

effective method, and it certainly doesn't encourage new players into the field.

The journal *Fluctuation and Noise Letters* provides a forum for concentrated publication of this literature. Before its appearance on the scene there was not one journal in which the community of 'noise scientists' (in the sense described above) could converge; it fills an important and previously unoccupied niche. The editors are an outstanding multidisciplinary and multicontinental group who have a serious scientific interest in working towards the journal's success.

Fluctuation and Noise Letters is only a little over a year old, and yet has already attracted many publications from a distinguished set of authors. Practically every paper so far has interested me. It offers an appealing variety of papers (letters, current opinions and reviews), is highly effective, efficient and selective in its peer-review process, and is attractive in format, including the easy inclusion of colour figures. Although paper copies are available, the electronic accessibility is most attractive. Now those of us who find this an extremely useful and interesting venue must encourage our libraries to subscribe. ■

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..... Growing up with quantum computing

Quantum Information and Computation

Coordinating managing editor Hoi Kwong Lo

Rinton Press. 7/yr. \$260 (institutional); \$140 (individual)

Isaac Chuang

Physics and computer science have given birth to a new field: quantum computation and quantum information. And just as proud parents with newborn children may find *Parenting* magazine appearing in their mailboxes, researchers in this field now have *Quantum Information and Computation*, a timely new journal from Rinton Press.

This journal, just over one year old, serves a nascent community that was originally founded in the mid-1980s on the principle that information and physics are fundamentally intertwined at their deepest levels. The spark that ignited worldwide interest in this insight sprang forth in 1994 with Peter Shor's discovery of a theoretical way to use quantum-mechanical resources to unravel a mathematical problem at the heart of electronic commerce and cryptography. The



heyday of quantum computing followed, with rapid invention of ways to combine the results of classic information theory such as error correction with quantum physics. Experiments also successfully realized quantum algorithms and protocols including quantum state teleportation, using techniques from optics, nuclear and atomic physics, and even exotic chemistry. Eight years on, as maturity is beginning to descend, the excitement is still palpable and the young field is starting to walk — but where will it learn to talk?

The appearance of *Quantum Information and Computation* fills this need in the community, establishing a middle ground between computer science, physics and the publication forums of other disciplines. Quantum-computing papers currently clamour for time and attention all the way from *Science* and *Nature* to the proceedings of the IEEE *Foundations of Computer Science* and the ACM *Symposium on Theory of Computing*. Also, the field has gradually developed its own language and style, challenging the limitations of venues intended for general audiences. In *Quantum Information and Computation*, papers have a natural home where authors will finally be free to assume a basic knowledge of concepts, such as quantum circuits and computational complexity.

Readers will also be pleased to find the

journal well balanced and populated with high-quality articles of generous length. The members of the editorial board are accomplished and respected leaders in the field, representing both theoretical and experimental work, and including experts in both physics and computer science. This careful balance is reflected in the contents: the first issue is a beautiful four-part treatise on entanglement in all its theoretical aspects (providing a much-needed entrée into the subject), and another early issue elegantly assembles 14 expert articles covering all the main implementation schemes for quantum computers, including an inspired piece by David DiVincenzo on 'Dogma and heresy in quantum computing'. The journal publishes tutorials as well as regular articles, and features in-depth reviews of books in the field, plus a regular and lively 'webcorner' that lists online links to active research groups, upcoming conferences and workshops.

Judging from the first ten issues, *Quantum Information and Computation* is here to stay, and will find a warm welcome in the quantum-computation and quantum-information community. ■

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