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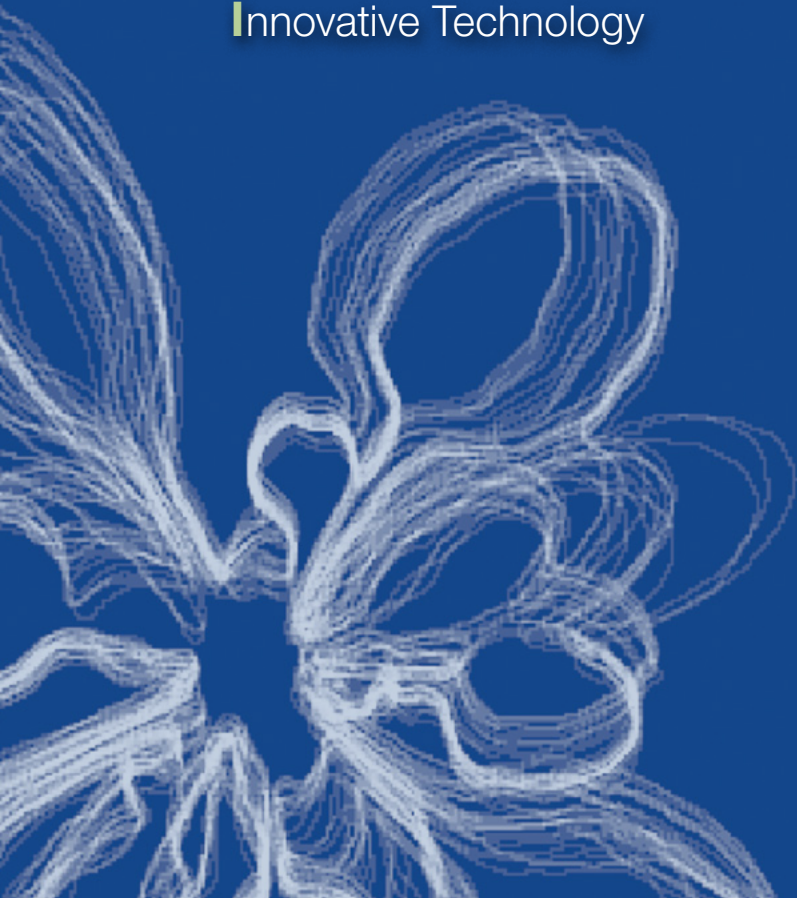
 **Photon
Systems
Instruments**
Professional Instruments
for Plant Science, Biotechnology
and Agriculture

PSI Research Center

Plant Phenotyping

Science of Excellence

Innovative Technology





PSI Research Center

Plant Scientists for Plant Scientists

At PSI plants are the basis for most of our research. We have decades of experience in developing innovative technology for both the environmentally controlled cultivation of plants and for sophisticated non-invasive analysis of various plant traits. We are team of plant scientists that understand your precise requirements. For this reason we established the PSI Research Center where the newest high-end technology is available for your research.

Realize Your Ideas

- Perform your own research supported by the PSI scientific team
- Choose a complete phenotyping service performed by the PSI researchers
- Make your students skilled: diploma work or Ph.D. positions are opened at PSI Research Center
- Cooperate with us and turn your remarkable ideas into reality

Experience Our Research Facilities

- Automated Plant Phenotyping Systems
- High-End LED based plant growth facilities
- Modern laboratory (molecular biology, analytics, microbiology)
- Newest PSI instrumentation and technology
- Accommodation directly in the PSI Research Center



Plant Phenotyping Technology

Accelerate your research with our INNOVATIVE technology. PlantScreen™ Systems offer complete PHENOTYPING solutions for automated multidimensional analysis of multiple morphological and physiological parameters with minimum time requirements and human resources.

Building up on PSI patronage, the newest available sensor technology is used for monitoring of plant growth, development and performance. PlantScreen™ Phenotyping Systems provide flexibility of use with various species ranging from young *Arabidopsis* to manifold crop plants. To meet precise scientific needs the PSI phenotyping systems are based on both sensor-to-plant and plant-to-sensor concept.

Science of Excellence

PSI team comprises numerous plant scientists and engineers with extensive expertise in optics, electronics, software development and automatisisation. Our laboratories are equipped with modern technologies to support the development of the newest equipment manufactured by the PSI team.

Standard molecular biology and analytical laboratories are integral part of our center. Our scientific laboratories are opened to you.

www.plantphenotyping.com

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Compact Phenotyping System
in Controlled Environment



Modular Phenotyping System
in Greenhouse

Choose Your Plant Phenotyping

PlantScreen™ Phenotyping	Plant Height	Throughput	Environment
Compact system	0–40 cm	320 plants	Controlled <i>(WI-FytoScope)</i>
Modular system	0–150 cm	270 plants	Greenhouse
XYZ system	0–150 cm	12 m ² <i>(2240 pots / 200 ml)</i>	Greenhouse
Field system	0–250 cm	1200 m ² <i>(20 × 60 m)</i>	Field

XYZ Phenotyping System in Greenhouse

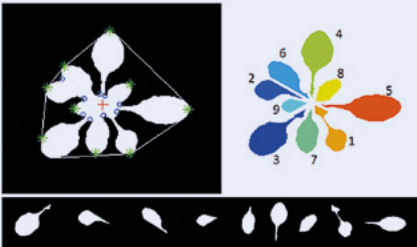
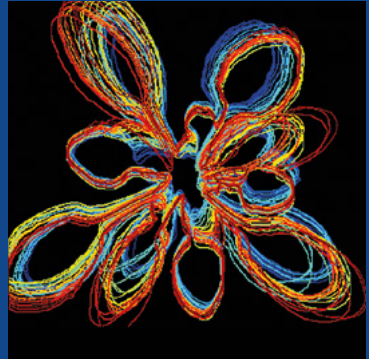
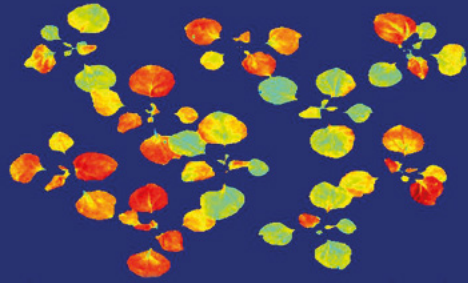
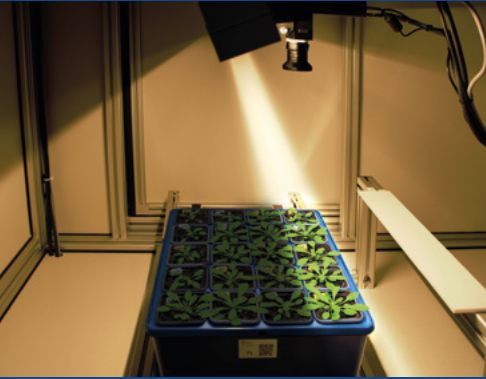


Field Phenotyping System



Hyperspectral Imaging

Pigment composition, biochemical compounds, nitrogen content, leaf and canopy water status, ...



Leaf	1	2	3	4	5	6	7	8	9
Area(px)	1511.00	684.00	890.00	295.00	885.00	1478.00	539.00	694.00	1699.00
Perimeter	202.89	134.95	150.27	73.01	134.23	205.92	95.50	164.27	215.10
Compactness	0.79	0.81	0.90	0.94	0.92	0.77	0.95	0.61	0.84

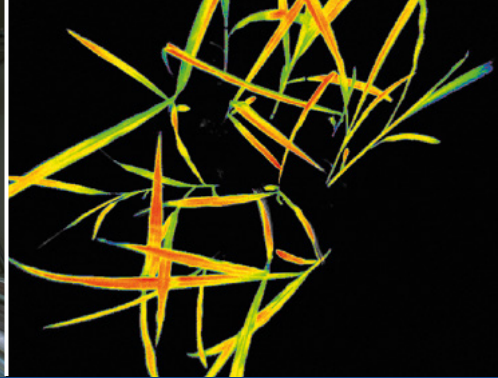
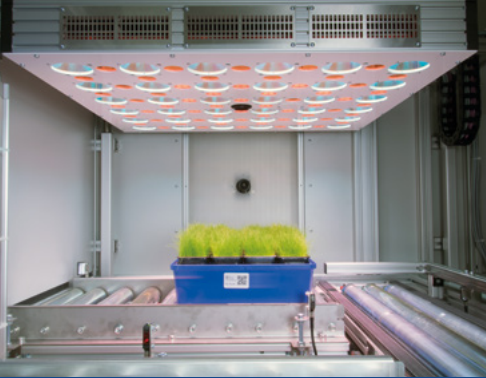
RGB and Morphometric Imaging

Shoot biomass, growth dynamics, shoot shape, color index, leaf development tracking, ...



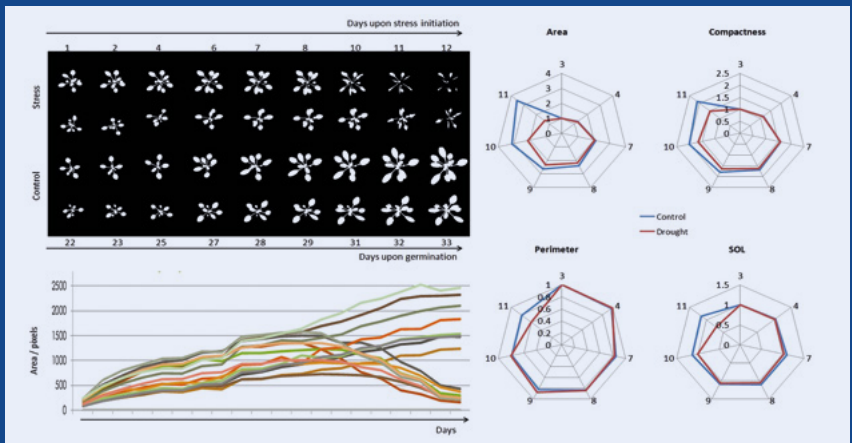
Weighing / Watering

Programmable delivery of both water and nutrients, specific watering regimes, watering schemes to exact volume, relative volume or predefined weight, ...



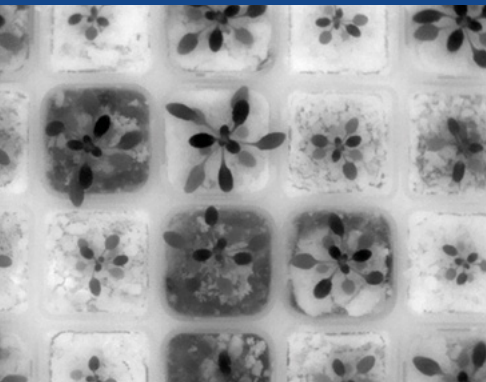
Chlorophyll Fluorescence Imaging

Photosynthetic status, quantum yield, non-photochemical quenching, electron transport rate, ...



Developmental Analysis

Shoot biomass, growth dynamics, shoot shape, leaf development and tracking, color index, ...



Thermal Imaging

Leaf and canopy temperature analysis, study of stomata opening, respiration, ...