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Press release

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Ignacio Cirac receives the Niels Bohr Institute Medal of Honour.

Professor Ignacio Cirac, Director at the Max-Planck-Institute of Quantum Optics (Garching, near Munich) is being awarded the Niels Bohr Institute Medal of Honour "in recognition of his truly outstanding contribution to the development of new theories about the future of information networks based on the laws of quantum mechanics."

The Niels Bohr Institute Medal of Honour was established in 2010 on the occasion of the 125th birthday of the famous Danish physicist and Nobel-prize winner Niels Bohr. The medal is given annually to an especially outstanding international researcher working in the spirit of Niels Bohr: International cooperation and knowledge exchange. "Ignacio Cirac is one of the pioneers in the quantum computing and quantum information theory and the Niels Bohr Institute wants to honour this very active and upcoming researcher with the Niels Bohr Institute Medal of Honour," says Professor Robert Feidenhans'l, Director of the Niels Bohr Institute.

Professor Ignacio Cirac was born in the City of Manresa in 1965. He finished his studies of theoretical physics at the Universidad Complutense de Madrid with the degree of a PhD in 1991. Cirac started his career successfully as "Professor Titular" at the Universidad Castilla-La-Mancha, where he did his research from 1991 till 1996. In 1996 he was appointed to the Leopold Franzens Universität Innsbruck and the local Institute of Theoretical Physics. Since 2001 he is Director at the Max-Planck-Institute of Quantum Optics and head of the Theory Division.

Prof. Cirac takes a decisive part in the development of a new information theory based on the laws of quantum mechanics. Together with Professor Peter Zoller (University of Innsbruck) he proposed quantum gates based on trapped ions, and the use of ultracold atoms in optical lattices for the simulation of quantum-many-body systems. Both concepts have by now been brought into realization by experimental physicists worldwide. In his Theory Division scientists do research on the processing of quantum information: They develop new algorithms for quantum communication, design new quantum networks making use of the special properties of quantum particles, and create new theoretical tools to characterize and quantify e.g. entanglement of remote quantum systems.

The description of quantum many-body systems aims at predicting new states of quantum matter as well as at the understanding of properties of classical many-body systems. For many years now Prof. Cirac has been in close scientific contact and exchange with the Niels Bohr Institute. In particular, Cirac has published numerous scientific articles together with Professor Eugene Polzik, head of the Quantop Group at the Niels Bohr Institute.

Prof. Cirac has already been presented with many awards for his merits in the area of quantum information: 2005 for example with the prestigious "Quantum Electronics Prize" of the European Science Foundation. In May 2006 he got the Royal Spanish Prince of Asturias Prize and in the same year he was presented with the "International Quantum Communication Award" together with Peter Zoller. In January 2009 he was recipient of the "Frontiers of Knowledge Award in Basic Sciences" of the Spanish BBVA-Foundation and also of the Benjamin Franklin Medal (again with Peter Zoller). Only last week he was awarded with the Israeli Wolf Prize. The presentation of the Medal of Honour takes place on January 9th, 2013, in the historic Auditorium at the Niels Bohr Institute. [OM]

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