

# SEERS Workshop - Dresden, 12-11/12-2000

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Infineon Regensburg

Part of the European Project APC 300

as well as

Infineon SC 300 Dresden

AMD Dresden

ASI Berlin

ST Microelectronics Russet, F

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Change from

Applied Materials AMAT 8300 (Metal Etch)

to

Lam Research TCP 9400 PTX (Poly Etch)

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## **New Task Definition for Infineon Regensburg**

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System            | LAM TCP 9408PTX                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Process           | poly etch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Plasma diagnostic | OES, SEERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Tasks             | Definition of process windows and process relevant limits<br>Tool matching for the same type of tool<br>Optimisation of wet clean and conditioning procedures (Waferless Auto Cleans and Waferless Recovery Steps)<br>Improvement of tool and process stability due to Process Mix (Hardmask and Resistmask-Applications on same chamber)<br>Increase of equipment lifetime also for new technologies<br>Increase of up-time and OEE<br>Improvement of the tool performance of equipment |

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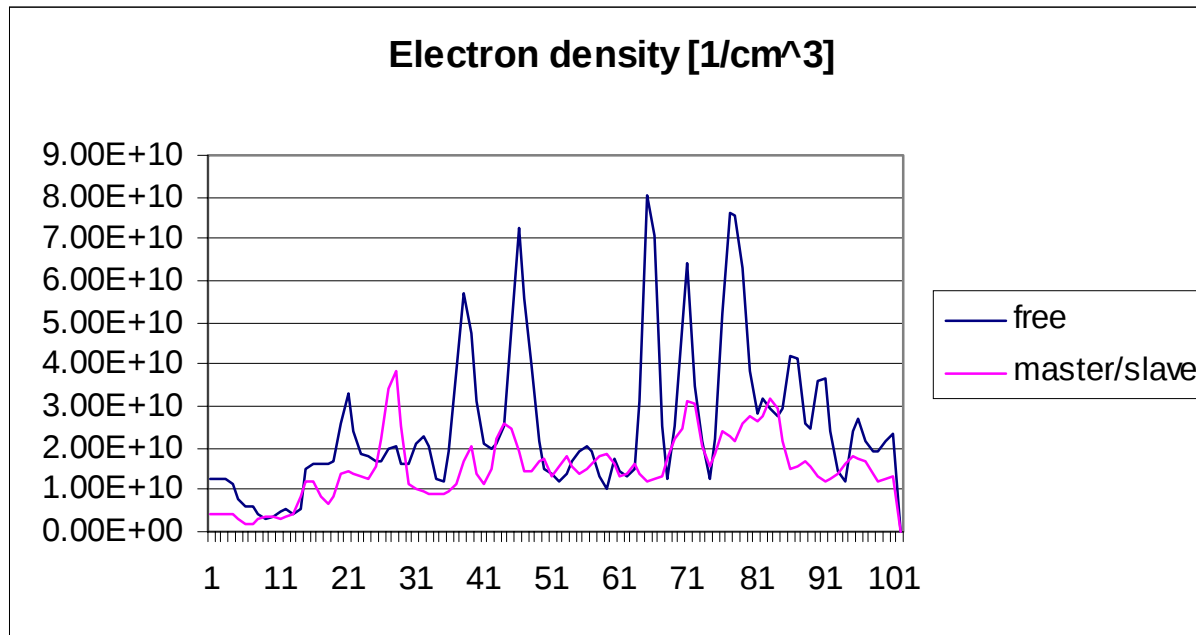
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## Status in Regensburg

- 2 Chambers (Lam Poly TCP 9408 PTX)
- Data Collection with Brookside done
- Data Condensation to APC Trend ongoing
- Sensor Positioning ongoing

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## - Example for Fault-Detection



Free: high oscillation in e-density observed, due to missing phase-correlation of top and bottom power

Master/slave: much less oscillation with fixed phase-angles of top and bottom power

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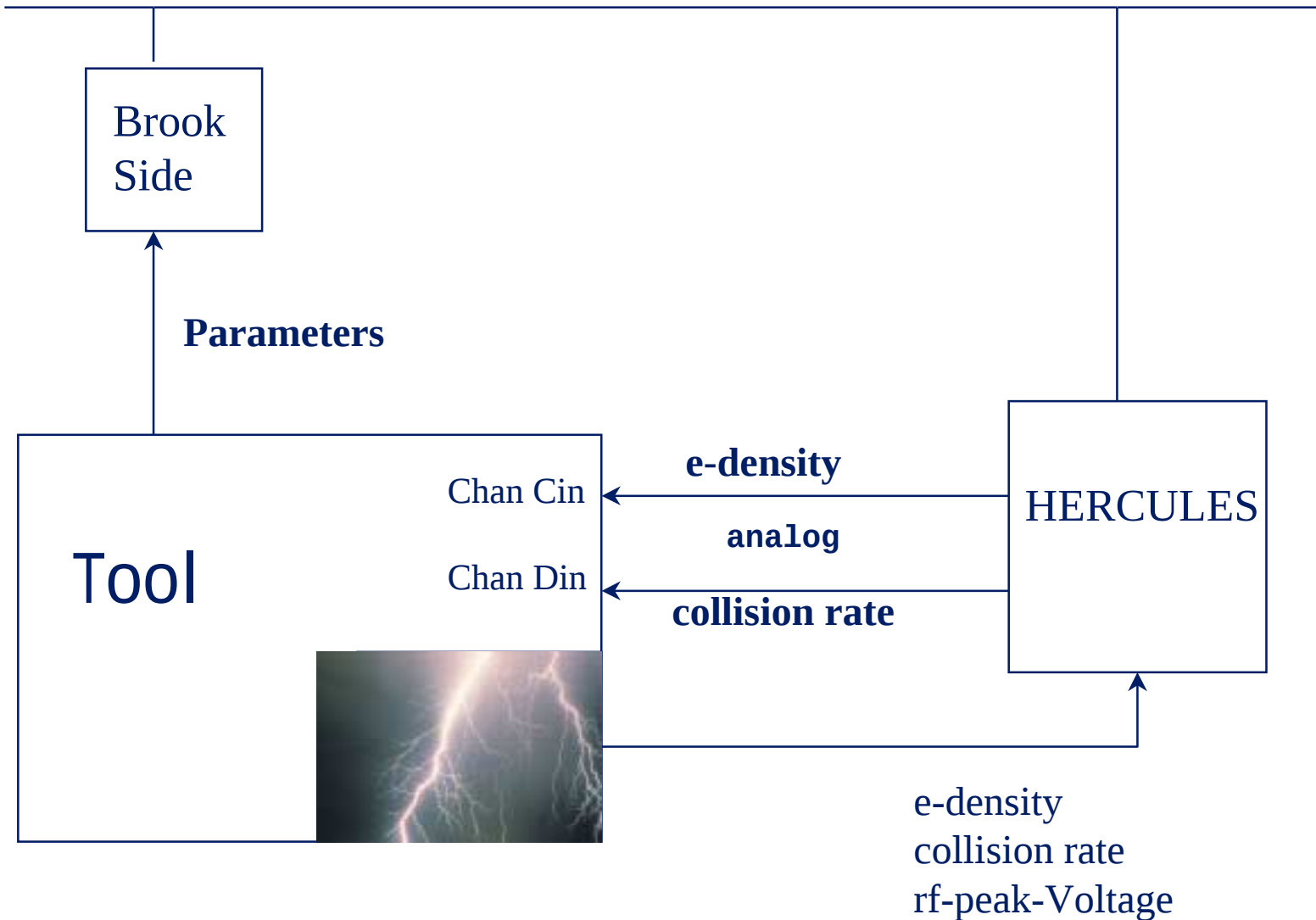
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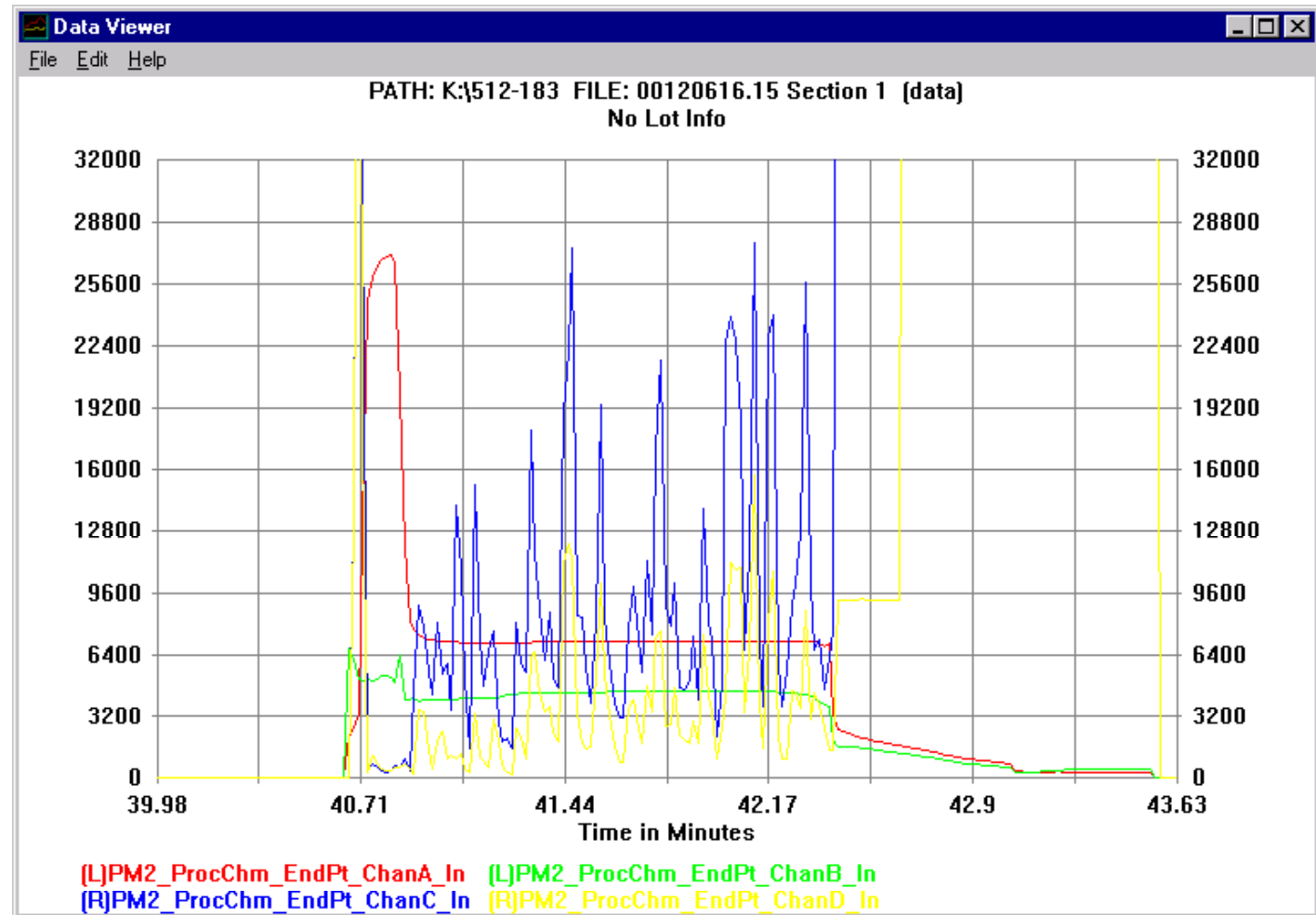
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## FAB - LAN



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## Data Collection with Brookside



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APC Trend

SPC Tool for Infineon

Data Condensation of all collected raw Data (Gas Flows, Matchbox Parameters, e-Density etc.) possible for Lots and/or Wafers, e.g. Medians, Averages, Std Devs, Ranges etc.

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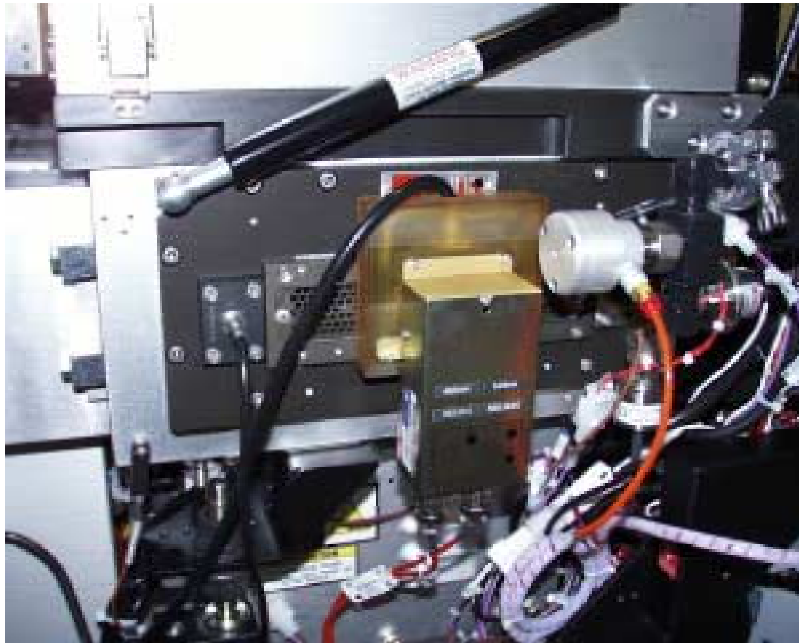
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- Sensor Positioning ongoing

Now (blind due to the liner)



Plan



Status : ASI will provide a prototype of a new side plate, which will hold the sensor to see into the plasma

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## Conclusion

Data Collection established (50%)

SEERS Data not usefull yet for the goals  
defined within the Project