

Scuola universitaria professionale della Svizzera italiana
Dipartimento ambiente costruzioni e design
Istituto sostenibilità applicata all'ambiente costruito

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SUPSI

Die Schweiz als wichtiger Innovator in Europa für BIPV

Switzerland's role in the development of a new BIPV industry in Europe

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Head of Swiss BIPV Competence Centre

1 aprile 2019

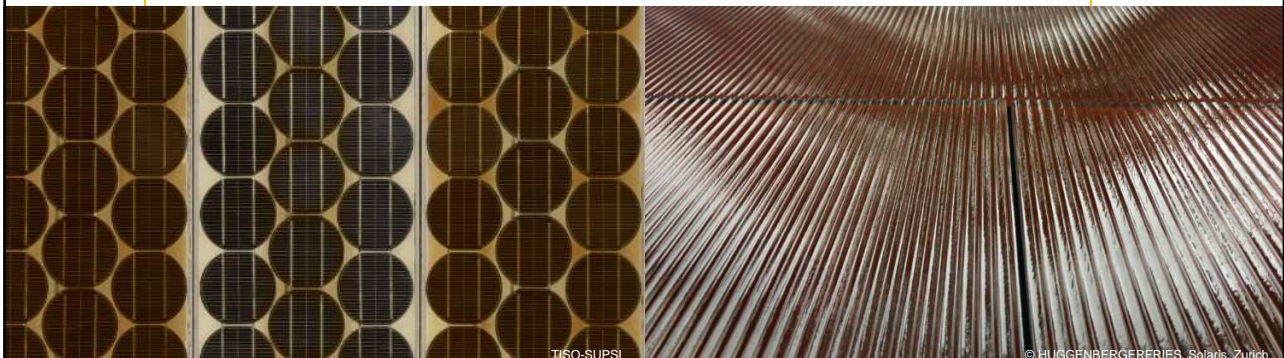
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2

Solar evolution, beyond technology

1982

2018



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3

Solar evolution, beyond technology

1979

2002

today



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Different tentative so far but still a niche market (source: www.bipv.ch)



Casa Solaria, Laax

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Solar Silo, Basel

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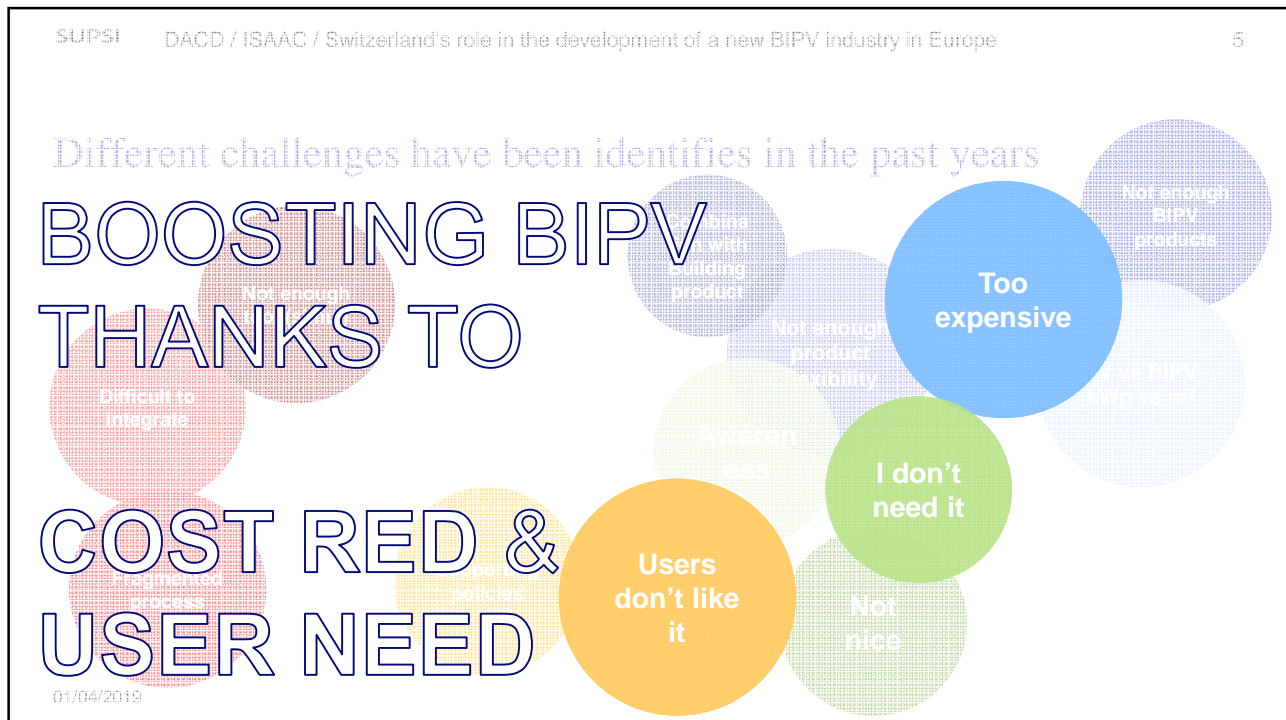
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Affoltern in Emmental

Logistic Center V-Zug

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EU-Set Plan set the goal and target for BIPV (challenges)

Development for innovative, **multidisciplinary BIPV** solutions in the built environment that will allow a faster market uptake of new integrated PV technologies and a more intensive and multi-functional use of the available surface area in Europe, whilst **enhancing quality, reliability and live span** of the BIPV products and reducing costs.

- **Cost reduction** through technological and production related progress as well as upscaling national niche markets (reduce additional **cost by 50% by 2020**, and **by 75% by 2030** compared to 2015 levels) and thereby accelerating the energy transition.
- To make **the BIPV products attractive** for **architects** and building owners
- Right **legislative frameworks** and policy programmes

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Switzerland is playing a key role to achieve this goal

- New way of communication
- New technologies and new products
- New machines
- New tools



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New way of communication

SUPSI www.bipv.ch (since 2005)

- Some numbers (year 2017)
 - 135 products, 121 examples
 - 10'647 users
 - 78% European users (30% Swiss), 11% Asian and 6% US
- It offers a lot of structured contents (knowledge base, product and example catalogues)
- ...but too dry in terms of inspiration



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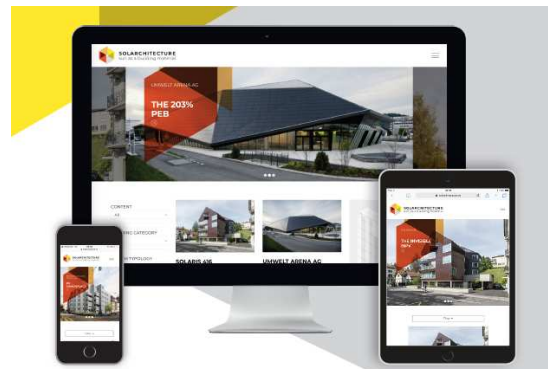
www.solarchitecture.ch → a new platform for architects & solar architecture

- Shift from BIPV to solar architecture
- Inspire architects (main target)
- Establish a (Swiss) reference platform for solar buildings
- Raise awareness
- Provide information

Managed by:

SUPSI **ETH** zürich **SWISSOLAR**

With the support of:



www.solarchitecture.ch → a new platform for architects and solar

- We are looking for new inspiring projects

SOLARCHITECTURE
not as a building material




- If you want to contribute or support us:

info@solarchitecture.ch

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To bring down the cost of multifunctional BIPV systems through an effective implementation of short and medium-term cost reduction roadmaps addressing the whole BIPV value chain.

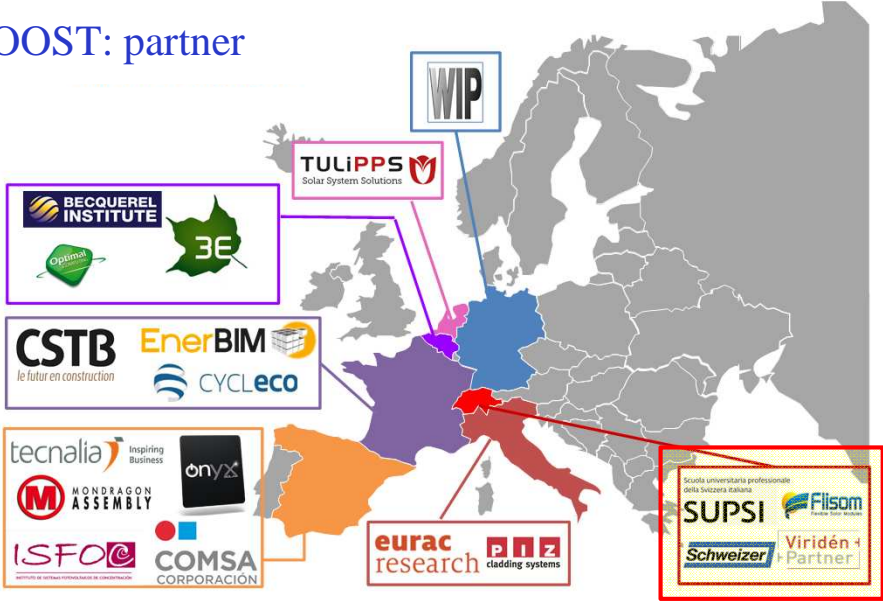
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 817991. The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Commission. The European Commission is not responsible for any use that may be made of the information contained therein.



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BIPVBOOST: partner



The map shows various European countries with callouts to partner logos. The logos include: BECQUEREL INSTITUTE, Optimal, 3E, CSTB, EnerBIM, CYCLECO, tecnalía, Inspiring Business, onyx, MONDRAGON ASSEMBLY, ISFOC, COMSA CORPORACIÓN, eurac research, PIZ cladding systems, SUPSI, Flisom, Schweizer, and Viridén Partner. A red box highlights the SUPSI, Flisom, Schweizer, and Viridén Partner logos.

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Towards mass manufacturing of BIPV

Flexible and automated BIPV manufacturing process through automated:

- **tabber-welding for back-contact cell**
- **string lay-up**
- **EL control**



Mondragon Assembly and Onyx Solar

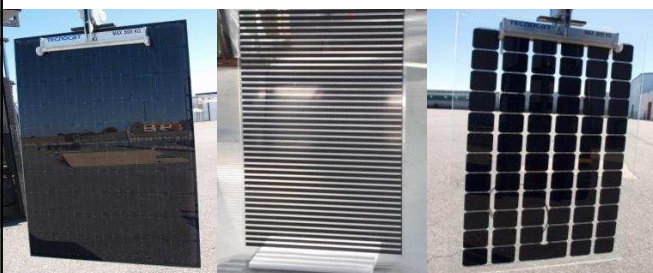
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Cost reduction at module level

Customizable, Flexible design, Performance, Nice aesthetic

- **Bifacial solar cells for balustrades**
- **a-Si patterned glass for façades**
- **Coloured glass solutions**



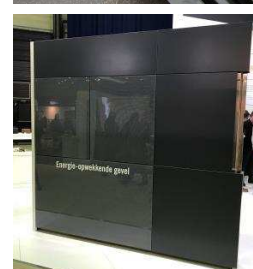
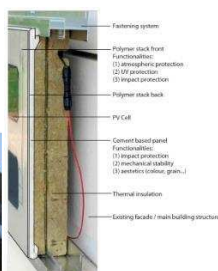
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Cost reduction at building skin level

Large portfolio of multifunctional BIPV products:

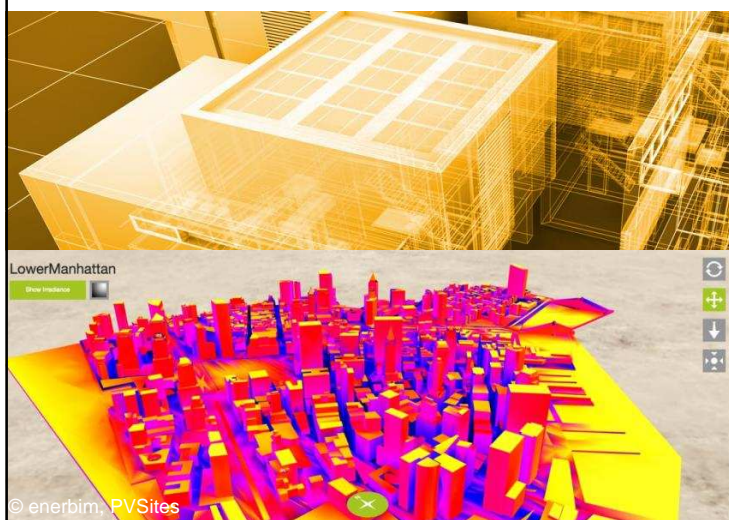
- **Multifunctional opaque cladding solution**
- **CIGS on metal enhanced roof & façade systems**
- **Glass-glass plug&play façade systems**
- **Bifacial solar cells for balustrades**



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Cost reduction through process digitalization along the value chain



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Let's people like and ask for BIPV and Solar Architecture

Thank you very much for your attention

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sun as a building material

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