



Radboud University



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AGRO-PHOTONICS WITHIN ONEPLANET RESEARCH CENTER

MARCEL ZEVENBERGEN, PROGRAM MANAGER

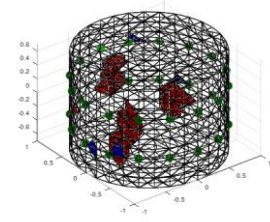
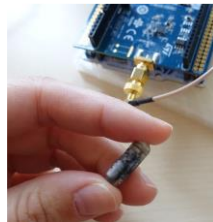
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OnePlanet Research Center

Innovation center for chip and digital technology in agri, food and health founded by:

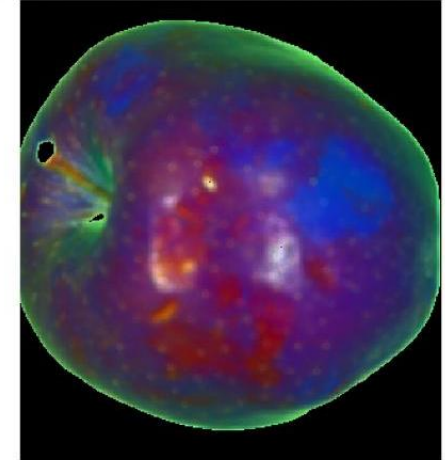


with digital twins enabled by nanotechnology as key enablers:

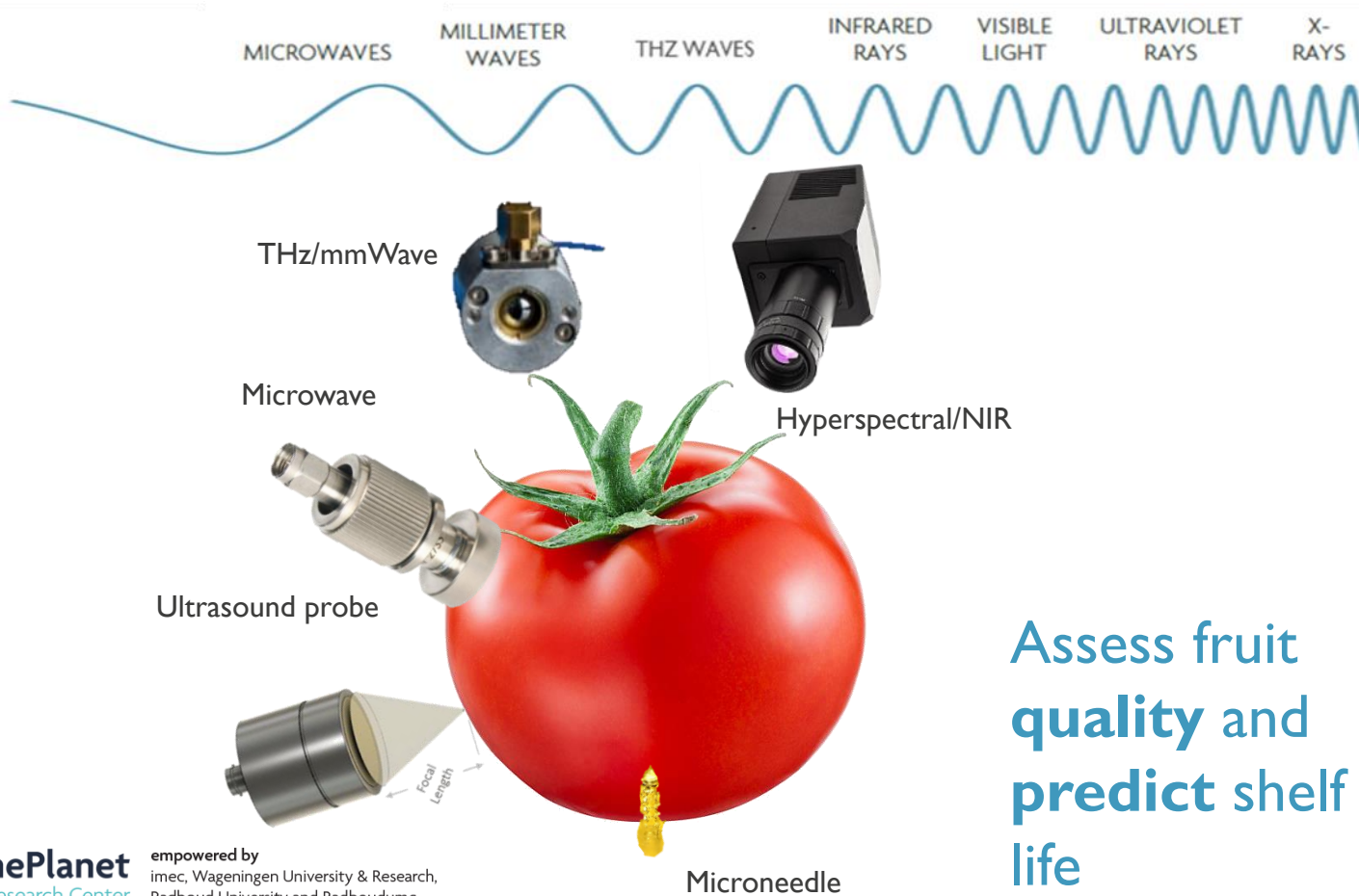


EMERGING SENSING PROGRAM INNOVATION GOALS

- Create **unique** novel **sensing** tools for unmet sensing needs in the agri-food domain
- Based on the following sensing principles:
 - Hyperspectral imaging
 - Mm wave/microwave/THz imaging
 - (photo)acoustic sensing
 - Minimally invasive chemical and optical sensors
- Validate in use-cases across the agri-food value chain
- Sandbox: quick develop – test – improve learning cycles
- **Impact:**
 - Accelerate development & adoption of new sensing technology
 - Explore a wide range of new Agtech and Foodtech applications
 - Rapid validation of sensing technology that has not entered the market yet for specific sensing needs; from low to high TRL



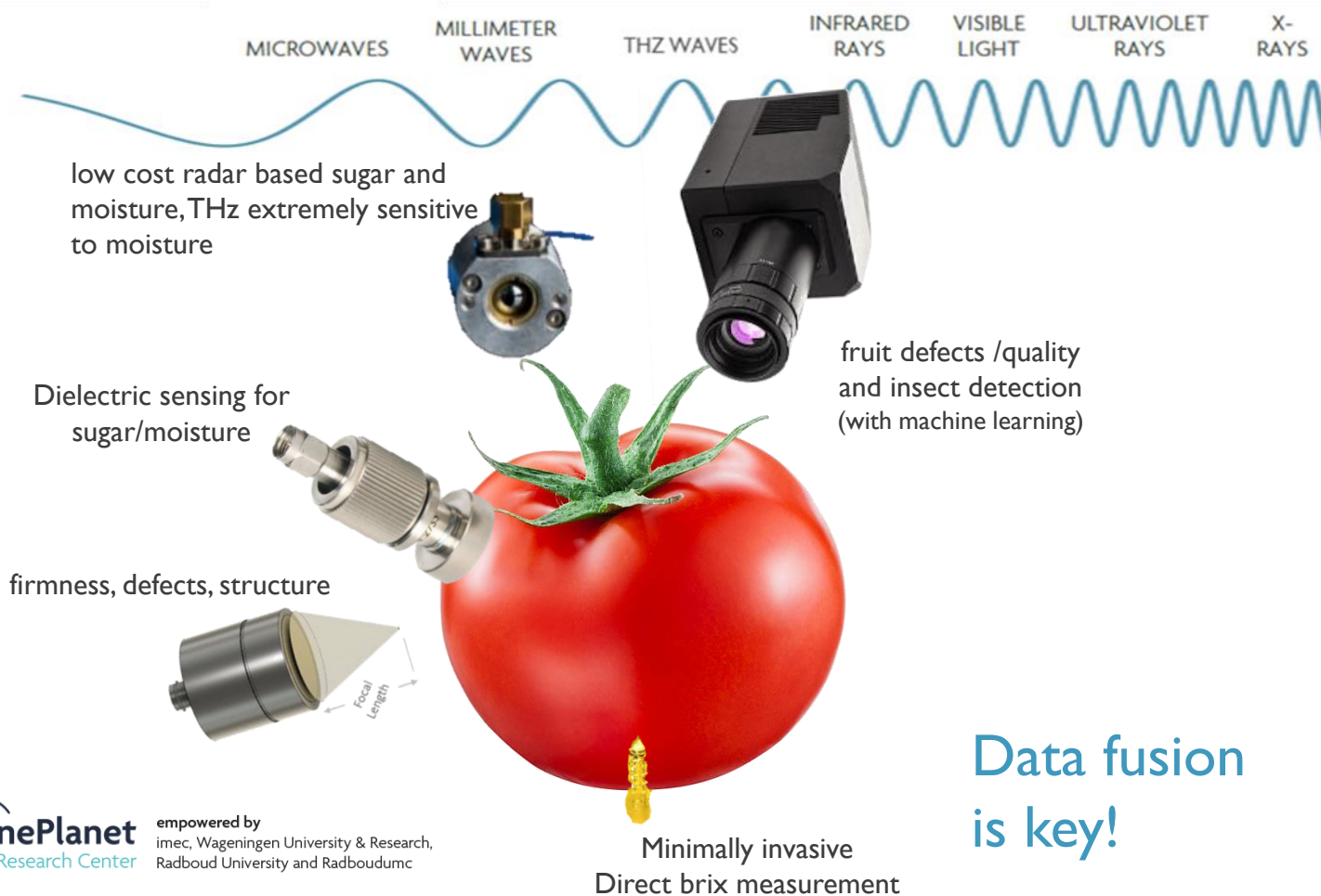
PHOTONICS ENABLES NONDESTRUCTIVE SENSING



Assess fruit
quality and
predict shelf
life

Digital
Twin

NONDESTRUCTIVE SENSING

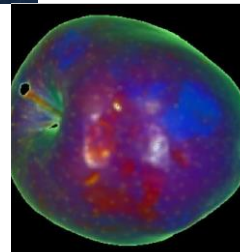
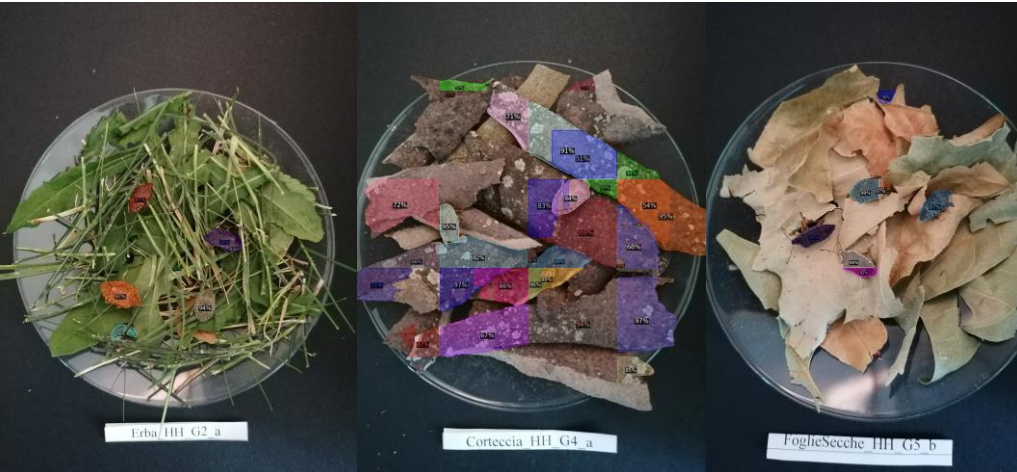


Digital Twin

Data fusion is key!

DETECTION OF INSECT PUNCTURE DEFECTS

- Detection of *Halyomorpha halys* and hidden **fruit damage** caused by the bug



OnePlanet Nitrate Sensor



The logo features the text "OnePlanet" in a large, bold, white sans-serif font, with "Research Center" in a smaller, white sans-serif font below it. The text is centered between two white, curved lines that form an open circle.

OnePlanet

Research Center



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