



Issue 67

Stay informed about what's happening in the nanoHUB community by exploring upcoming events, community news, and new resources.

## Attention faculty! Are you looking for useful resources to enhance your teaching? Join us at the upcoming event:

### Recitation Series: nanoHUB Tools for Semiconductor Education Session One - Introducing ABACUS Tool Suite and Crystal Viewer

#### Date and Time

Thursday, August 10, 2023 from 11:00 - 11:45 AM EDT

nanoHUB is pleased to announce a new offering of our popular seven-part Recitation Series, running August - September, 2023. This series features the [ABACUS Tool Suite](#), which can only be found on nanoHUB.

The objective of the recitation series is to enable faculty to enhance existing or new semiconductor classes with interactive simulations. Simulations and animations can immerse students into “what if?” scenarios and engage them in more active forms of learning through homework assignments and design projects assignments.

In the first recitation session, Dr. Gerhard Klimeck will briefly discuss a new initiative, [Chipshub.org](#), then move into an overview of ABACUS and demonstrate the crystal viewer tool. This tool allows students to start with the visualization of a standard silicon text book unit cell, then expand the view to a larger crystal and immerse themselves into the various directional symmetries with activities such as viewing Miller planes and counting the number of bonds on such surfaces.

[Register here](#)

## nanoHUB Community News

### nanoHUB Community Input on Tools

Do you have a favorite nanoHUB tool (or two) that you use often? [Let us know what you use it for!](#)

## New on nanoHUB

### Exploring the Nano World: Building Nanoscale Structures with Polymer Modeler

During [this presentation](#), Dr. Tongtong (Tanya) Shen showcases how atomic-level simulations can lead to a more fundamental understanding of polymer crystal structures and guides you through an interactive [Polymer Modeler](#) tutorial powered by nanoHUB.

### Modeling of P-N Junction Devices using Various Materials for Photovoltaic Applications Under Different Operating Environments

During [this tutorial](#), Dr. Sayan Roy covers the nanoHUB tool, [ADEPT](#) (A Device Emulation Program and Tool). This tool is used for modeling and simulating photovoltaic devices using a range of different materials and structural configurations.

Dr. Roy briefly talks about some other tools and software which can be used to obtain the electronic and optical properties of materials to be used in photovoltaic applications. Specifically, [Quantum ESPRESSO](#) for calculating electronic and optical properties of materials, and [Stanford Stratified Structure Solver](#) (S4) for modeling optical features of multi-layer devices.

### Microsystems Process Technician Knowledge, Skills & Abilities

[This resource](#) presents the 2023 Knowledge, Skills and Abilities (KSAs) for Microsystems Technicians that were developed through work of the [Micro](#)

KSAs are the attributes required to perform a job.

**Knowledge** is a body of information applied directly to the performance of a function: How well does a student understand a concept theoretically?

**Skills** are observable competencies needed to perform learned psychomotor acts: How well can a student execute a specific activity?

**Abilities** are competencies to perform an observable behavior or behaviors that results in an observable product: Does the student meet expectations outside of strictly technical expertise?

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