ATHENA

Release Notes

02/21/12

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RELEASE NOTES

VERSION 5.20.0

NEW FEATURES

- Baseline Release

VERSION 5.19.19

NEW FEATURES

- Generic proportional impurity activation model with primary application for silicon carbides

VERSION 5.19.18

ALTERATIONS AND ENHANCEMENTS

- Introduce reflective boundary conditions for Monte Carlo implantation

VERSION 5.19.17

ALTERATIONS AND ENHANCEMENTS

- Improvements in analytical etch and deposition which eliminate artefacts in very small structures with grid spacings of ~ 0.1 nm
- Improve Monte Carlo implant algorithm to allow mask CDs of 10 nm or less

VERSION 5.19.14

ALTERATIONS AND ENHANCEMENTS

- Introduce more accurate values for diffusivity of Sb in oxide
- Improve image calculation in OptoLith for small numerical apertures of ~ 0.1

VERSION 5.19.13

NEW FEATURES

- Increase speed of stress calculation by introducing 3 and 4 nodes triangle elements

ALTERATIONS AND ENHANCEMENTS

- Add Active Hydrogen and Active Helium as solution values to the SSF output

- Restore capability to specify initial doping level using parameter RESISTIVITY in the INITIALIZE statement

VERSION 5.19.12

ALTERATIONS AND ENHANCEMENTS

- Improve OptoLith capability to calculate multiple images

VERSION 5.19.11

NEW FEATURES

- Add non-vertical dry etching capability

VERSION 5.19.10

NEW FEATURES

- Add ion range tables for Carbon and Germanium implants

VERSION 5.19.8

NEW FEATURES

- Add capability to prevent encroachment of growing oxide into a non-oxidizable material, e.g. silicon nitride

ALTERATIONS AND ENHANCEMENTS

- Improve control of minimum triangle size during oxidation by introducing MINTAREA parameter in the METHOD statement

VERSION 5.19.4

NEW FEATURES

- Add capability to specify graded compound composition for ternary and quaternary semiconductors

ALTERATIONS AND ENHANCEMENTS

- Add capability to introduce doping distribution by the PROFILE statement using profile obtained by EXTRACT command of DeckBuild

VERSION 5.19.3

ALTERATIONS AND ENHANCEMENTS

- Expand list of ATHENA user-defined materials which can be saved and used in ATLAS as its standard materials

VERSION 5.19.2

ALTERATIONS AND ENHANCEMENTS

- Improve the Dose Loss Model by introducing separate model control for Boron, Phosphorus, and Arsenic
- Extend the POLY.DIFF model to be applicable for polysilicon doping using predeposition process

VERSION 5.19.1

NEW FEATURES

- Add new implant tables for main ions in the most common photoresist AZ-7500 in the energy interval from 1 to 5000 keV

ALTERATIONS AND ENHANCEMENTS

- Improve convergence of POLY.DIFF model for surface concentrations above solid solubility limit

VERSION 5.19.0

ALTERATIONS AND ENHANCEMENTS

- Expand capability to use implant moments stored in the implant table files with TSUPREM4-tm format.