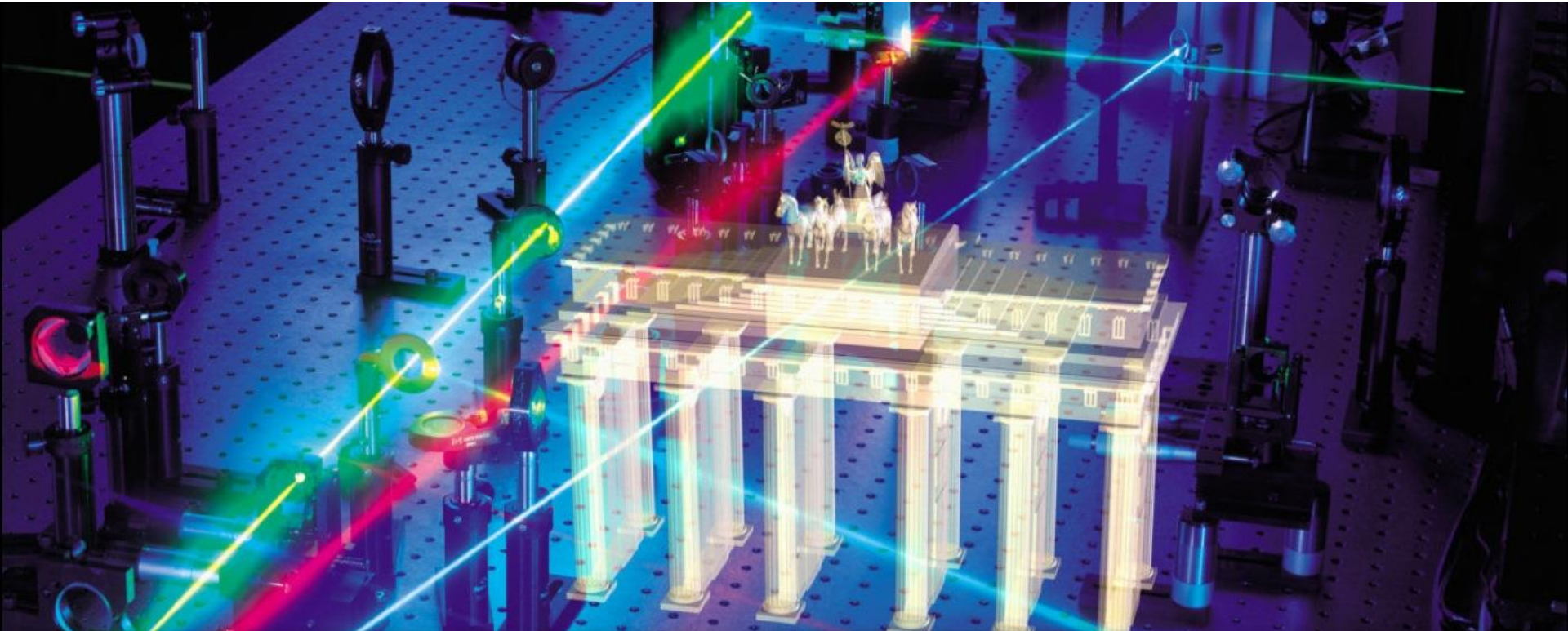


AgriPhotonics - Using optics and photonics in agriculture

German-Israeli international ZIM network

10th July 2020

Dr. Janina Bolling (OpTecBB e.V.)



- Optec-Berlin-Brandenburg (**OpTecBB**) e.V. is *the competence network* for optical technologies and micro systems technologies in the federal states of Berlin and Brandenburg.
- **OpTecBB e.V. is an initiative of companies and research institutions in Berlin and Brandenburg that collaboratively explore and exploit the possibilities of these technologies**
- OpTecBB e.V. was **founded on September 14th 2000 by companies, universities, research institutions and associations** and with the support of the **Berlin Senate** and the relevant **ministries in Brandenburg**
- **Today** the association has about **120 institutional members**.
- National collaboration in **OptecNet Deutschland** (more than 500 member organizations)
- Member of **go cluster** (former Kompetenznetze.de)
- Member of **European Photonics Industry Consortium (EPIC)** and engaged in **Photonics21**
- Awarded with the **Bronze Label of Cluster Management Excellence**

Goal: Data collection of **plant material** for **knowledge-based, locally adapted, and sustainable** plant production using optical methods and **photonics technologies**.

Challenge:

photonic technologies such as e.g. imaging and spectral measuring techniques are already used in agriculture: e.g. on tractors, autonomous harvest support systems, postharvest sorting, storage, and processing.

But restricted potential due to

- **limited data generation** due to one parameter sensors,
- **limited ability** of multi-dimensional approaches,
- the **variability** of biological samples such as cereals, fruit and whole trees, and the
- **costs** requested to implement the new technologies.

Tasks:

High-resolution approaches such as hyperspectral technologies **combined** with airborne systems and multi-sensor **data fusion** in combination with **novel data management systems** and machine learning would provide more detailed information helping farmers to make smarter/faster, more economic crop management decisions.

“ZIM” - Zentrales Innovationsprogramm Mittelstand:

Central Innovation Programme for small and medium-sized enterprises (SMEs): a funding programme of the *Federal Ministry for Economic Affairs and Energy (BMWI)* aiming to foster the innovative capacity of SMEs and thus to contribute to economic growth and the creation of new jobs.

ZIM - International Network

- minimum: **4 SMEs in Germany + 2 international SMEs + research and technology organisations (RTOs)**
- **2 steps of funding:**
 - 1) 1,5 years: network & roadmap
 - 2) year 2-3: projects

AgriPhotonics - Project management

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ARO Volcani Institute

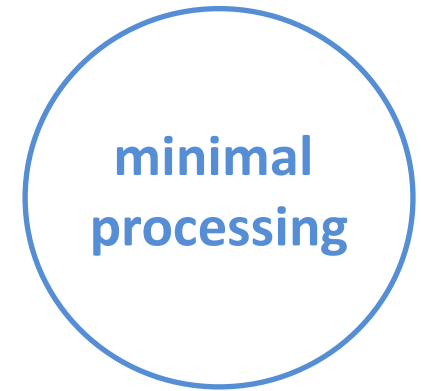
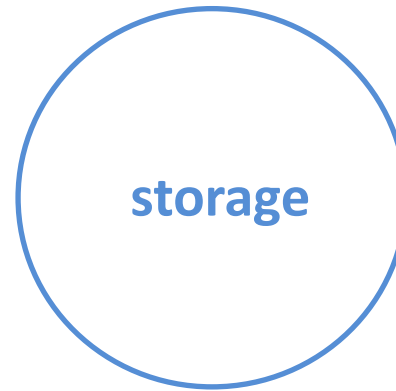
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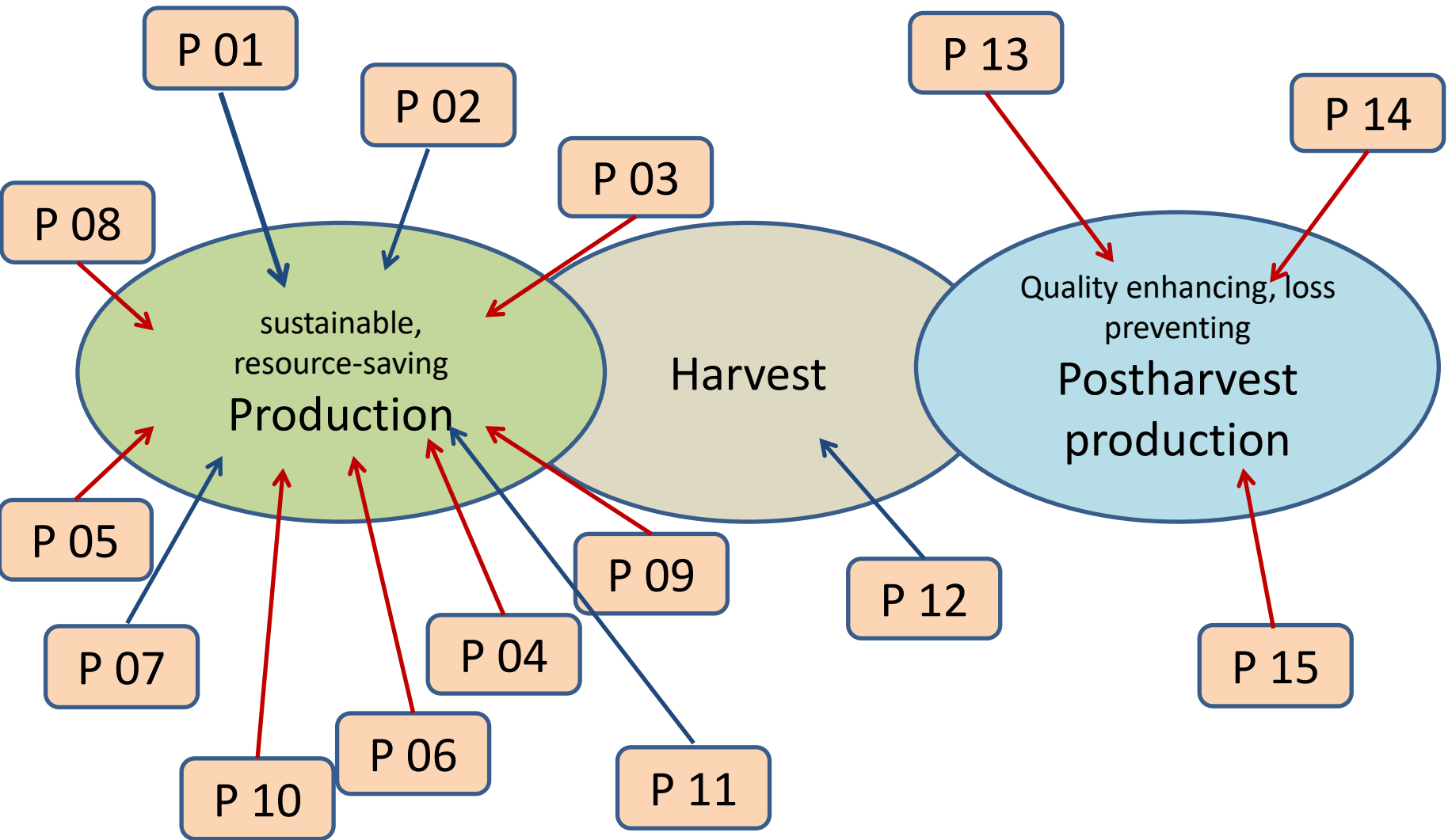
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Partners







ZIM AgriPhotonics Virtual Workshop

Save the date:

- Online conference on Advanced Agriculture and the integration of Photonics in it, on **September 8, 2020**.
- German-Israeli online AgriPhotonics workshop during the Photonics Days Berlin Brandenburg 2020, on **October 7, 2020**.

The goals of the virtual conference are to promote mutual acquaintance of those engaged in Advanced Agriculture and those who specialized in Photonics, in both countries, to create an arena for examination of business opportunities and to promote industrial and academic collaborations.

The organizers of the conference are: **Photonics Israel, Agricultural Research Organization (ARO) - the Volcani Center, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), and OpTecBB e.V..**

Entities wishing to present their activities at the conference are kindly requested to contact shlomoglazer@gmail.com or bolling@optecbb.de

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