

ACCESSING SPICE ON NANOHUB

1. Click on sign up to create an account on nanohub.org

The screenshot shows the nanoHUB homepage with a dark background featuring mathematical equations. At the top, there are navigation links: EXPLORE, PUBLISH, COMMUNITY, ABOUT, SUPPORT, Login, Sign Up, Help, and Search. Below the header, a main banner reads "Making Data and Simulation Pervasive". There are four main sections: "Model & Simulate" (with 500+ APPS), "Learn & Teach" (with Simulation-Powered Curricula), "Develop Software" (with Jupyter notebooks), and "Share & Publish" (with Teaching Materials). A central callout box promotes Schrödinger's molecular modeling courses with a 10% discount. Below this, there are nine thumbnail cards for different research areas: Intro to Drug Discovery, Intro to Antibody, Organic Electronics, Homogeneous Catalysis, Surface Chemistry, Battery Materials, Pharmaceutical Formulations, Polymeric Materials, and Consumer Packaged Goods.

FEATURED

2. Search Arizona State University to sign up using ASU's institutional login

The screenshot shows the "Create New Account" page. At the top, it says "Create New Account" and has navigation links: EXPLORE, PUBLISH, COMMUNITY, ABOUT, SUPPORT, Login, Sign Up, Help, and Search. It also shows a breadcrumb trail: Home > Register > Create New Account. The main form starts with a "CONNECT WITH" section where "Arizona State University" is selected from a dropdown. Below this is a "CREATE A NANOHUB ACCOUNT" section with fields for "Username" (required) and "Password" (required). To the right, there are informational boxes: one about logging in via social media, one for existing users, and one about password policies. At the bottom, there are terms and conditions and a link to privacy policy.

3. After logging in, under the explore tab click on tools. (Explore -> Tools)

The screenshot shows the nanoHUB Explore page. At the top, there are links for EXPLORE, PUBLISH, COMMUNITY, ABOUT, and SUPPORT. On the right, there are links for Logged in, Help, Search, Home, and Collect. Below the header, the word "Explore" is displayed. A section titled "Discover Content on nanoHUB" explains that nanoHUB is an open and free platform for computational education, research, and collaboration in nanotechnology, materials science, and related fields. It features a growing collection of simulation tools, teaching materials, courses, presentations, workshops, and more. Below this, there are eight cards arranged in two rows of four:

- What's New**: Shows three blue sparkles. Description: "New content is regularly published in nanoHUB. Discover the latest recent additions here by browsing content from the last week, month, and year."
- Tools**: Shows a monitor with a gear icon. Description: "Explore simulation tools and apps on nanoHUB. Select a topic you're interested in under the 'Tags' category to find related tools."
- Education Center**: Shows a stack of three books. Description: "This is a great place to begin on nanoHUB! Here you can browse popular resources, learning communities, groups, and more."
- Resources**: Shows a monitor with a gear and a document icon. Description: "Browse our large collection of resources, ranging from simulation tools to teaching materials, hands-on workshops, engaging courses, and much more."
- Courses**: Shows a person at a desk icon. Description: "Watch lectures taught by world-class professors, learn at your own pace, and test your knowledge through nanoHUB courses."
- nanoHUB-U**: Shows a monitor with a video camera icon. Description: "These short courses cover cutting edge topics through short lectures with quizzes, homework, and practice exams."
- Tags**: Shows a blue arrow icon. Description: "Tags are keywords or phrases that help you find tools, courses, workshops and other resources that have something in common. Try a tag search here."
- Citations**: Shows a document icon. Description: "Learn more about nanoHUB citations, see nanoHUB citation metrics, and browse a list of available citations."

4. Search spice and click on Spice3f4

The screenshot shows the nanoHUB Resources: Tools page. At the top, there are links for EXPLORE, PUBLISH, COMMUNITY, ABOUT, and SUPPORT. On the right, there are links for Logged in, Help, Search, Home, Resources, Tools, and a "Start a new Tool" button. Below the header, the title "Resources: Tools" is displayed. There are three navigation buttons: "Browse", "Browse by Tags", and "Browse Visually". A search bar contains the text "spice". A dropdown menu shows "Type: Tools" and a "Go" button. The search results list the following items:

- netSPICE**: Linear thermal circuit simulation tool for both steady-state and transient problems.
- SPICE Subcircuit Generator for Ferromagnetic Nanomaterials**: Generates SPICE subcircuit netlist for ferromagnetic nanomaterials for spintronic devices.
- SPICE Subcircuit Generator for Spintronic Nonmagnetic Metallic Channel Components**: Generates SPICE subcircuit netlist for electronic and spintronic transport in nanoscale nonmagnetic metallic channels.
- Spice3f4**: General-purpose circuit simulation program for nonlinear dc, nonlinear transient, and linear ac analysis.

At the bottom of the page, there are social media sharing icons (Facebook, Twitter, LinkedIn, YouTube, GitHub) and links for PRIVACY POLICY, ABUSE POLICY, LICENSING CONTENT, and COPYRIGHT INFRINGEMENT. A small note says "COPRIGHT 2022 NCH".

5. Click on Launch Tool

The screenshot shows the Spice3f4 tool page on the nanoHUB.org website. At the top, there's a navigation bar with links for EXPLORE, PUBLISH, COMMUNITY, ABOUT, and SUPPORT. Below the navigation is a search bar and a "Logged in" link. The main content area has a dark header "Spice3f4". Underneath it, there's a brief description by Michael McLennan from Purdue University, stating it's a general-purpose circuit simulation program for nonlinear dc, nonlinear transient, and linear ac analysis. A "Launch Tool" button is prominently displayed. To its right, there's a summary box with details like version 1.3 published on 05 Nov 2014, 3507 users, 7 citations, 18 questions, 2 reviews, and 0 watches. Below the summary is a "View All Supporting Documents" link. The bottom of the page features tabs for About, Usage, Citations, Questions, Reviews, Wishlist, and Versions.

6. From the drop down menu click on upload

The screenshot shows the Spice3f4 input interface. At the top, there's a toolbar with "Input", "Simulate", "Terminate", and "Keep for later". Below the toolbar is a dropdown menu labeled "Input" with options: Upload, New, Upload, Download, and Examples. The "Upload" option is highlighted. The main area contains a list of examples, including "3-stage Amplifier", "Bipolar bias with 4 resistors", "Common-emitter amplifier (Hayt and Neudeck, fig. 6.8, page 227)", "Current mirror (Hayt and Neudeck, fig. 4.10, page 140)", "Diode (AC/DC Analysis)", "Diode (Hayt and Neudeck, prob. 1-29, fig. 1.35, page 43)", "Diode (Neudeck, example 1.8, page 31)", "Half wave rectifier", "Introduction to SPICE - Example 2", "Introduction to SPICE - Figure 3", "Introduction to SPICE - Figure 5", "NMOS cascode amplifier like Fig 6.49", "NMOS UV Characteristic", and "NMOS Inverter with resistor load". At the bottom of the interface, there's a "Simulate >" button and a status bar indicating "Storage (manage) 6% of 10GB".

7. Upload spice netlist

The screenshot shows the Spice3f4 interface with an error message about file upload. The message says: "A special starting file browser page should pop up on your desktop. Use that form to upload the file. If the upload from desktop doesn't work, make sure that you're always using the latest version of Java or the latest version of your browser. See our Support area for details." Below this message is a "Click anywhere to dismiss this message" link. To the right of the message, a separate "Upload" dialog box is open. It has a title bar for "nanoHUB.org ONLINE SIMULATION AND MORE FOR NANOTECHNOLOGY", a "Upload" instruction, a "Input file:" field with "Upload a file" selected, a "Browse..." button with the path "gcdr_write_sp_test.vdd.spck" selected, and "Upload" and "Cancel" buttons at the bottom. The background of the main interface shows a progress bar for storage management at 6% of 10GB.

8. Click on simulate to simulate the circuit

The screenshot shows the nanoHUB Spice3f4 simulation interface. At the top, there are tabs for 'Input' and 'Simulate'. Below the tabs, the 'Input' tab is active, displaying a large block of SPICE netlist code. The code includes definitions for resistors (R1-R9), nodes (Node_metal1-Node_metal9), and connections between them. A 'Simulate' button is located at the bottom right of the input area. Below the input area, there is a 'Storage (manage)' section showing 0% usage of 10GB. At the very bottom of the page, there are links for 'PRIVACY POLICY', 'ABUSE POLICY', 'LICENSING CONTENT', and 'COPYRIGHT INFRINGEMENT', along with social media icons.

9. After the simulation ends, from the drop down click on download

The screenshot shows the nanoHUB Spice3f4 simulation interface after the simulation has completed. The 'Simulate' tab is now active. The main window displays the 'Output Log' tab, which contains the results of the simulation. The results are organized by device type (Resistor) and device number. For each resistor, it shows the model name ('Simple linear resistor'), device ID ('r3621'), node numbers ('n1 n2'), resistance ('0.001'), and current ('0'). The results are presented in a table-like format with columns for model, device, node1, node2, resistance, and current. Below the output log, there is a 'Find' bar and a 'result' dropdown menu. At the bottom, there is a 'Storage (manage)' section showing 0% usage of 10GB. The footer of the page includes links for 'PRIVACY POLICY', 'ABUSE POLICY', 'LICENSING CONTENT', and 'COPYRIGHT INFRINGEMENT', along with social media icons.

10. Click on “save as” to download the output log

