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In recent years substantial progress, both experimentally and theoretically, has been achieved in various domains of quantum physics, most strikingly in the domain of manipulating single quantum particles. This conference gathered leading international experts who reported on the recent progress of their research group in the manipulation of atoms, ions, and photons in different environments (cavities, atom chips, spectroscopic methods) as well as theoretical physicists providing advances in the description and measurement of composite quantum systems, e.g. entanglement and decoherence. An outlook on concrete realizations of some of these recent results in the context of the realization of quantum cryptography indicates the emergence of future quantum technologies.

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