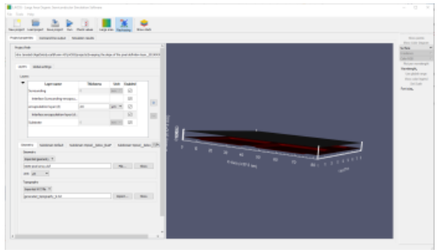
Laoss Optics Workflow

Setup your layer structure including thickness and refractive indices (I)

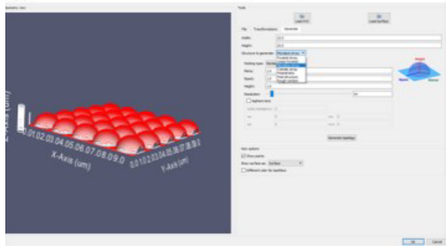
Load your own XYZ file or use a predefined topography (II)

Define emission and passive optics properties per subdomain (III)

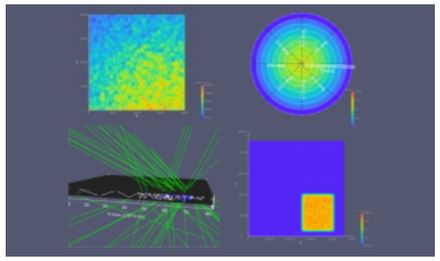
Analyze and optimise output (IV)



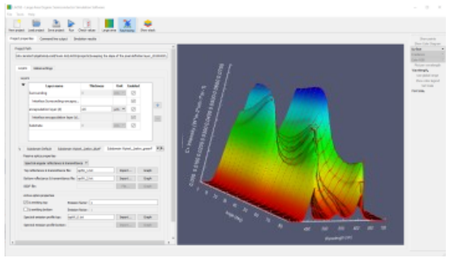
I



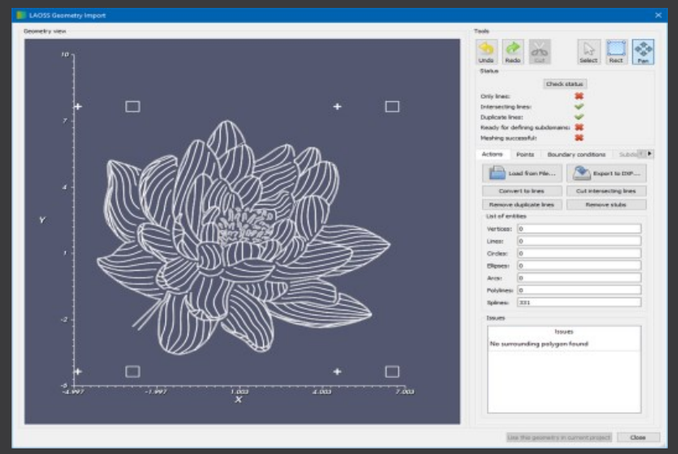
II



IV



III



The Laoss GUI has an intuitive layout and will display your LED or solar cell designs and simulation results in a format that is suitable for detailed analysis and publication. Laoss performs high-speed computations on standard PCs.

Full technical support is included with every Laoss software license.

Contact us today to arrange a free 1 month evaluation.

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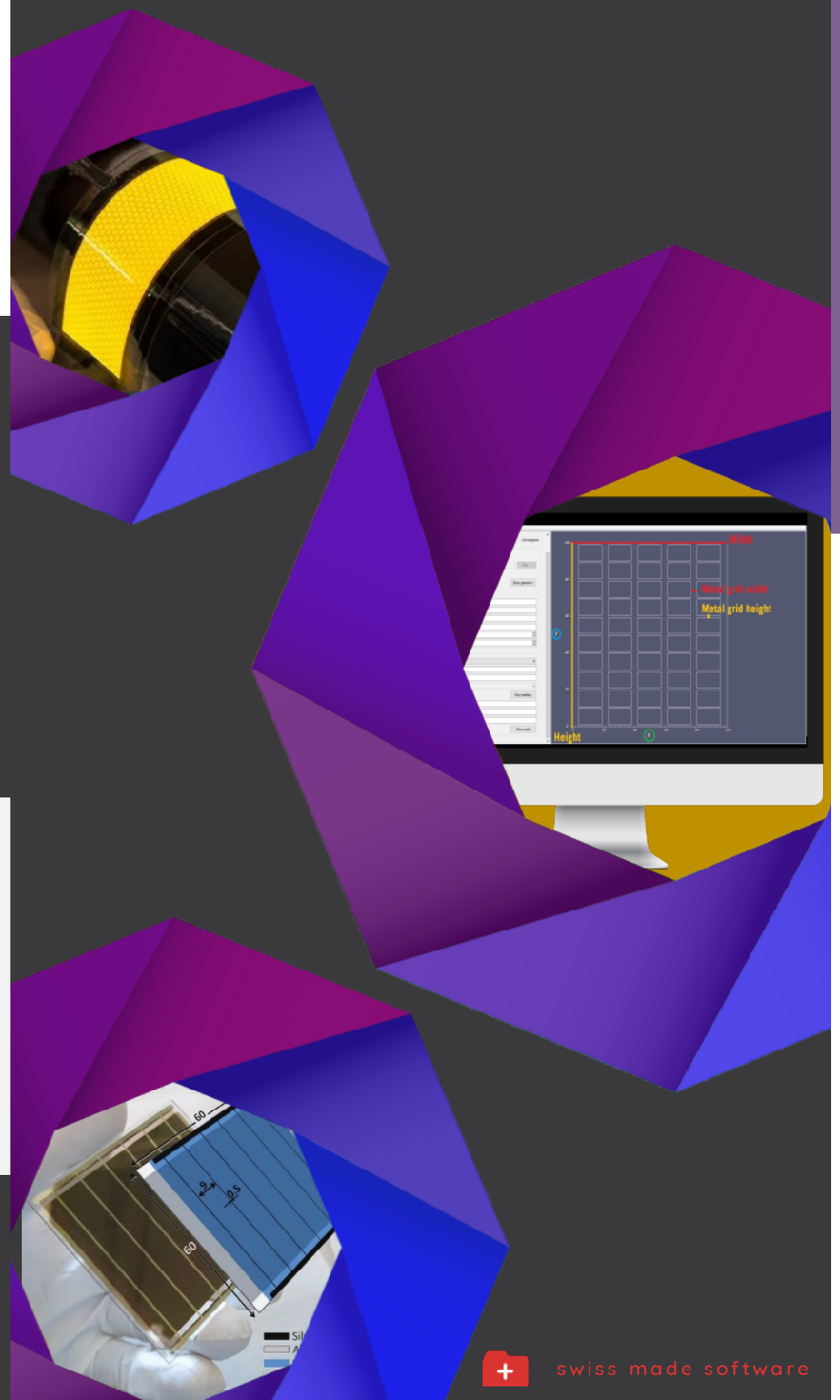
laoss

Design & Optimization Software for Large-Area LEDs, Solar Cells & Panels

Electrical

Thermal

Optical



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Design & Optimize Large Scale LEDs & Solar Cells

Laoss (Large area organic semiconductor simulator) is a powerful, high speed software package for the design, simulation and optimization of large-area organic and perovskite solar cells and LEDs. (displays, lighting panels, photovoltaic modules).

Electrical Module

Simulate the characteristics of large-area OLEDs & Solar cells

Optimize the electrode design

Reduction of the electrical losses

Analysis of non-ideal effects in OLEDs & Solar Cells

Understand electrical cross-talk in RGD OLED pixel arrays

PV LED

Thermal Module

Coupled electro-thermal model to simulate the two-way interaction between heat generation and electrical properties of the semiconductor

Calculate the temperature distribution in OLEDs and Solar Cells under standard operations

Explain non-ideal IV characteristics of OLEDs and solar cells due to electrothermal coupling

PV LED

Optics Module

Optical simulation with a powerful 3D ray-tracing algorithm

Model stand-alone 3D optical elements and their contribution to the device

Simulate optical cross-talk in OLED displays

Easily coupled to Setfos to analyze OLEDs and PVs with complex light-coupling geometries

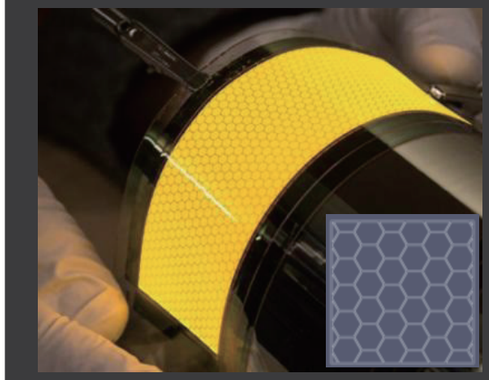
PV LED

Laoss Module Options

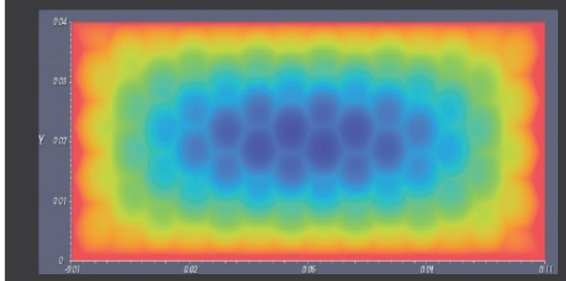
We offer three modules with Laoss: Optical, Electrical and Thermal. The optical and electrical modules can be purchased separately. The thermal module requires a license of the electrical module and considers electro-thermal coupling.

Intuitive Work Flow

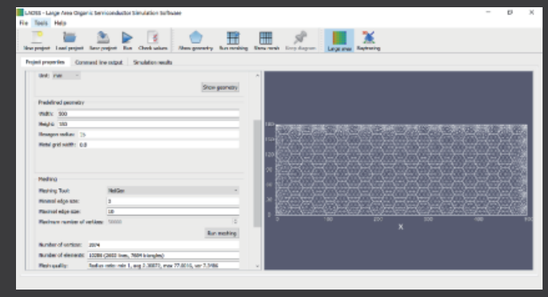
Select the Geometry and generate the CAD file.



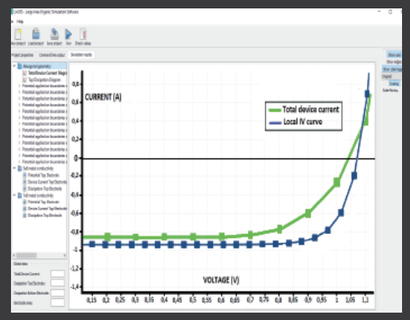
Run the simulation and visualize the selected output.



Import a CAD drawing or create a geometry in Laoss.



Import the I-V characteristics of the reference device. Define the material parameters.



The characteristics of the large-area device can be compared to the local I-V curve

Calculate, Simulate & Optimize

- Analyze the electrical losses in large area electrodes. (LEDs & PVs)
- Evaluate the current flow in the electrodes. (LEDs & PVs)
- Calculate the I-V curves of large devices. (LEDs & PVs)
- Optimize the power efficiency of full solar-cell modules. (PVs)
- Calculate the temperature distribution on the device. (LEDs & PVs)
- Quantify pixel cross-talk effects. (LEDs)
- Optimize the geometry of the electrodes. (LEDs & PVs)
- Simulate the impacts of defects and shunts on the device operation. (LEDs & PVs)

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Design & Optimization Software for Large-Area LEDs, Solar Cells & Panels

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