



African Strategy for
Fundamental and Applied Physics



Education and Capacity Building in Quantum Technologies for Africa

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What are Quantum Technologies ?

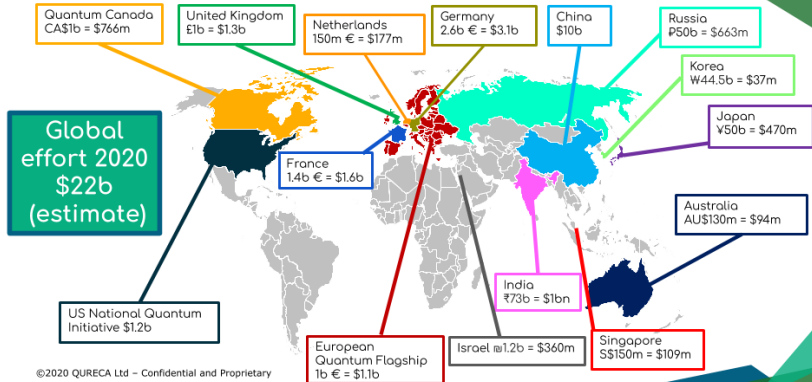
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Methods used to produce tools based on quantum properties:
 - **Quantum superposition**
of states of a physical object
 - **Quantum entanglement**
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Methods used to produce tools based on quantum properties:
 - **Quantum superposition** of states of a physical object
 - **Quantum entanglement** of several subparts of that object.
- **Quantum sensing and Metrology**, with for example, atomic clocks of GPS satellites or atomic quantum gravimeters
- **Quantum simulators**, able of modelling in a pure and controlled way the behavior of quantum systems that cannot be calculated
- **Quantum communications** allowing the inviolability of information communicated along optical fibers (QKD)
- **Quantum computing** Quantum Computers able to perform certain calculations much more efficiently than with our current computers.

Quantum effort worldwide

Quantum effort worldwide



A. Venegas-Gomez and R. Mani, The Quatum Daily (September 2020)

Education and Capacity Building in Quantum Technologies

Why Education and Capacity Building in Quantum Technologies is important to us ?

- Contribute to the global development and economic growth
- Improve the ranking of African Universities



Shanghai World Ranking of top 1000 universities

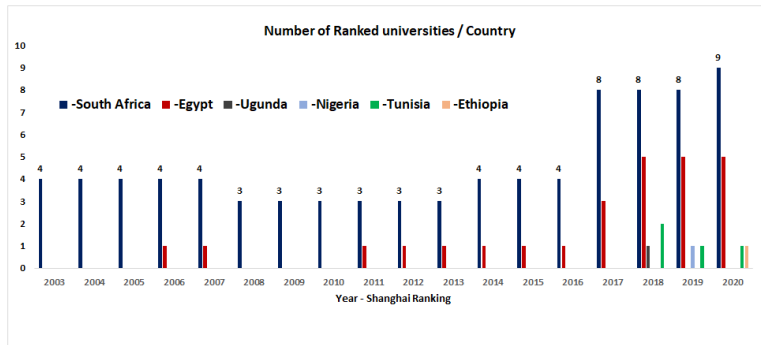


Challenge One Tunisian first nano-satellite (2021)

Economic growth : Quantum Metrology



African universities in Shanghai ranking



For more details : see African Physics Newsletter issue 9, April 2021

Quantum Education in Africa



QUANTUM AFRICA 5

Stellenbosch, South Africa
2nd-6th September 2019



ASFAP for Quantum Africa



