

ICQNM 2018

Forward

The Twelfth International Conference on Quantum, Nano/Bio, and Micro Technologies (ICQNM 2018), held between September 16, 2018 and September 20, 2018 in Venice, Italy, continued a series of events covering particularly promising theories and technologies. The conference covered fundamentals on designing, implementing, testing, validating and maintaining various kinds of materials, systems, techniques and mechanisms related to quantum-, nano- and micro-technologies.

Quantum technologies and nano technologies have a great potential to transform communications telecommunications infrastructure and communication protocols, and computers and networking devices. Nanotechnologies and micro-technologies already made their mark on smart materials, nano-medicine, nano-devices, molecular manufacturing, biotechnology, metrology, aerospace.

The advancements in material science and computer science have allowed the building, launching and deploying of space exploration systems that continually do more and more as they become smaller and lighter. As an example, carbon nano-tubes have been created that are 250 times stronger than steel, 10 times lighter, and transparent. Similar advances are occurring in glass, plastics and concrete. Spacecraft are being launched, with hulls that are composed of carbon fibers, a light weight high strength material.

Swarms is another concept of nano-robotics; swarms act in unison like bees. They theoretically will act as a flexible cloth like material, as strong as diamond. Interplanetary exploration can be foreseen as being carried on by nano-robots as well.

Electronic devices, medicine, environment, metrology, aerospace programs, clothes and materials, telecommunications, cryptography, semiconductors, manufacturing, and other domains are impacted by the progress on the areas mentioned above. Particularly, micro imaging, nano-medicine: (drug delivery; nano-particles i.e. viruses; proteins.), bio-nanostructures: (nano-tubes, nano-particles), microsystems, micro fluidics: (including nano-fluidics, modeling; fabrication and application), micro instrumentation / implantable microdevices (miniaturized bio-electronic systems etc.) and micro sensors benefits from the progress on quantum, nano and micro technologies.

We take here the opportunity to warmly thank all the members of the ICQNM 2018 technical program committee, as well as all the reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors who dedicated their time and effort to contribute to ICQNM 2018. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions.

We also gratefully thank the members of the ICQNM 2018 organizing committee for their help in handling the logistics and for their work that made this professional meeting a success.

We hope that ICQNM 2018 was a successful international forum for the exchange of ideas and results between academia and industry and to promote further progress in the field of

quantum, nano/bio, and micro technologies. We also hope that Venice, Italy provided a pleasant environment during the conference and everyone saved some time to enjoy the unique charm of the city.

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