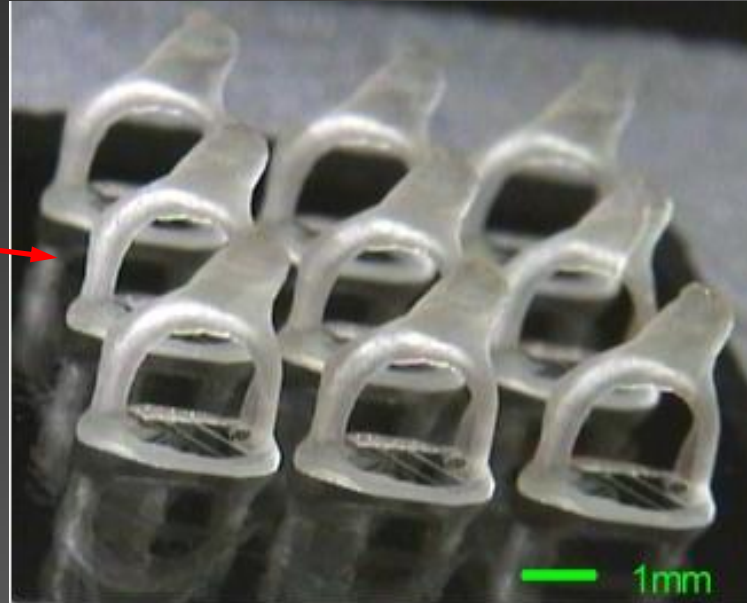
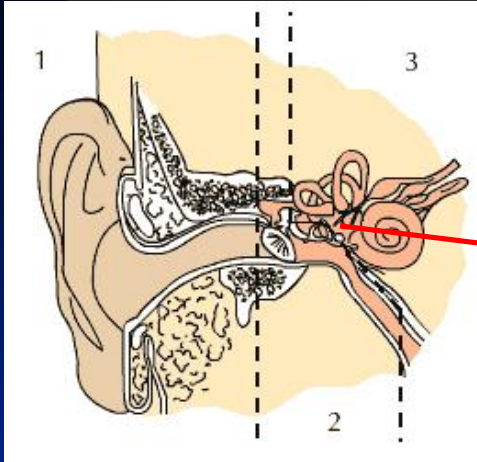


Milling head component of a catheter

- Nozzle plate for driving head
- Diameter = 4 mm
- Nozzle width = 20 μm



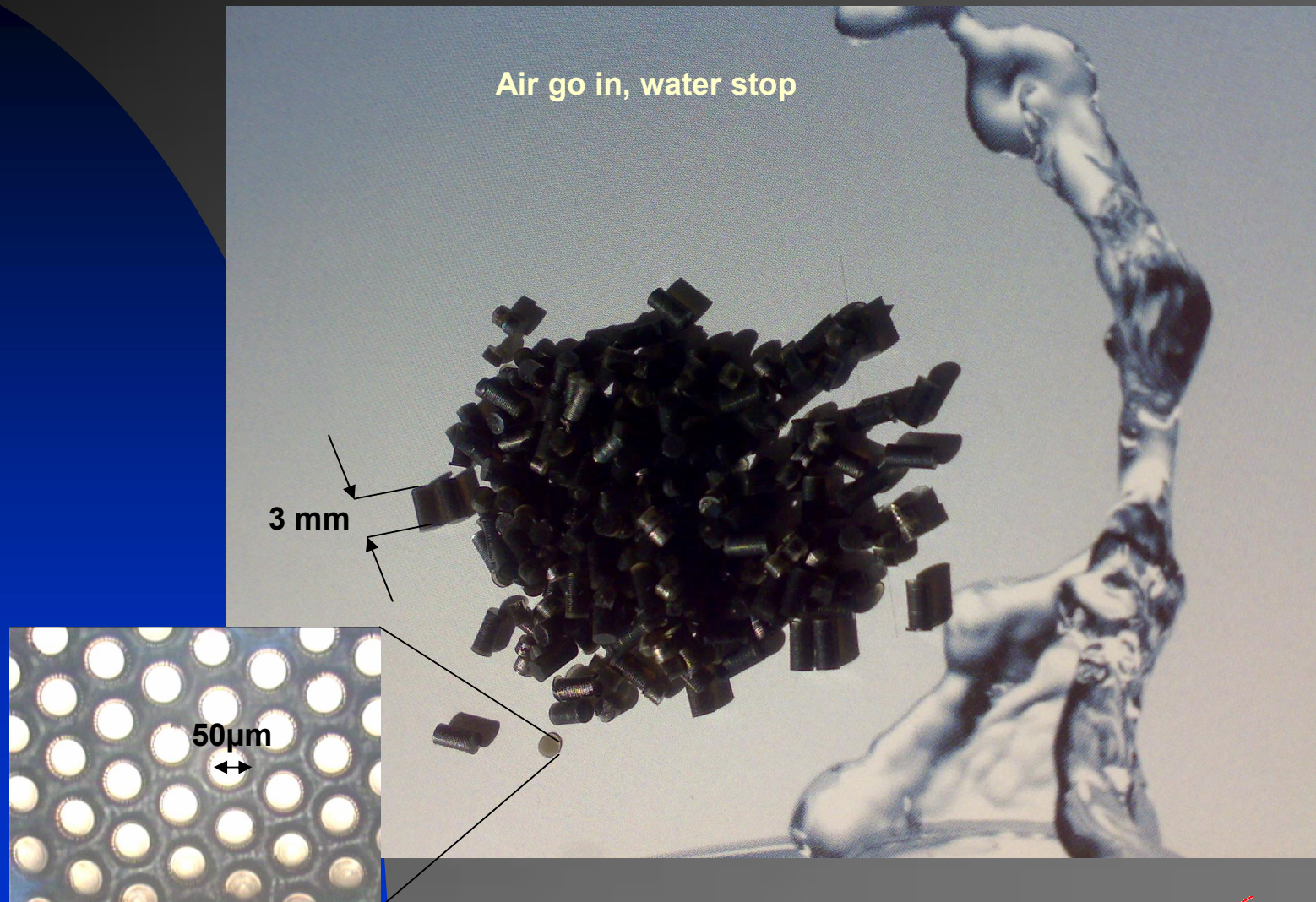
RMPD[®], a generative method borrowed from nature



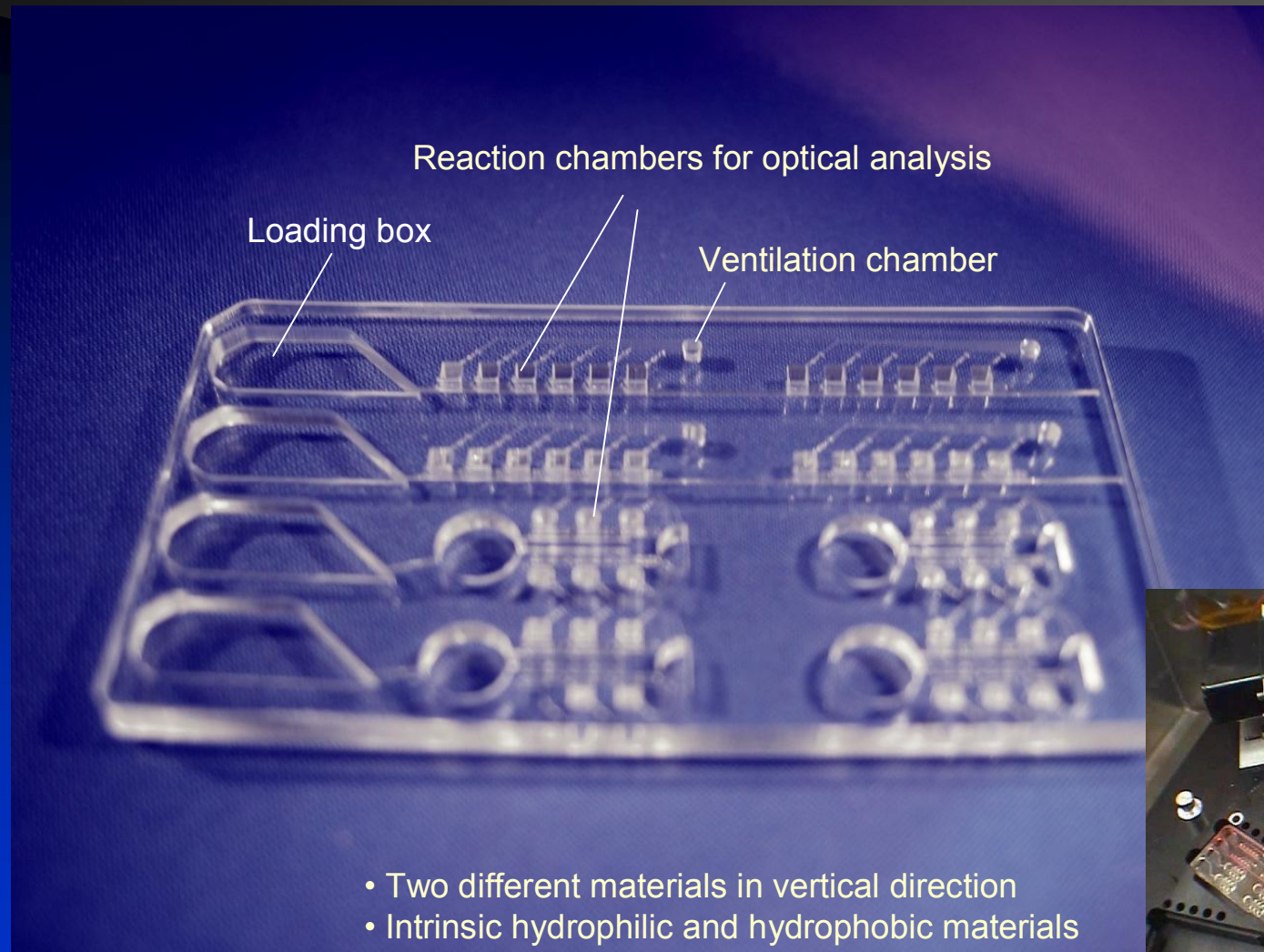
Example: CT scan of a stapes

- Any desired form
- CAD or CT based data possible
- fine and coarse structures combined
- bridges and gradient structures

Fluidic- stop structure, air vent at life science and consumer

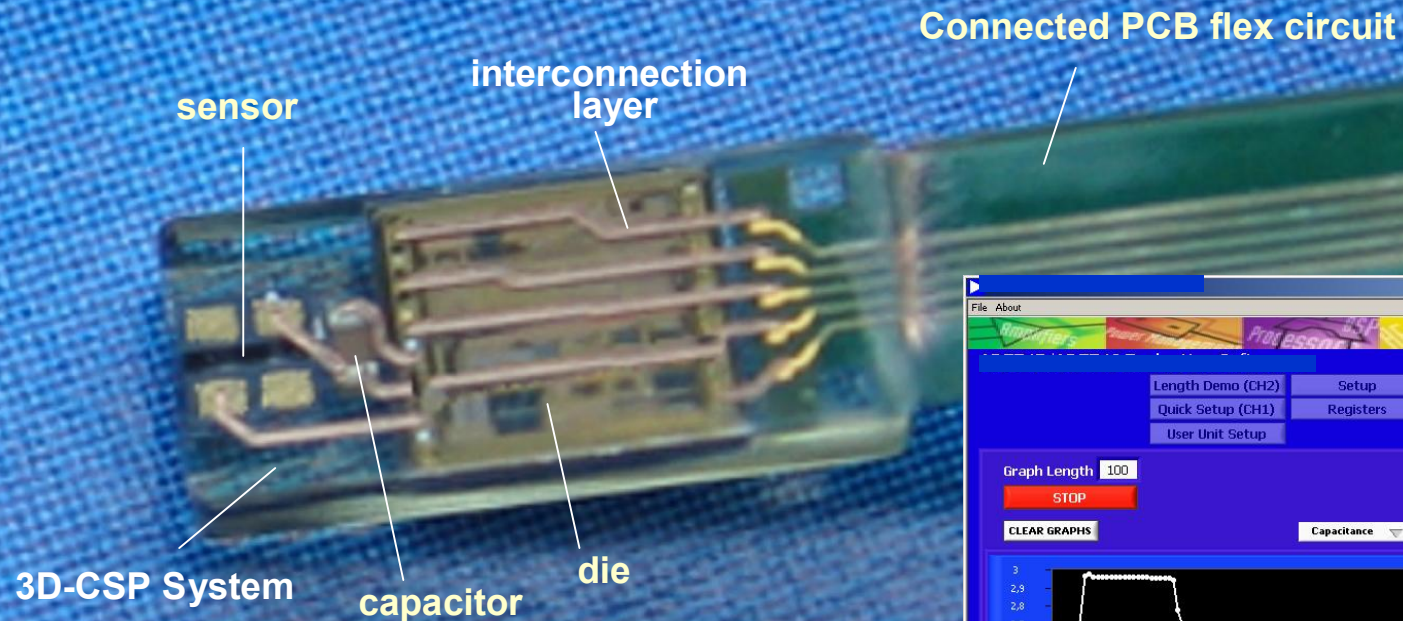


Microfluidic chips, automatically processed for analysis

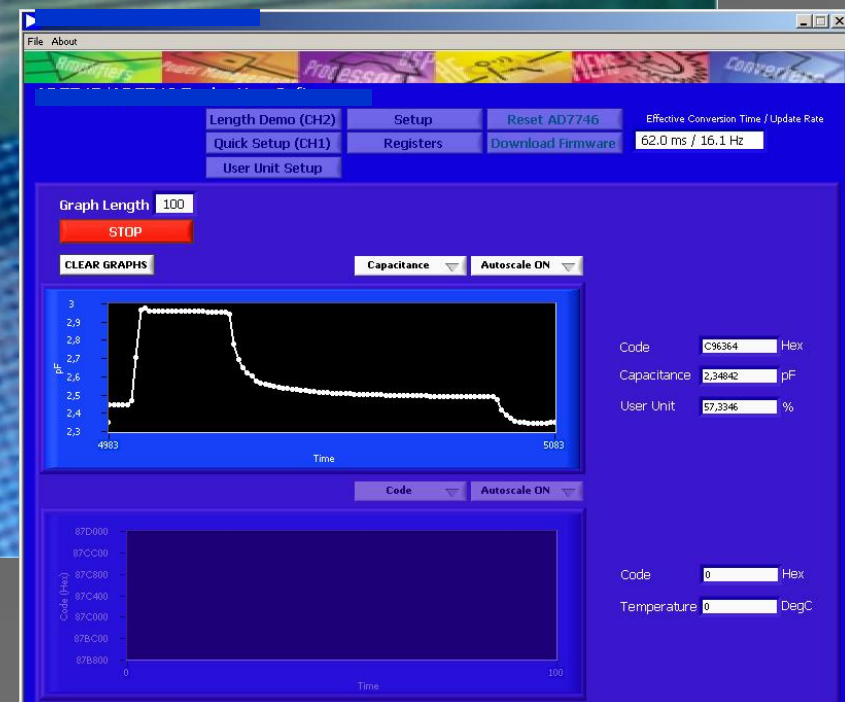


Sensor with 24-Bit Capacitance – to Digital Converter

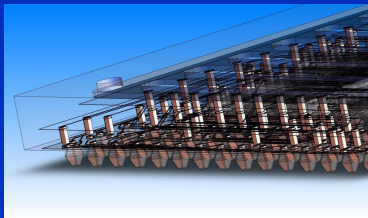
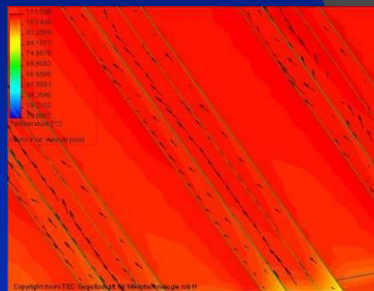
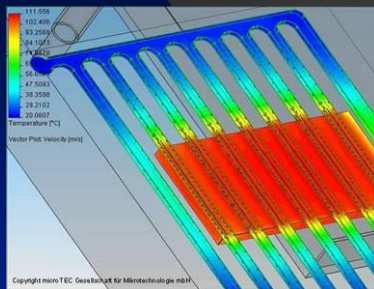
Technology: 3D-CSP with RMPD[®], special sensor adaptation with low interferences



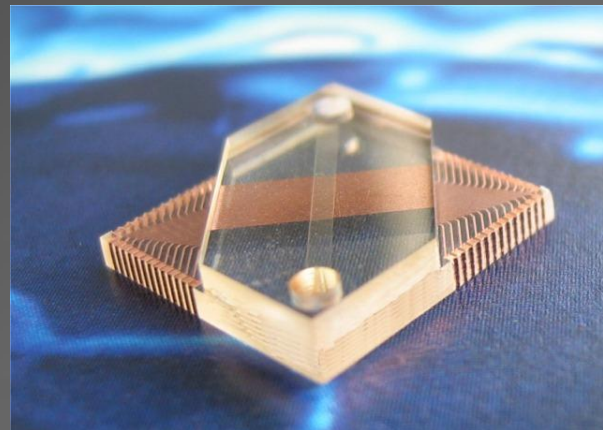
Temperatur sensor on chip resolution 0.1°C
Two wire serial interface (I²C- compatible)



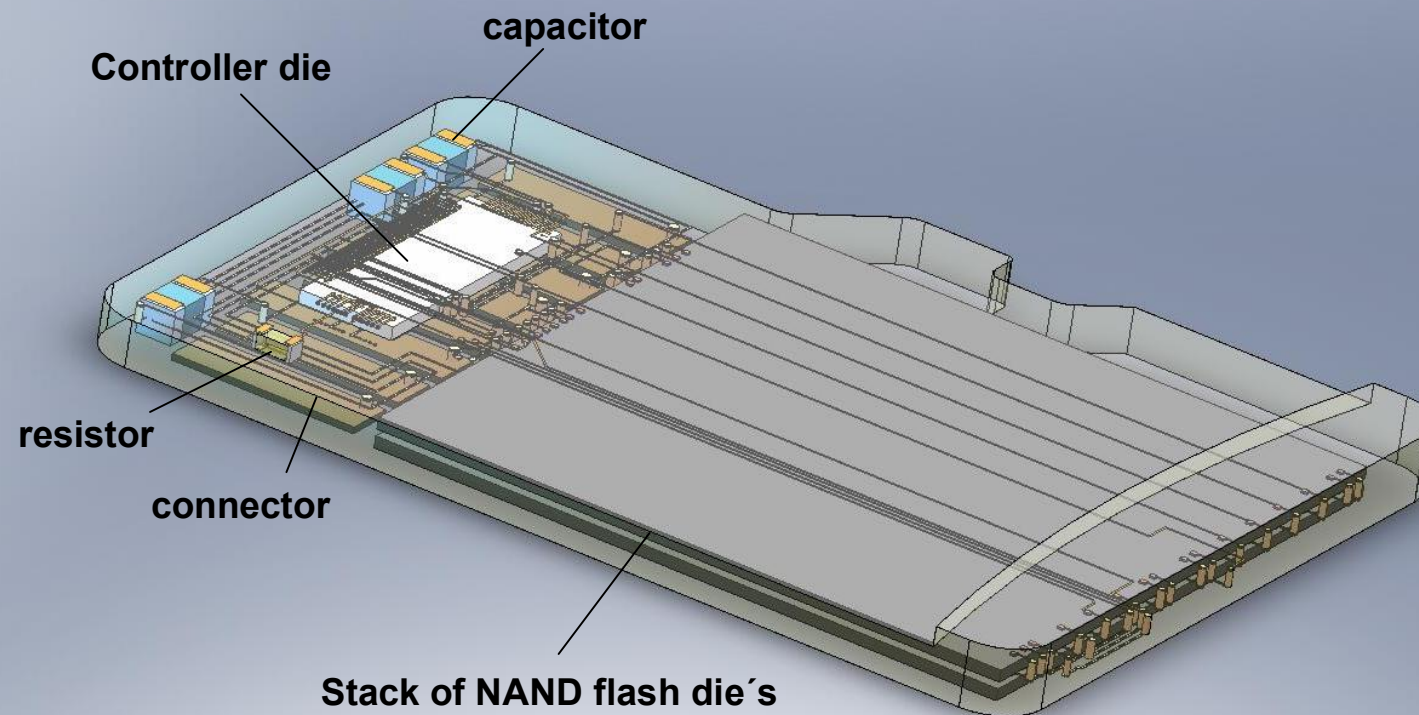
➤ 3D-CSP NMRC Thermal Simulation



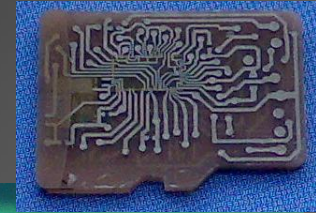
- Passive cooling: Possible
- Option: Active cooling via EHD pump



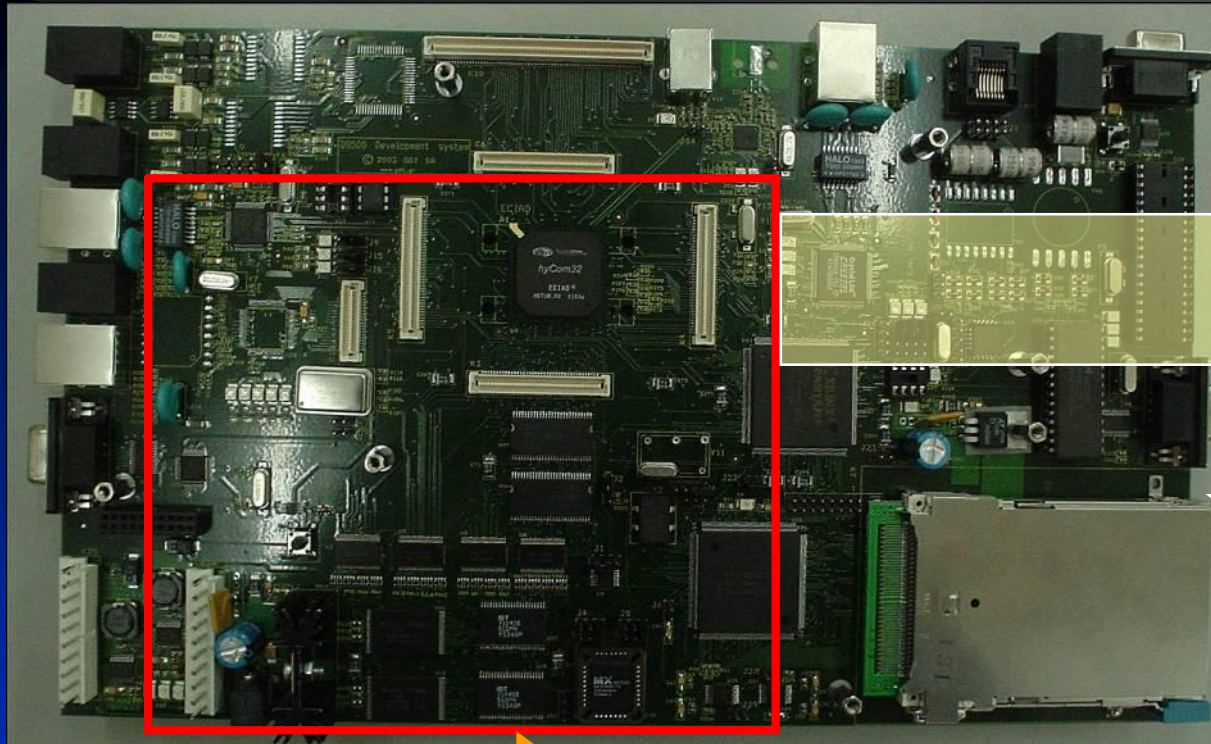
Micro SD up to 10 NANDs stacked



3D-CSP application: microSD SMART Card



System-in-Package Solutions based on 3D-CSP

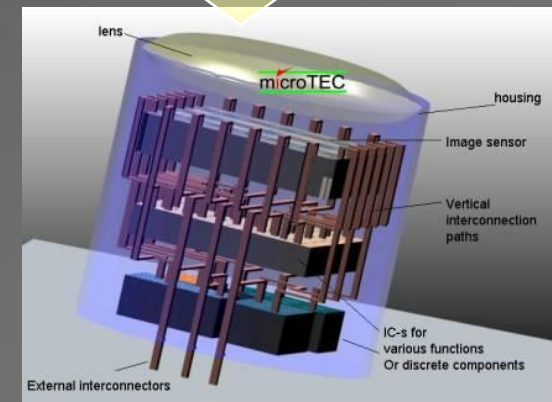


Only processor and networking subsystem!



Copyright: microTEC

Intelligent Networked Optical Sensor



Germany



Duisburg



Bad Dürkheim



The logo for microTEC, featuring the word "microTEC" in a bold, sans-serif font. The "i" in "micro" is red and stylized. The logo is flanked by two horizontal green lines.

Key Team

Andrea Reinhardt, CEO/CFO

She worked in leading position at Real-Film Ludwigshafen and started her career in Banking Citibank Mannheim and DGZ Bank Frankfurt. She is working for microTEC since 1996.

Dipl. Ing. Reiner Götzen, CEO/CTO

Inventor and founder of microTEC. He worked as scientist at University Duisburg, technical designer photo systems at Robot GmbH Düsseldorf and started his career at Thyssen Krupp AG in the field of precision mechanics. Mr. Götzen is working for microTEC since 1996.

Dr. Ing. Helge Bohlmann, Project Manager EC, Sales

He worked as project manager for IVAM and as sales manager for UBM measuring systems. Dr. Bohlmann is working for microTEC since 2000.

Advisory Board

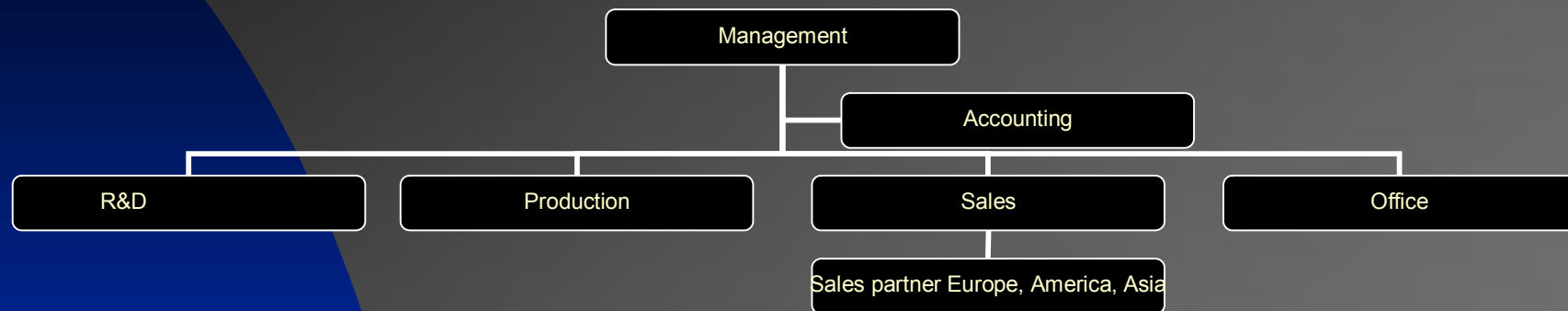
Dr. Lutz-Dieter Thiele: worked in top management positions at Omron Europa GmbH and Linotype-Hell AG. He is working as management consultant today.

Dr. Udo Bittner: worked in management positions at Siemens AG, Start Amadeus Ltd, and Thomas Cook AG he is working as Director IT at Deutsche Post AG since 2004.

Dr. Udo Sonnhof, SPI GmbH, Robotics and Optical Systems;



Organisation



Shareholder:

48% = IKB Private Equity GmbH - IKB Deutsche Industriebank AG

52% = (Dr. U. Bittner, Dr. Ing. H. Bohlmann, Dipl. Ing. R. Götzen, A. Reinhardt, Dipl. Ing. J. Rost)

microTEC
Gesellschaft für
Mikrotechnologie mbH

**Thank you for your attention,
don't hesitate to contact us for details!**

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Reiner Götzen +492033062050
<http://www.microTEC-D.com>**