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EUROPEAN PHYSICAL SOCIETY

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**Report of the roundtable Young Minds “Quantum and New Technologies”, taking place in the framework of the 11<sup>th</sup> International Conference of the Balkan Physical Union (BPU11), Belgrade, Serbia**

**Rationale**

While the first quantum revolution brought to us transistors, lasers and superconductors, or magnetic resonance imaging, now the second *quantum revolution* is unfolding the latest advances in measurement and manipulation of single quantum systems, indicating the emergence of a series of disruptive technologies based on a better understanding of the behavior of materials at the atomic and molecular levels. Quantum Technologies (QTs) promise to remodel many areas of science and technology, providing for instance super-fast computers, fully secure communications, more accurate measurement devices and sensors or extremely precise clocks that could be the basis for new GPS systems.

This roundtable facilitated a discussion about the potential of QTs from various sectorial perspectives such as Quantum computers and simulators; Q. communication; Q. metrology and sensing, touching upon the impact the QTs could have on the economy development, markets, education, jobs and society.

**The round table**

The round table, moderated by Dr. Enrique Sánchez-Bautista (Head of Policy at European Physical Society) counted on the participation of panellist such as Dr. Araceli Venegas-Gómez (Founder and Chief Executive Officer, Qureca), who expressed shared her perspective from the quantum industry point of view, Prof. Dr. Yasser Omar (Technical University of Lisbon, Portugal) and Dr. Ioannis Theodoris (National Technical University of Athens) who complemented with an academic perspective on QTs trends and a viewpoint of the young researchers from Young Minds Action Committee represented by the Mr. Mattia Ostinato, the Chair of the Young Minds Project.

**Conclusion**

QTs are becoming more and more relevant on the high political agenda of many governments worldwide. In particular, Europe plays a leading role in quantum research, and European scientists are among the frontrunners in this field. However, despite the increased interest the QTs are gaining, several issues are remaining today including obtaining appropriate funding that would enhance the European technological sovereignty. Although Europe has already channeled a significant amount of funding in QTs research, one of the main challenges is to train and retain physicists ready to embark on the next quantum journey. Recent breakthroughs in quantum science and technology promise further revolutionary technologies but human capital potential should be reinforced as a prerequisite for further significant progress in this field.