NANOACADEMIC TECHNOLOGIES

Coherent Modeling

QTCAD® EDU is now available!

Advanced Quantum Technology Software for Students

Nanoacademic offers an innovative computer-aided design tool dedicated to spin-qubit and superconducting-qubit modeling for quantum-technology applications. Complementing the professional version of QTCAD® used by companies and universities for R&D, QTCAD® EDU for students aims to build a workforce proficient in quantum chip design.

QTCAD® (Quantum-Technology Computer-Aided Design) is a 3D finite-element simulator used to predict the performance of quantum devices before the prototyping and manufacturing phases.

QTCAD EDU

Quantum technologies such as quantum sensing, quantum communication, and quantum computing are poised to produce transformative impacts on society. To deliver these promises, quantum devices based on qubits must be perfected and industrially scaled. This demands addressing the talent shortage by training a highly educated workforce in quantum hardware design.

Quantum hardware design requires advanced knowledge of physical principles, materials, and engineering processes that underpin the operation of state-of-the-art systems such as superconducting qubits and spin qubits in gated quantum dots and defects.

Teaching students the fundamentals of quantum technologies and how to design quantum chips that match industry expectations necessitates going beyond the black board by bringing in professional-grade technology computer-aided design (TCAD) software into the classroom.

QTCAD® EDU gives students a unique hands-on experience.

This is what a pioneer partner of ours using *QTCAD® EDU* thinks of his teaching experience:

"QTCAD® brilliantly simplifies quantum concepts, making them visually intuitive and essential for our students."

Prof. Fabrizio Riente, Politecnico di Torino, December 2024

quobly · life.augmented · Tohoku Institute of Technology · VTT · equal1 · Politecnico di Torino · University of Toronto

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DESIGN TOOLS FOR NEXT GEN MATERIALS

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QTCAD® EDU is now available!

QTCAD® uses a unique set of solvers such as non-linear Poisson, Schrödinger, capacitance-matrix, Maxwell, and many-body solvers to calculate qubit performance figures of merit before prototyping and mass production in advanced industrial facilities.
With QTCAD® EDU, learning the basics of quantum physics applied to the design of spin-qubit or superconducting-qubit devices involves 3D modeling and visualization aspects that are at the core of modern industrial R&D workflows but are missing in traditional academic training such as quantum MSc and BSc level programs. This approach enriches the educational experience of students who want to embrace quantum engineer or physicist careers in a revolutionary emerging industry.
Get an educational QTCAD® license to let students explore physical qubit operational principles and designs through simulations to open up their careers as quantum industry professionals in the public or private sectors.

QTCAD® EDU main features:

- ✓ Access to a unique set of simulation features to design spin or superconducting quantum devices
- ✓ Step-by-step tutorials accessible to students and freely customizable by professors
- ✓ Default geometry examples of typical qubit devices available to get started
- ✓ Exploration of design parameters using a Python API
- ✓ 3D visualization capabilities and Jupyter notebook support
- ✓ Flexible licensing system to match your organization's needs: no limit on classroom size
- ✓ Well adapted to study levels such as MSc and BSc final year
- ✓ Technical support for troubleshooting (for installation and getting started)
- ✓ A reference tool used by innovative organizations worldwide to design real QPU components

QTCAD® EDU 30-day free trial	QTCAD® EDU Option 1 Semester-long	QTCAD® EDU Option 2 Yearly subscriptions (1 to multiyear licenses)	QTCAD® Professional versions Academic, Lab & Corporate licenses
▪ Desktop version ▪ Start learning design and fundamental concepts ▪ Tutorials to train and model your own device ▪ Limited activities ▪ Limited technical support	▪ Desktop version ▪ Multi-qubit sandbox with tutorials ▪ No head count limit ▪ Limited technical support	▪ Desktop version ▪ Multi-qubit sandbox with tutorials ▪ No head count limit ▪ Limited technical support	▪ Full commercial license for single users or research groups/R&D teams ▪ No device design limitations ▪ Advanced technical support

Contact us to know more, test QTCAD® EDU and determine what's best for your students' professional endeavors

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