

FORUM "INNOVATIONS FOR INDUSTRY" | USA-Session | 05.04.2011 | Hannover Messe

Manufacturing Automation for Micro and Nano Technology

Twan Korthorst, MSc EE
CEO





Introduction Phoenix Software

Manufacturing Automation for Micro and Nano Technology, Forum "Innovations for Industry", Hannover (D), April 5th 2011

We support customers worldwide to ...

- Enhance research, process and product development
- Improve quality and reduce time to market



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We support customers worldwide to ...

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By offering ...

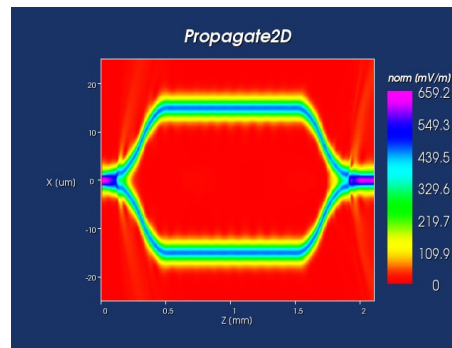
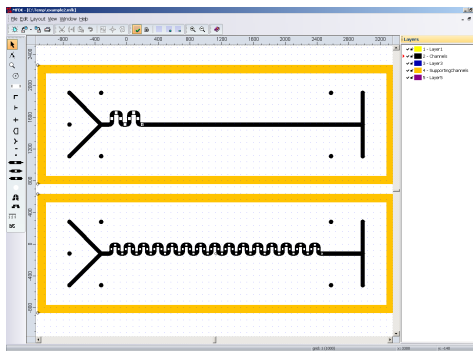


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Design flow automation

- Parametric chip and mask layout
- Circuit and physical simulations
- Process flow visualization





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Manufacturing automation

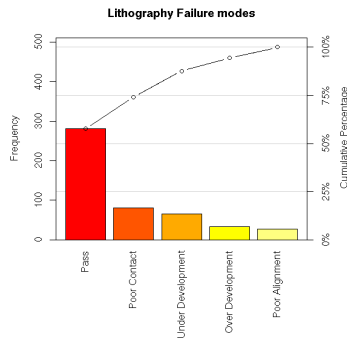
- Wafer tracking
- Cleanroom management
- Data analysis

Logbook of Batch 33

MC889 - Q1
Step 4 / 5: [equipment: HOTPLATE]
inProgress
Employee Account, Administrator
22-03-2010 17:23:35
not set

Controls Value
recipe: AZ-4533 softbake

Results Value
Start_Temperature: 95 [C]
End_Temperature: 95 [C]
time: 00:20:00



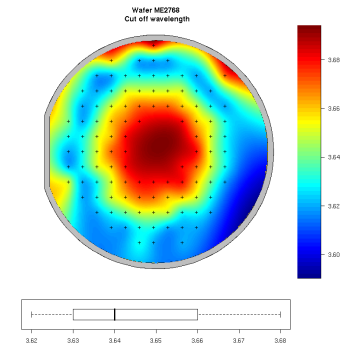
Period Hours Refresh Help

Plasmfab_310_320

Start: Sep 9 2008 09:00
End: Sep 9 2008 16:00
Owner: webuser7 (demo account 7)
Status: Confirmed

	1 D	3 D	5 D	1 W	2 W	3 W	1 M	<<	<	today	>	>>	
8 September 2008	mo	8	12	16	8	12	16	8	12	16	8	12	16
9 September 2008	tu												
10 September 2008	we												
11 September 2008	th												
12 September 2008	fr												

- E1
- Veeco_Dektak_8
- He_Ne_Laser
- Plasmfab_310_320
- Woolflam
- HNO3_S_A
- LEE
- Alcatel_SCM450
- Plasmos_SD_2002
- demi_water_ODR
- Rinsler_Dryer
- Sartorius_2004MP





Introduction Phoenix Software

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- Dedicated to MNT software solutions
- Founded in 2003
- Profitable
- Independent
- Worldwide presence
- Over 120 customers





Introduction Phoenix Software

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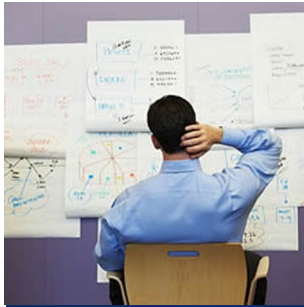
Highly qualified and experienced team

- 90 manyears experience in the field
 - Software development since 1991
 - >100 designs and process flows created
 - Multiple years fabrication experience
 - Managed first ISO qualification for MNT in Europe
 - Over 60 published scientific articles
- Commercial and academic backgrounds



Why Manufacturing Automation?

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Want to improve yield?

Manufacturing Automation will give you clear insight in process and equipment performance, yield and costs.



Like to satisfy customers?

Manufacturing Automation will enable you to deliver your goods on time, on spec and in the required quantity.



Tired of looking for the right process flow?

Manufacturing Automation will create a knowledge base for your valuable technology information.



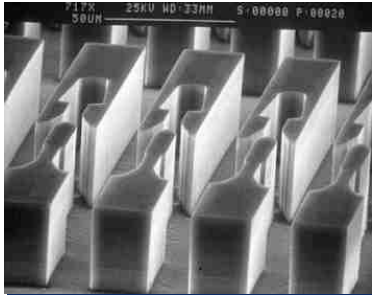
Why Manufacturing Automation?

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Want to focus on design?

Manufacturing Automation will support you by creating stable processes.



Developing new technology?

Manufacturing Automation will give you clear insight in process and equipment performance.



Knowledge leaving your institute?

Manufacturing Automation will create a knowledge base for your valuable technology information.



Manufacturing automation for MNT

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MNT compared to CMOS

- Process flow is a design parameter
- Lower quantities per product
- Enormous set of fabrication technologies

Lack of tools and working methods

- Software is ~15 years behind CMOS
- Trial and error is common practice

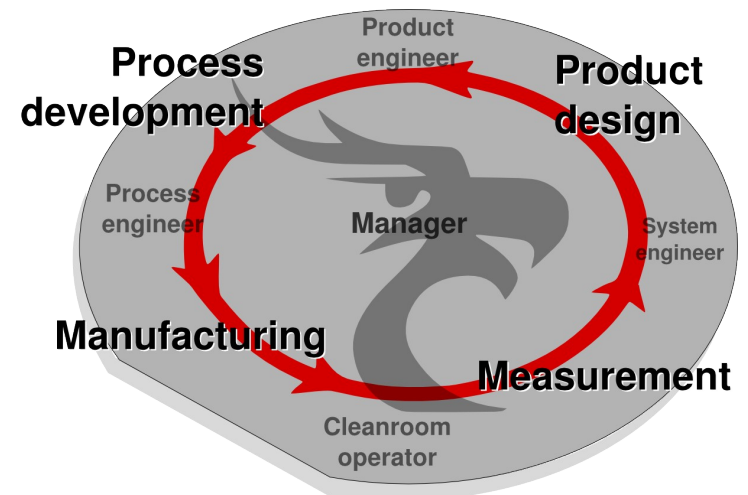
Integrated Product Creation Process

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Step 1: Understand and maintain the fabrication processes

Step 2: Use the process knowledge in the design

Step 3: Close the loop





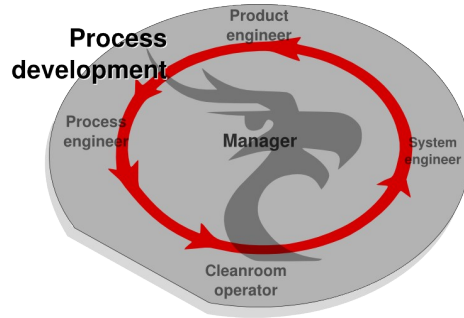
What do we deliver?

"All relevant information is up to date, in real time and uniformly available for everybody at any place to make faster and better decisions"



The Living Database - Benefits

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- Re-use process recipes
- Organise process flows
- Quality procedures

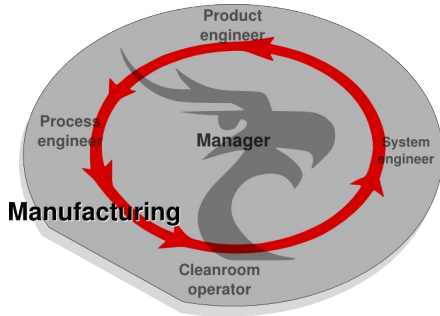
→ Save time and money

- Focus research on the 20% new technology in a process flow
- 80% less errors in making (new) process flows
- 50% reduction in time for designing new process flows
- Single mouse click tracing of usage of equipment and flows



The Living Database - Benefits

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- Clear instructions
- Wafer and device tracking
- Work in progress
- Equipment maintenance

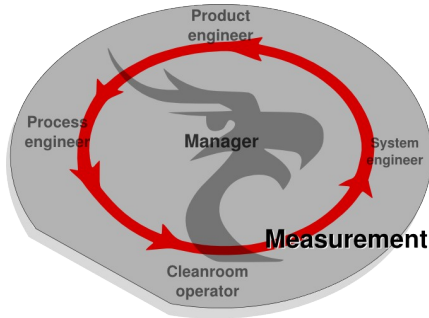
→ Save time and money

- Reduce processing errors by 20%
- Lower unscheduled equipment downtime
- Improve response time to (customer) inquiries



The Living Database - Benefits

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- Flexible reporting
- Retrieve, use and analyse up-to-date data
- Perform data analysis (eg.SPC)

→ Save time and money

- Increase yield
- Lower number of development iterations
- Control equipment performance
- Get management information



Summary

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- Currently trial and error is common practice, software tools are poorly used
- Manufacturing Automation is required to bring MNT to a mature state
- The Living Database is a powerful and flexible system especially designed for MNT companies *and* institutes
- Phoenix Software solutions support the integrated Product Creation Process



Phoenix Software

Solutions for Micro and Nano Technologies



Design flow automation

- Parametric chip and mask layout
- Circuit and physical simulations
- Process flow visualization

Manufacturing automation

- Wafer tracking
- Cleanroom management
- Data analysis

CREATE YOUR DESIGN | MANAGE YOUR CLEANROOM

Meet us in Halle 6 at the IVAM pavillion Stand H18 F4

www.phoenix-mst.de