

Quantum technologies Thales Research & Technology

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Applications of quantum technologies

- **New products resulting from basic research**
 - Improved performances
 - New functionalities with no classical counter-part
- **Applications**
 - gravity, acceleration, rotation
 - Time & frequency
 - Magnetic and electric fields
 - RF spectrum analysis
- **Requirements**
 - Technical sensitivity, accuracy, etc
 - Product: optimized cost, reliability, manufacturability



Thales Electron Devices

Demonstrators based on quantum technologies

Secure communications

> Quantum key distribution

- TRT / LCFIO
- Continuous variables
- Telecom components
- Field demonstrators

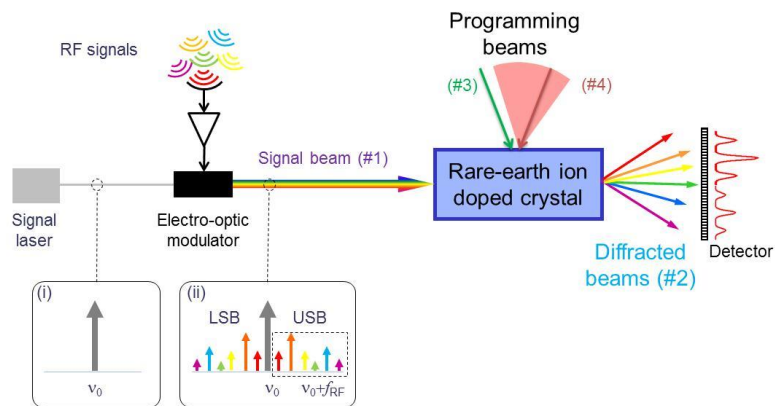


SEQURE
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RF spectrum analyser

> Spectral Hole burning

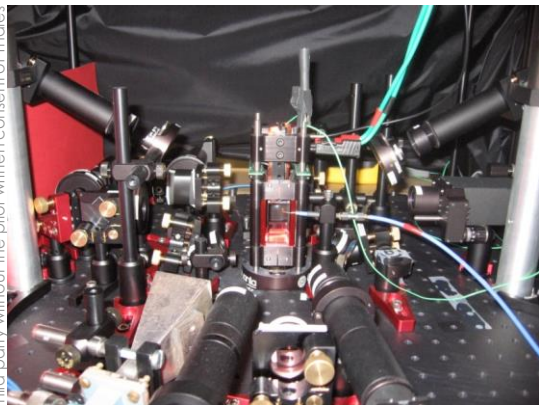
- TRT / LAC
- Rare-earth doped crystals
- bandwidth: 20 GHz



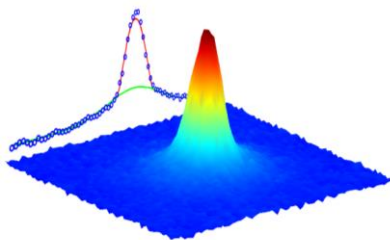
Current research on quantum technologies

Cold atoms on chip

- gravimeter, accelerometer, clock



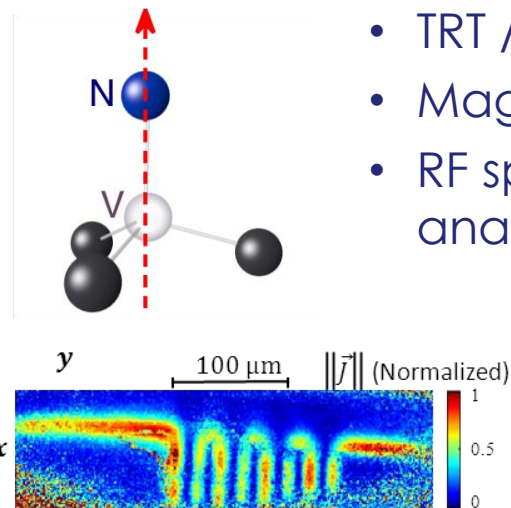
- TRT / LCFIO



BEC on chip

NV centers in diamond

- Solid-state sensor at room temperature



- TRT / LAC
- Magnetometer
- RF spectrum analyser

