Nanobiotechnology for *Phytophthora* diagnosis

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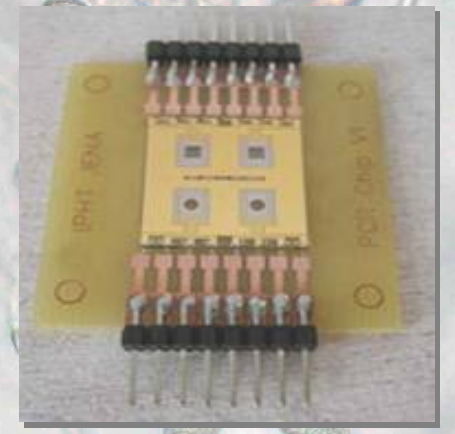

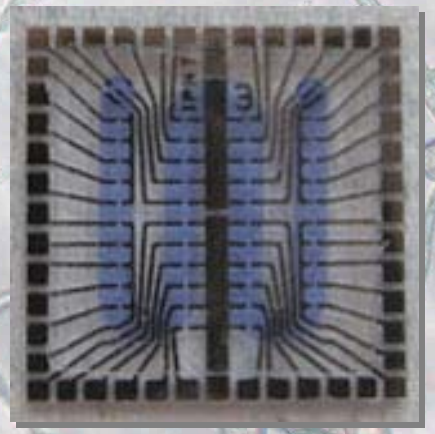

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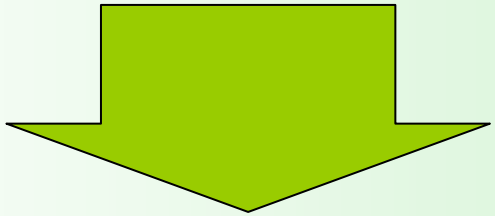
Bundesanstalt für Landwirtschaft und Ernährung

aim of the project

Julius Kühn-Institut
Bundesforschungsinstitut für Kulturpflanzen

Development of a detection system

- species specific
- robust
- applicable in the field
- sensitive
- easy to handle
- results within short time

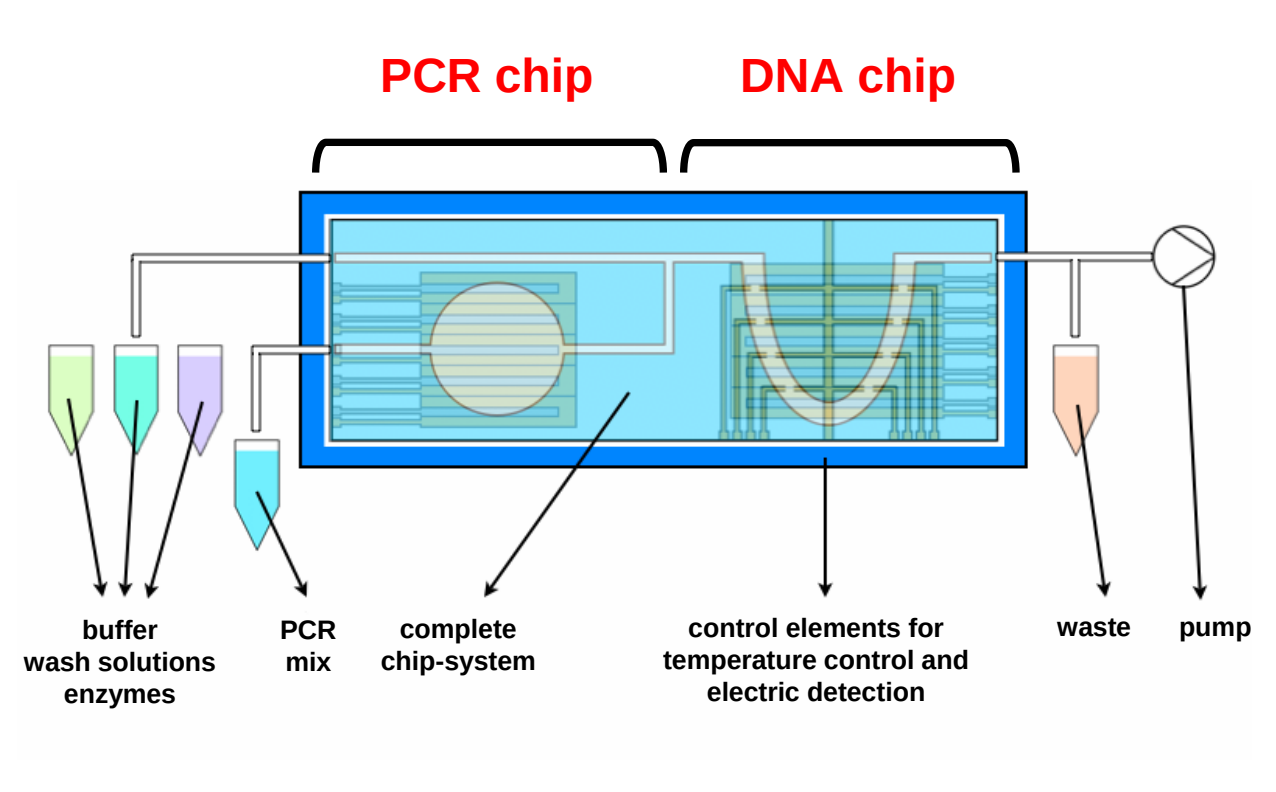


chip-based diagnostic system

functional principle of the chip system

combined microchip for chip based PCR amplification (PCR chip) and DNA detection (DNA chip) via hybridization

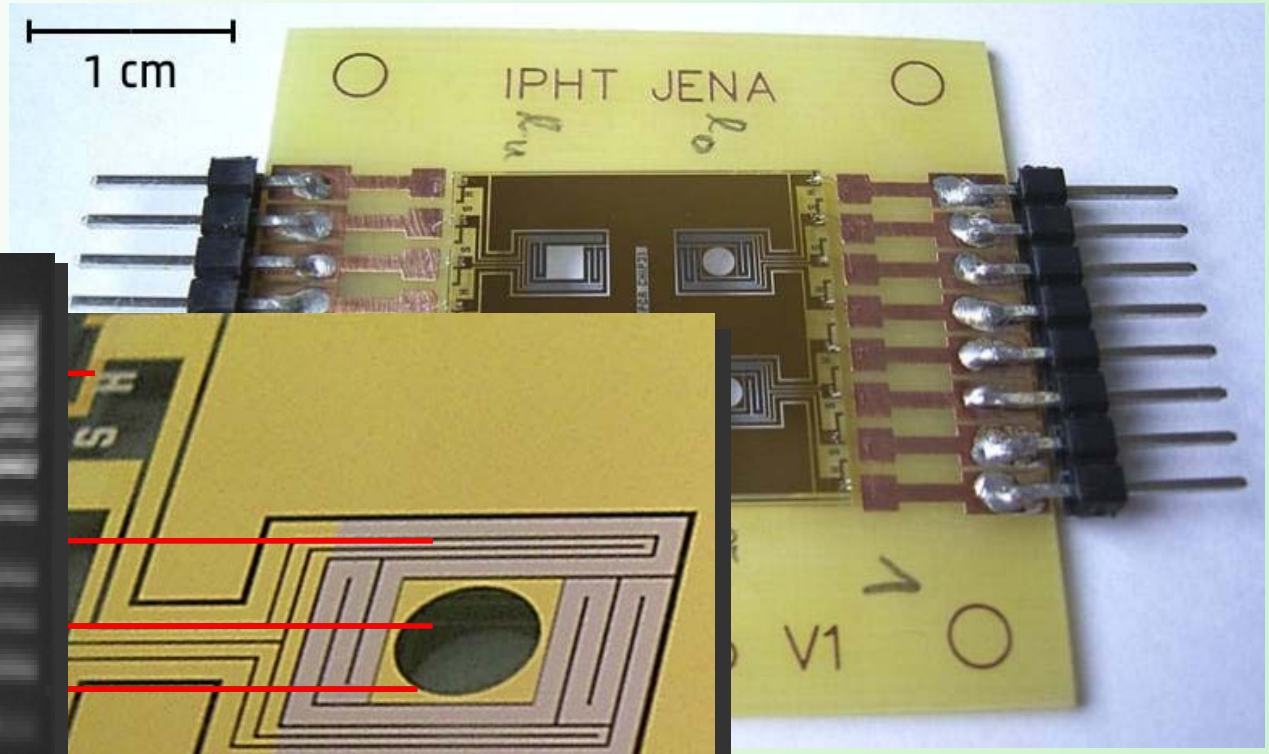
scheme of microsystemic implementation of automatized chip systems combined with an integrated microfluidic system for anlysis of nucleic acids

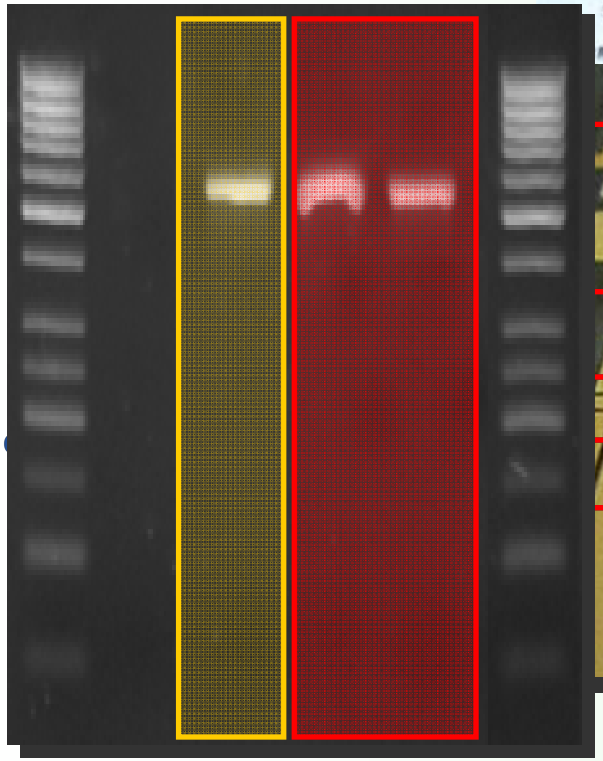


PCR chip module

on chip amplification und labeling of DNA by PCR

single PCR chip



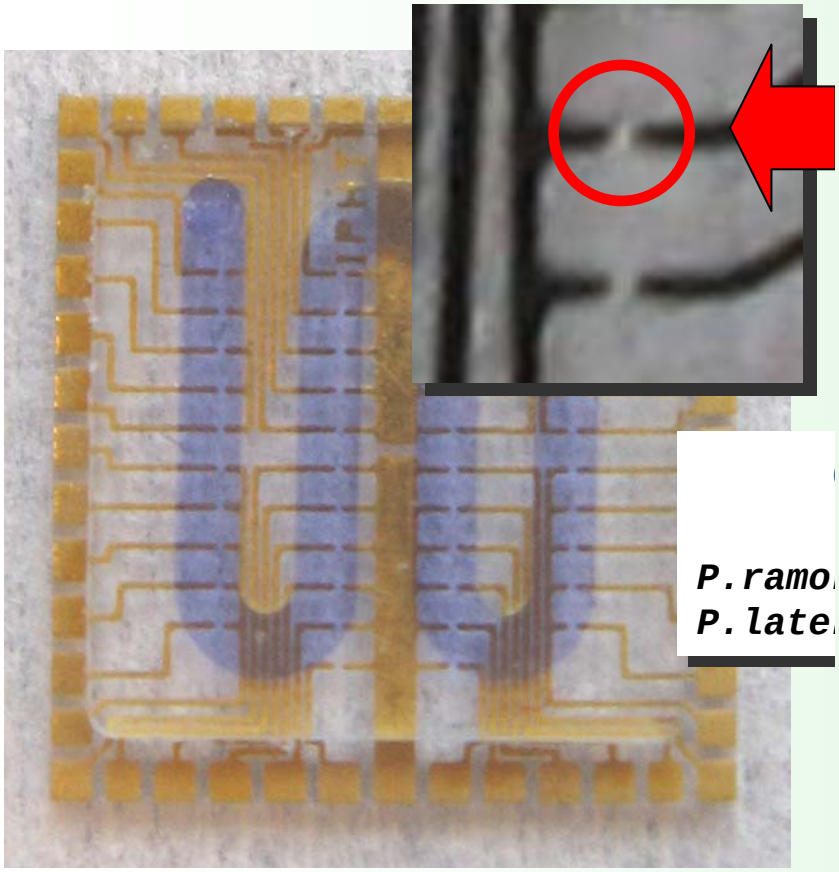


results: amplification of *P. ramorum* ITS2 fragment identical with conventional thermocycler and PCR-chip

RESA with control and analysis software for chip-based PCR amplification

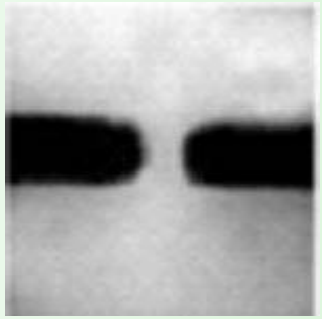
DNA chip module

detection of *Phytophthora* DNA fragments on chip



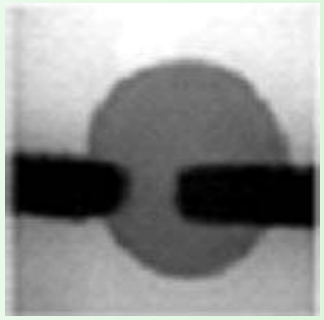
combined gold chip with 42 detection sites and microfluidic

first results: hybridization of closely related *Phytophthora* taxa



unspecific hybridization:

P. lateralis* : *P. ramorum



specific hybridization:

P. ramorum* : *P. ramorum

Acknowledgements

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