AgriPhotonics – Using optics and photonics in agriculture

German-Israeli international ZIM network

Dr. Janina Bolling (OpTecBB e.V.)

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ABOUT OpTecBB

- 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 and 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 110 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

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OpTecBB ACTIVITIES

- OpTecBB is active in the following focus areas: (1) photonics and quantum technologies for communication and sensor technology, (2) optical analysis, (3) lighting technology, (4) biophotonics and ophthalmic optics, (5) laser technology, (6) microsystems technology.
- OpTecBB supports (a) the securing of skilled workers, (b) foreign trade promotion/trade fairs/internationalisation, (c) start-up support, (d) location-based marketing, PR, (d) political consulting, lobbying.
- OpTecBB with its partners Berlin Partner and WFBB is mainly responsible for cluster management in the Photonics Cluster in Berlin and Brandenburg. The innovative core of the cluster: 390 technology oriented companies, 10 universities and 26 non-university research organizations
- Monthly newsletter & several (online) events
- OpTecBB is organizing the Photonics Days Berlin Brandenburg: October 4 – 7, 2021 (Hybrid & online)

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AGRIPHOTONICS Using optics and photonics in agriculture and horticulture

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.

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ARGIPHOTONICS – PROJECT MANAGEMENT

OpTecBB e.v.

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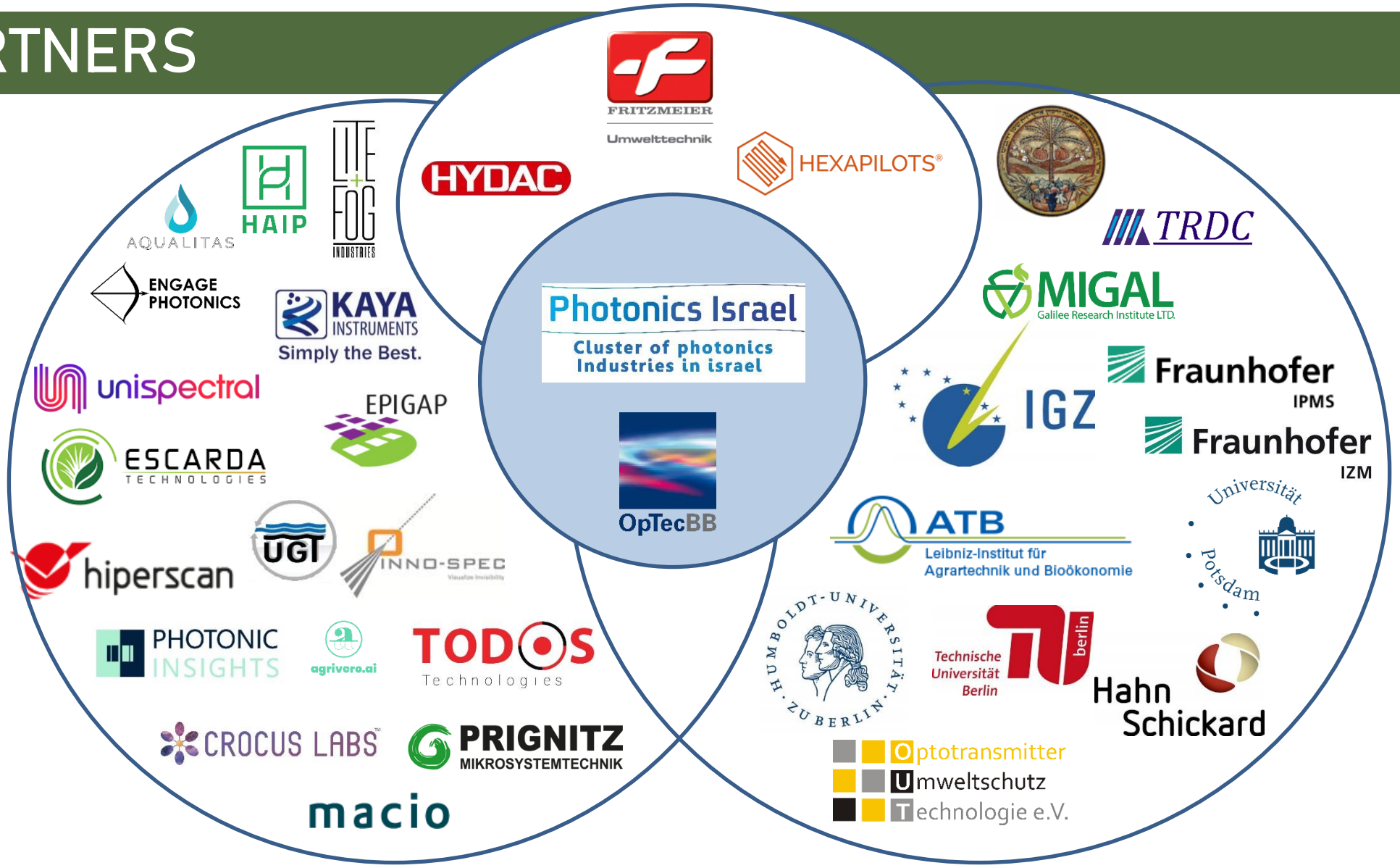
PARTNERS



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ZIM AgriPhotonics VIRTUAL WORKSHOP

- → Kick-Off AgriPhotonics meeting, Potsdam (Germany), January 21, 2020.
- → EPIC Online Technology Meeting on Precision Horticulture and Agriculture July 10, 2020.
- → Online conference on Advanced Agriculture and the integration of Photonics in it, September 8, 2020.
- → German-Israeli online AgriPhotonics workshop during the Photonics Days Berlin Brandenburg 2020, October 7, 2020.
- → Smart Agrifood Industry Expo (online), May 25 & 26, 2021.

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

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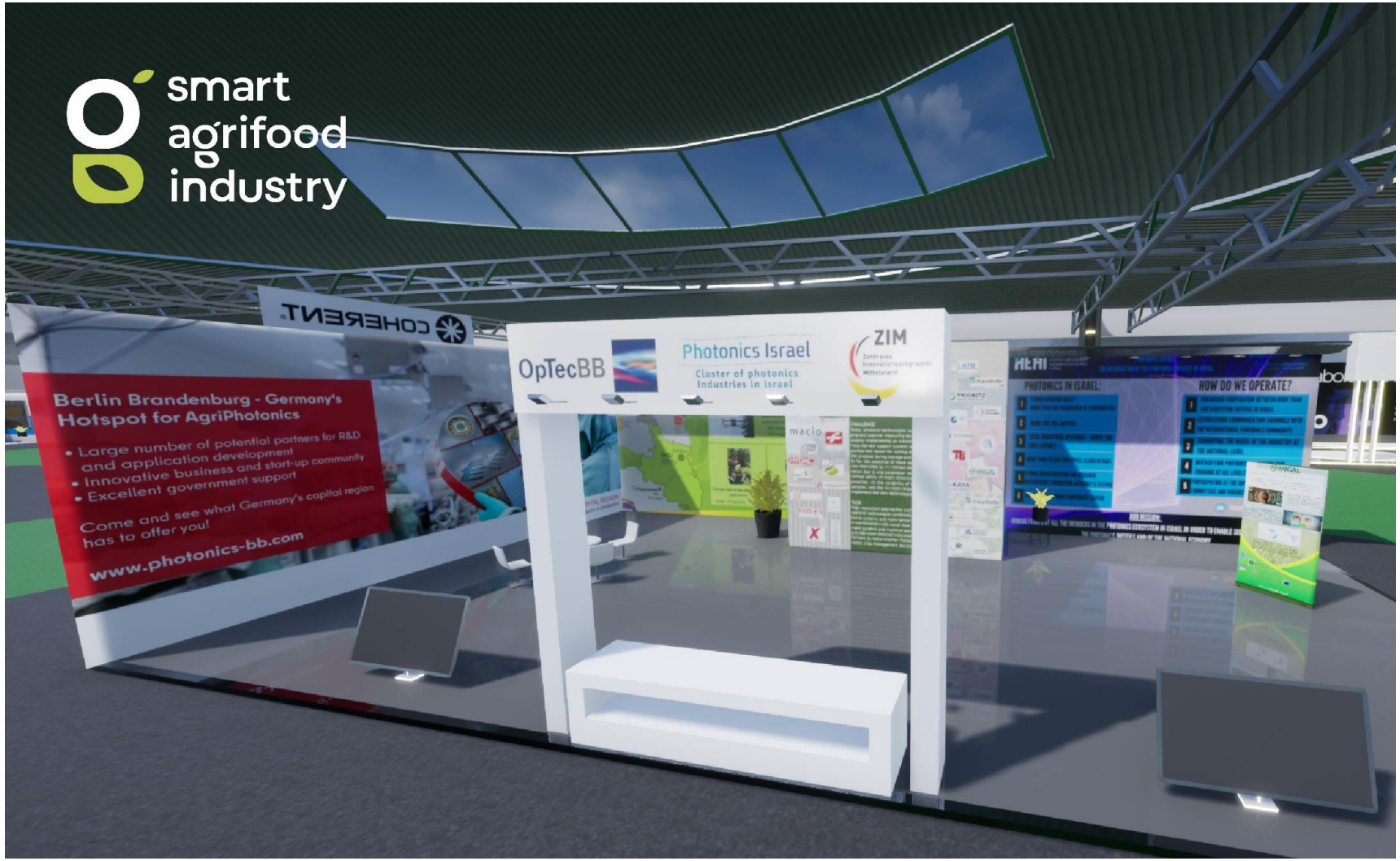
ZIM AgriPhotonics @ SMART AGRIFOOD INDUSTRY EXPO



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