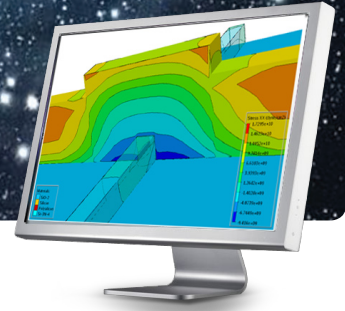


# VICTORY

## Stress



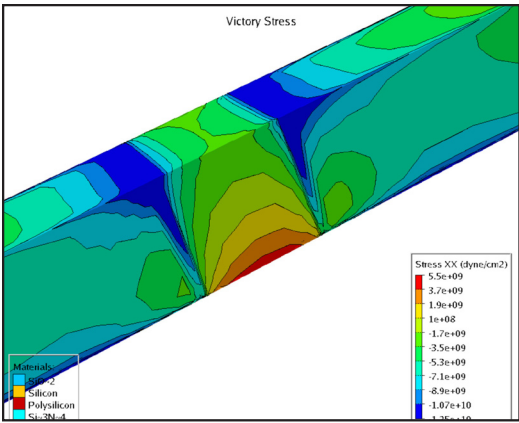
### 3D STRESS SIMULATOR

VICTORY Stress is a generic 3D stress simulator designed to calculate stresses and mobility enhancement factors for any 3D structure using comprehensive material stress models, including the dependence of elasticity coefficients on crystal orientation.

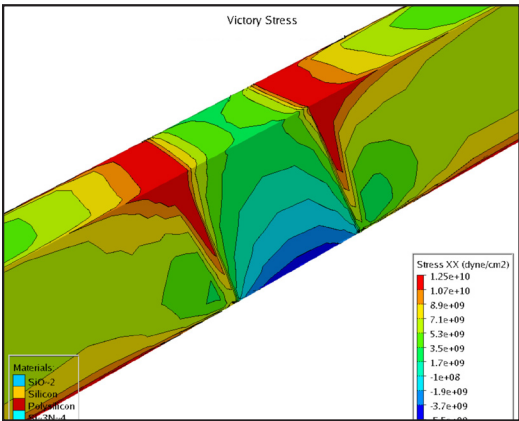
- **Generic 3D anisotropic stress simulation for crystalline silicon**
- **Stress analysis can be performed over full device structure, accounting for all isotropic and anisotropic properties of the materials, boundaries and initial conditions**
- **Simulation of thermal mismatch between materials**
- **Estimate mobility enhancement factors**
- **Account for intrinsic stress in deposited material layers**
- **Hydrostatic stress model for capping layers**
- **“Design of Experiments” with VWF can be used to analyze stress dependence on process parameters such as gate length or thickness variations**
- **Silvaco’s strong encryption is available to protect valuable customer and third party intellectual property**



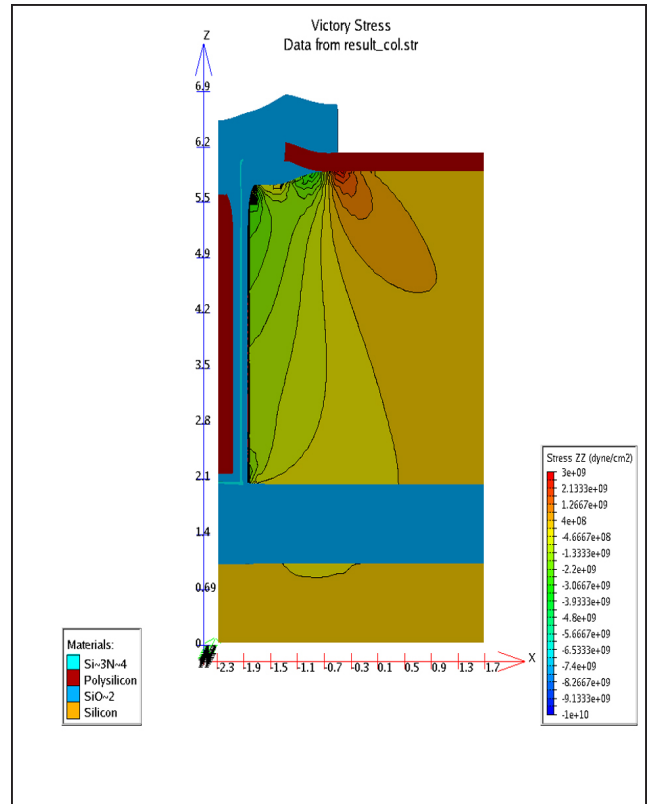
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3D stress contour profiles under tensile stress from nitride capping layer in FinFET device along (100) channel.



3D stress contour profiles under compressive stress from nitride capping layer in FinFET device along (100) channel.



Stress formation in silicon generated due to the thermal growth of the trench liner, the nitride liner layer, and thick surface LOCOS growth.

## VICTORY Stress Inputs/Outputs



# SILVACO

HEADQUARTERS

4701 Patrick Henry Drive, Bldg. 2

Santa Clara, CA 95054 USA

Phone: 408-654-4309

Fax: 408-496-6080

JAPAN [jpsales@silvaco.com](mailto:jpsales@silvaco.com)

EUROPE [eusales@silvaco.com](mailto:eusales@silvaco.com)

KOREA [krsales@silvaco.com](mailto:krsales@silvaco.com)

TAIWAN [twsales@silvaco.com](mailto:twsales@silvaco.com)

SINGAPORE [sgsales@silvaco.com](mailto:sgsales@silvaco.com)

CALIFORNIA [sales@silvaco.com](mailto:sales@silvaco.com)

408-567-1000

MASSACHUSETTS [masales@silvaco.com](mailto:masales@silvaco.com)

978-323-7901

TEXAS [txsales@silvaco.com](mailto:txsales@silvaco.com)

512-418-2929

ARIZONA [azsales@silvaco.com](mailto:azsales@silvaco.com)

480-947-2900

[WWW.SILVACO.COM](http://WWW.SILVACO.COM)

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