Action Line 1: Research and Innovation: Open call

Session coordinators:
Servaas Kokkelmans (QT/e)
Wieteke de Boer (NWO)

Zoom, 28-01-2021
Growth Fund proposal: based on NAQT

Six research lines:
- Quantum Computing
- Quantum Sensing
- Quantum Simulation
- Quantum Algorithms
- Post-quantum Crypto
- Ecosystem, Market Creation and Infrastructure
- Human Capital
- Research and Innovation
**Growth Fund proposal: Budget**

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Growth Fund proposal: Action Line 1: Open call

- Open call executed by NWO
- For the six research lines described in the NAQT:

**Quantum Computing**, based on CAT-1: the development of different types of qubits, active error correction, architecture and electronics.


**Quantum Sensing**, based on CAT-3: research, optimization and verification of phase-2 quantum sensors in existing architecture.


**Quantum Algorithms**, based on CAT-1,2,3: acquiring knowledge on issues which can be solved faster by quantum computers than by classical super computers (i.e. “quantum speed-up”), developments of concrete algorithms and protocols to realize this speed-up, connecting hardware- and software development.

**Post-quantum Crypto**, following from the impact of CAT-1: the design and analysis of cryptographic systems which are safe to the extent of being unhackable even by those who are in possession of a quantum computer.
Governance structure Action Line 1

NWO Quantum Committee = AL-1 Advisory committee

Prof. Servaas Kokkelmans (chair)
QT/e
Quantum simulators

dr. Wieteke de Boer
Secretary NWO Quantum committee

Prof. Tanja Lange
TU/e
Post quantum cryptography

Prof. Pepijn Pinkse
UT
Quantum optics

Prof. Cristiane Morais Smith
UU
Condensed matter theory

Prof. Stephanie Wehner
QuTech
Quantum software/network

Prof. Ronald Hanson
QuTech
Quantum technology/computer

Prof. Carlo Beenakker
UL
Theory of condensed matter

Prof. Harry Buhrman
QuSoft/CWI
Computer simulation

Rogier Verberk
TNO
Quantum Computer
Maskless Lithography
Scope of the Quantum Committee:

- Keep an overview of the NL quantum technology related research field, with the specific focus on fundamental research for the entire spectrum of quantum-related research. Important here is to look for opportunities on how quantum research can be developed into quantum technology (with higher TRL)
- Stimulate and enhance cohesion and synergy between existing research groups
- Monitor quantumtech-related developments both in the NL and abroad. For Europe that will be in context of e.g. QuantERA and the QT Flagship, and globally other opportunities such as the US, Canada and Japan
- A coordinating role in stimulating national and international consortia
- Initiating/maintaining contact with relevant groups abroad
- Contact point for knowledge institutes, industry, startups, EU Flagship and government regarding developments/requests/opportunities
- Mobilizing private finance opportunities
- Special task Growth Fund: advisory committee for Action Line 1 “Research & Innovation”
Input/questions/feedback

• Input/questions/feedback:
  • AL-1: Servaas Kokkelmans and Wieteke de Boer

• Note that everything is currently in motion and that all processes are dynamic! Input is more than welcome!
Thank you for your attention!

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