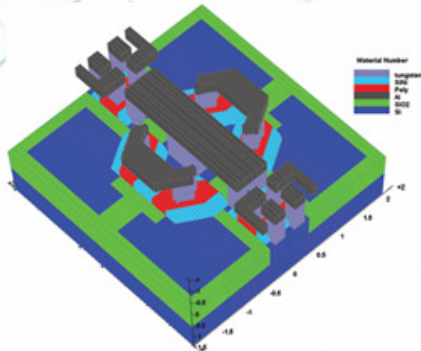
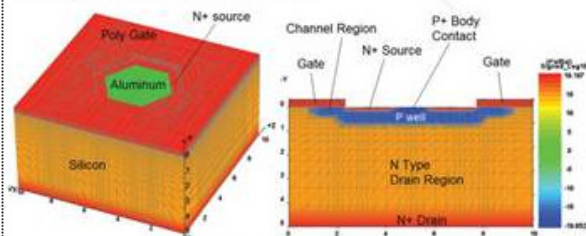


3D Simulation Examples

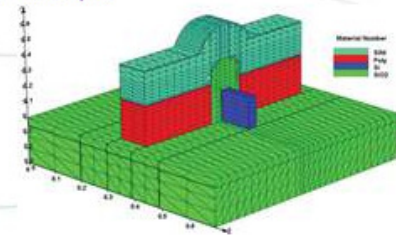
CMOS Image Sensor (without lens)



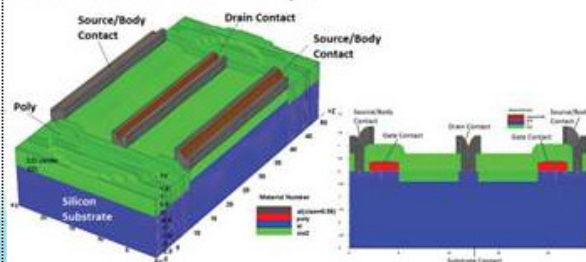
Hexagonal VDMOS Example



FINFET Example



RaceTrack LDMOS Example



Mode

- 2D, Quasi-3D, Hybrid-3D and Full 3D Process simulation
- 2D and Full 3D device simulation

Stacked Planes

- Easy to build quasi-3D and full 3D process simulation
- Reliable and Flexible
- Greatly reduce total mesh count

Process Simulation

- Gauss, Pearson, SIMS data and user-defined models
- Auto or user controlled switch between four different etching types
- Advanced full 3D diffusion models with GPU simulation option available
- Strained silicon, SiC and GaN-based material systems
- Activation models for all dopants
- And much more...

Device Simulation

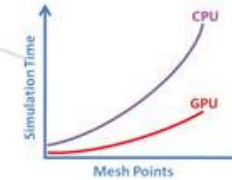
- Restart from previous saved status
- Industry-leading numerical convergence
- Large number of material models
- Hydrodynamic models for hot carriers
- Quantum tunneling & transport
- Thermionic emission model
- Heat transfer equations
- Deep level traps and trap dynamics
- Interface states
- Poole-Frenkel model
- Self-consistent QW calculations
- Temperature dependent model
- Impact ionization
- And much more...



Basic Features

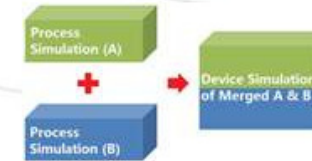
SimuGPU

- GPU simulation can achieve 3X faster than CPU depending on mesh sizes and configurations
- GPU simulation for both CSuprem (e.g. 3D diffusion) process simulation and APSYS device simulation



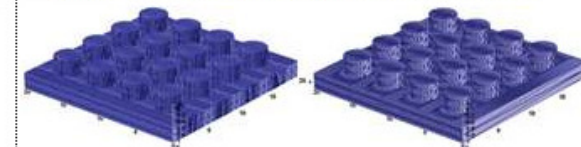
UltraMerge

- Perform 3D device simulation of merged top and bottom parts of two individual 3D process simulations
- Best for complicated 3D structures like interconnect simulation with substrate



BandedPlanes

- Ultra high efficient mesh. Best for very complicated 3D simulations
- Unique combination of straight and banded planes



Total mesh count: 52682	Total mesh count: 4958
Straight planes: 134	Planes: 2 straight+ 16 banded planes
Process simulation time: 50 minutes	Process simulation time: 2 minutes

AutoTCAD

AutoTCAD provides a Design of Experiment (DOE) feature

		Start		
	Node#1	Node#2	Node#3	
Node#11	Node#12	Node#21	Node#31	Node#32

* The above table is for demonstration only

Advanced Features

Testimonials

"After one lecture's teaching (~one hour), students are able to use the simulation program to do basic simulations, such as how NMOS dimensions affect I-V and C-V characteristics. The software is user friendly and easy to learn and understand. The commend notes are very helpful to learn how to write a simulation program. Also the graphic capability is very strong."

---- Dr. Ling Xie, Harvard University

"Crosslight simulator is especially helpful for power devices. It is compatible with Windows OS and is very user friendly."

---- Dr. James Pan, Semicoa, Inc.

"I have been using TCAD tools for almost 10 years, as a graduate student at MIT, a TCAD engineer at IBM and later as an assistant professor at the University of British Columbia. Among the simulation tools I used, Crosslight Software's TCAD suite is the best in user friendliness both for new and seasoned users. It runs on PCs, instead of Unix servers. It has a nice user interface and many helpful functions. Plotting is very convenient. It is a very powerful tool for many applications such as strained Si CMOS. Now we use CSUPREM for both research and teaching, and my students definitely prefer using it."

---- Dr. Maggie Xia, University of British Columbia

"Crosslight is really easy to use with much better convergence than their competitors, especially in III-V Nitride simulation, e.g. GaN power devices. It works very well for our projects. Furthermore, the 3D simulation is amazing and particularly easy to set up and memory efficient."

---- Dr. W.T. Ng, University of Toronto

About Crosslight

Originally created as a spin-off from the National Research Council of Canada in 1993

The first commercial company to provide TCAD software for electrical and optical modeling of quantum well laser diodes

A rapid growing company with the company culture of innovation

Among the world's leader of TCAD tools with a customer list extending to hundreds of semiconductor companies and research institutions.



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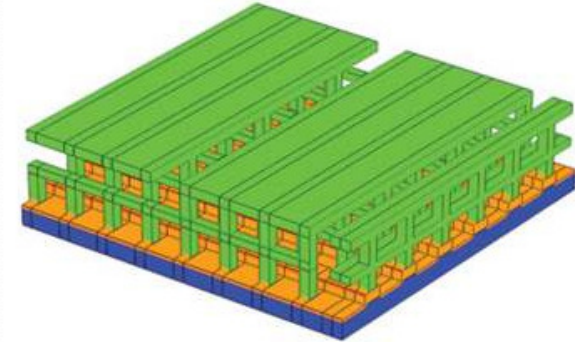
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CROSSLIGHT
microelectronics

Established in 1993

THE MOST ADVANCED STACKED PLANE 3D TECHNOLOGY COMPUTER AIDED DESIGN SOLUTION



CSuprem:

Next generation 2D/3D process simulator

APSYS:

Advanced device simulation software package

MaskEditor:

One step 3D simulation layout designer

CrosslightView:

Easy to use plotting GUI for both process and device simulations.

SimuCSuprem:

Graphic User Interface (GUI) for Csuprem with rich features like Design of Experiment (DOE), real time wizard, etc.

SimuApsys:

Easy to use plotting GUI for both process and device simulations.

Crosslight Software, Inc
3D Technology Computer Aided Design

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