IX International MEMS Forum 2020
«Digital technology and wireless solutions»

MAPPER LLC

Improving Yield in MEMS Manufacturing

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National programs of Digitalization

НАЦИОНАЛЬНЫЕ ПРОЕКТЫ РОССИИ

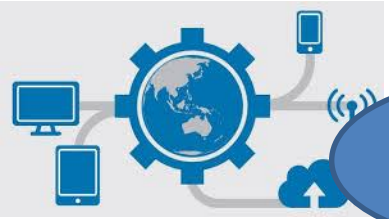
ЦИФРОВАЯ ЭКОНОМИКА

2018-2024

National program “Digital economy”

Federal Projects related to the industry:
- Information security / Информационная безопасность,
- Digital technology / Цифровые технологии,
- Digital state management / Цифровое государственное управление

Role of digital technology and wireless solutions/
Роль цифровых технологий и беспроводных решений



Customers

Regulatory agencies

Suppliers

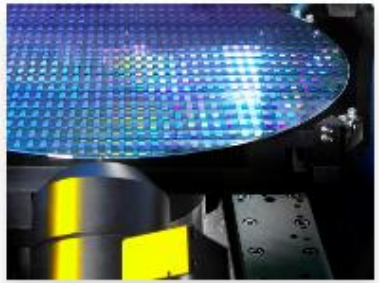
Big Data

Connection communication

Automation

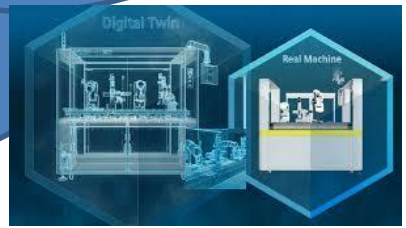
IoT System Integration

Resolution increase through algorithms for signal recovery



Automation of wafer inspection through advanced algorithms (automated recipe creation & automated defect classification)

Digital twins
-virtual product
-virtual tool



In-situ inspection and adaptive process control

Role of automatization in MEMS Fab yield increase /

Роль автоматизации в увеличении выхода годных на МЭМС производстве

Introduction - MAPPER LLC
mapperllc.ru

Mapper is a MEMS foundry

We offer

- technology development for realization of MEMS design
- production line of automated tools for manufacturing small and medium sized series

Mapper Fab has cleanroom
- ISO 6
- 1500 m^2

Fab yield increase by defect reduction/ Увеличение выхода годных за счет сокращения дефектов

1

Wafer incoming inspection

Входной контроль пластин

2

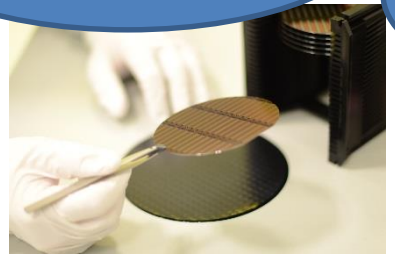
Tool contamination monitoring

Контроль чистоты процессов, оборудования

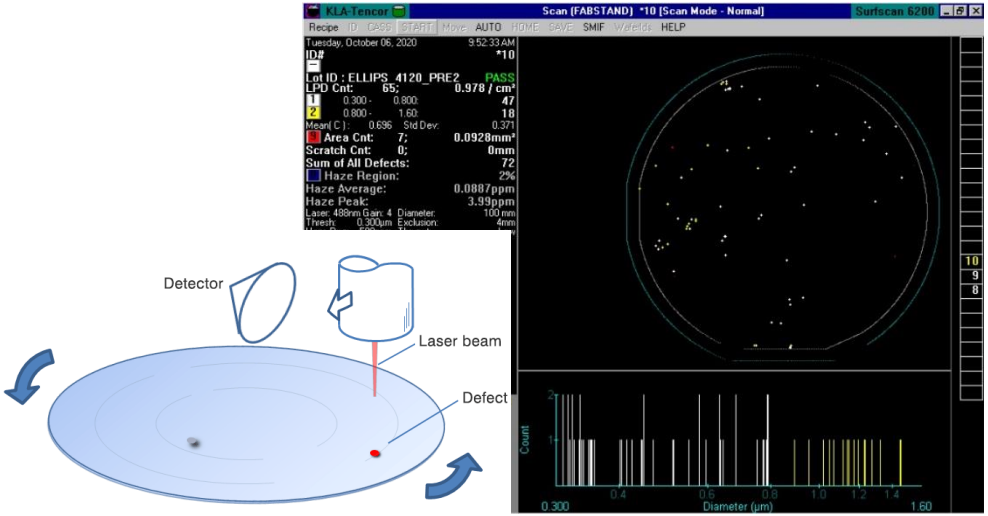
3

Defect detection system during the early phases of the product life cycle

Система обнаружения дефектов на ранних стадиях производства



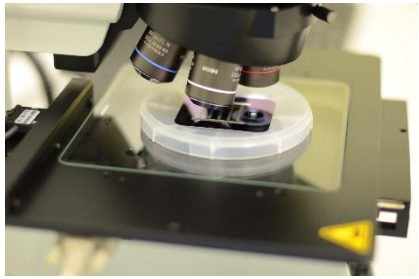
1. Wafer incoming inspection/ Входной контроль пластин



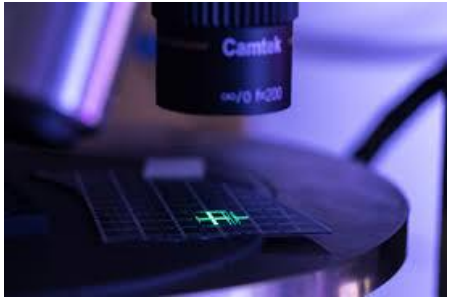
2. Tool contamination monitoring/ Контроль чистоты процессов, оборудования

- weekly tool/processes contamination monitoring

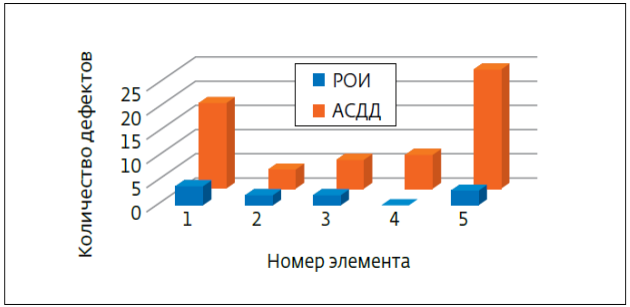
3. Defect detection system/ Система обнаружения дефектов

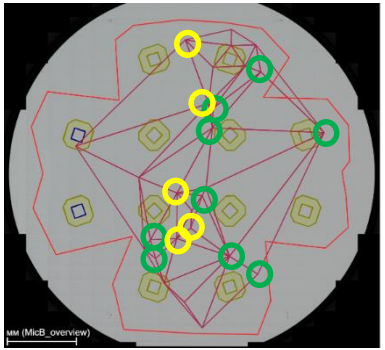


manual inspection

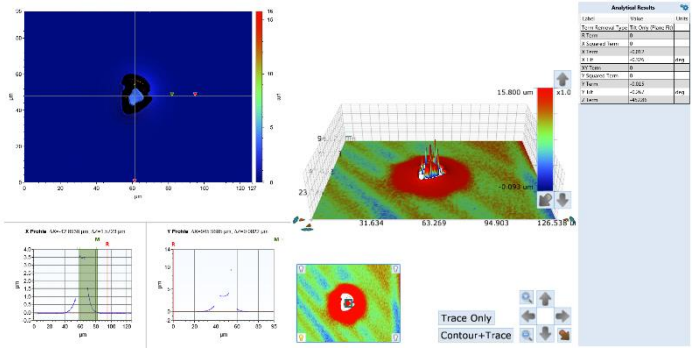


automated inspection



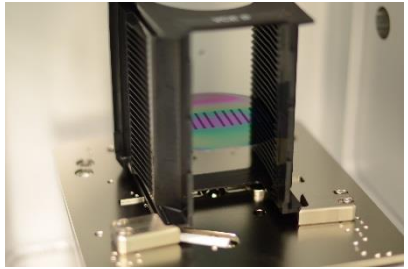


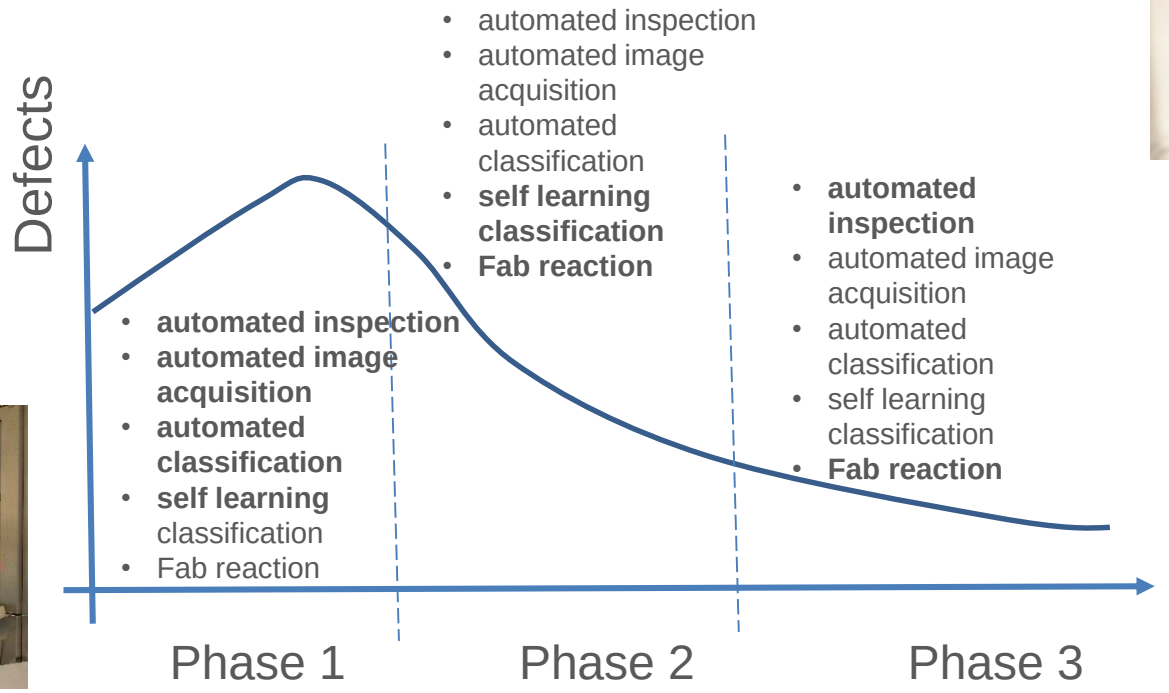
- automated analysis
- automated classification
- self learning classification



Automated defect detection system in MEMS manufacturing. K.Raketov, N.Israilev, A.Kazachkov, E.Zablotskaya, I.Rod, M.Ryabkov, A.Isachenko, D.Shamiryan. **NANOINDUSTRY**. Vol. 11 No. 7–8 (86) 2018.

Implementation of automated litho defect detection system/ Внедрение автоматизированной системы обнаружения дефектов литографии





Thank you for your attention!
Спасибо за внимание!

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