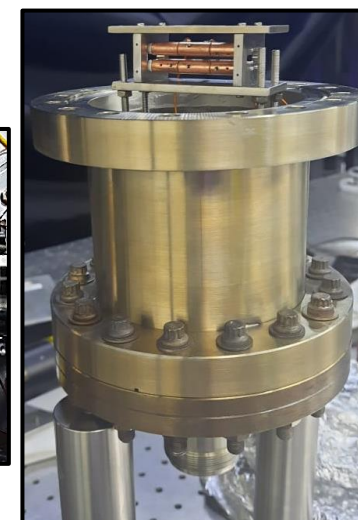
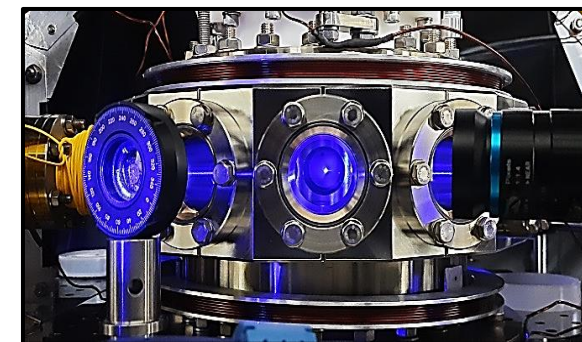


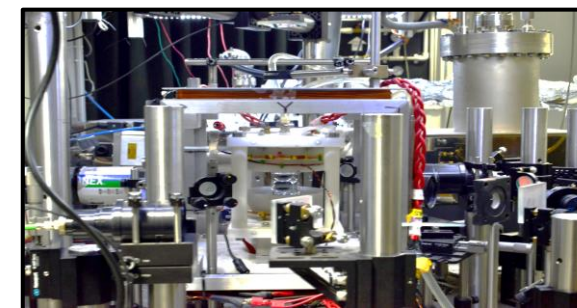
Quantum Clock

[Ultra Cold Sr atoms]



Gravimeter

[Rb BEC]



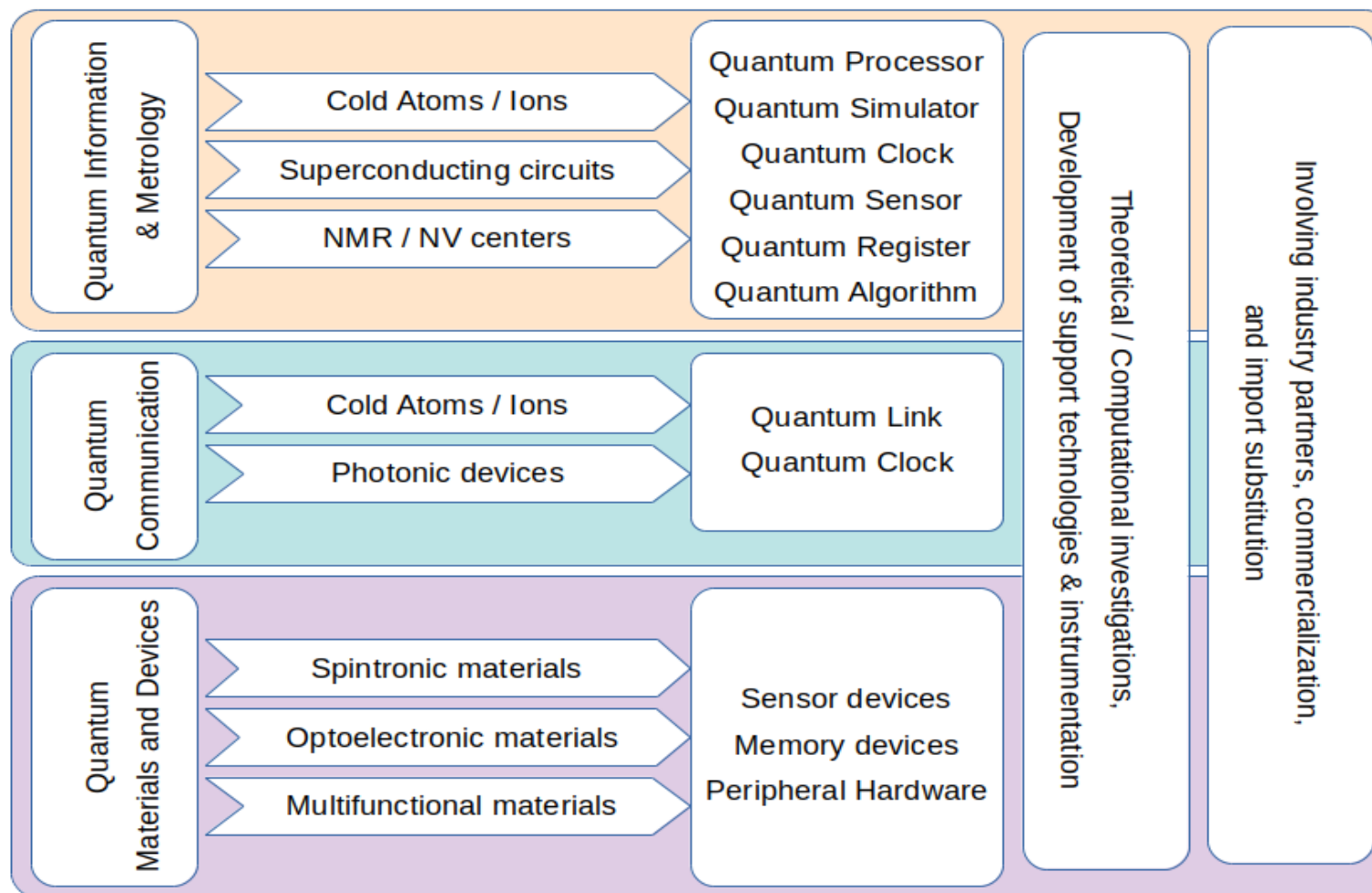
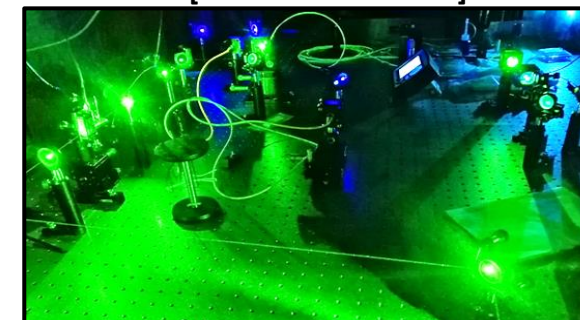
Data Storage

[Spintronic Devices]



Quantum Sensors

[Diamond-based NV]

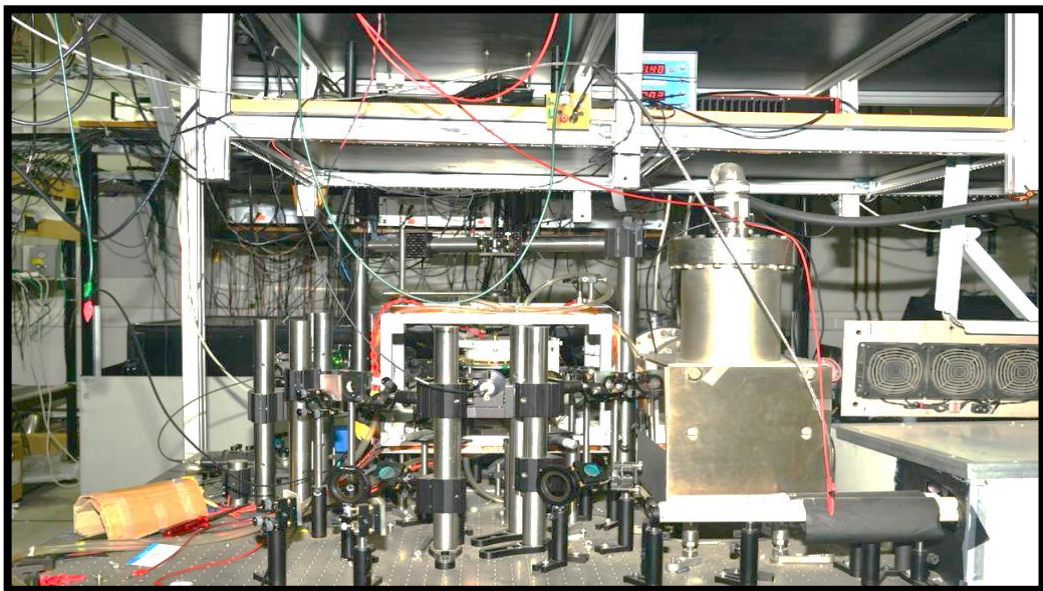


Success Story

High precision measurement of absolute local gravitational acceleration 'g'

$$g = 9.7959938810(19) \text{ m/s}^2$$

Latitude (green arrow pointing to 9.7959938810)
 Density (Rocks) (red arrow pointing to 9.7959938810)
 Moon (black arrow pointing to 9.7959938810)
 Hydrology (blue arrow pointing to 9.7959938810)
 Altitude (blue arrow pointing to 9.7959938810)
 People, Chairs (purple arrow pointing to 9.7959938810)



Work in Progress:

- ☐ Engineering prototype – Transportable Gravimeter
- ☐ Higher Precision, upto 8th decimal place

Successfully demonstrated 6th decimal place of 'g'

No. of Technologies
Developed/Commercialized

High precision measurement
of absolute local
gravitational acceleration 'g'

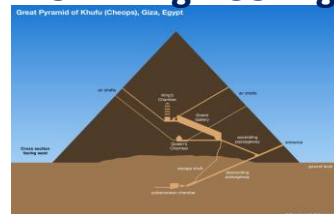
$$g = 9.7959938810(19) \text{ m/s}^2$$

Latitude
Density (Rocks)
Moon
Hydrology
Altitude
People, Chairs

Development of Gravimeter: TRL 7

Applications: Hydrology & Underground Resource Mapping

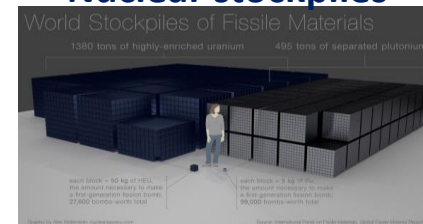
Civil Engineering



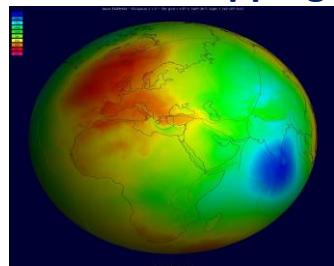
Tunnels



Nuclear stockpiles



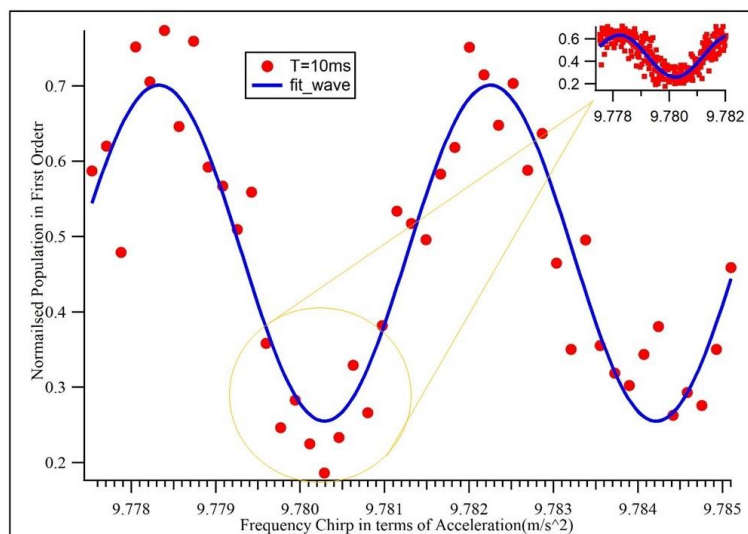
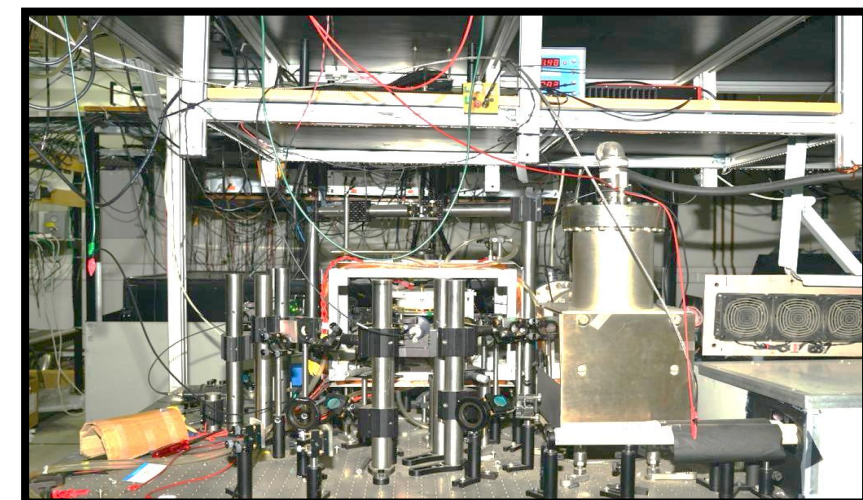
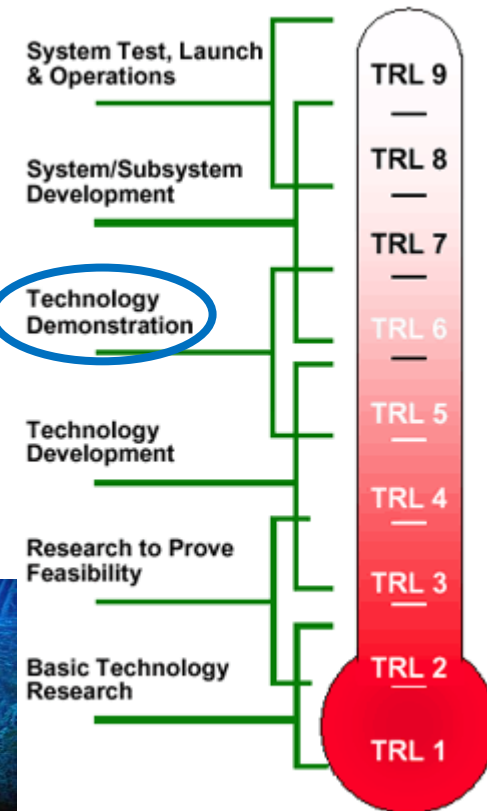
Geoid Mapping



Hidden machinery



Marine wreck & mines



Interferogram time
T = 10 ms

Current Sensitivity
~200 micro-gal

T(ms)	$\left(\frac{\Delta g}{g}\right)_{limit}$	$\frac{\Delta g}{g}$
10	$9.4 * 10^{-7}$	$2 * 10^{-6}$

Success Story

Successfully demonstrated India's first portable cold atoms
GDQLabs Developing neutral atom Quantum Computer



QT Sensitization @ COEP | VIIT | IUCAA



Nobel Prize Talk 2nd November 2022

Career Opportunities in QUANTUM TECHNOLOGIES

10 OCT 2022 | 5:30 PM - 7:00 PM
KIRLOSKAR AUDITORIUM
COEP COLLEGE, SHIVAJINAGAR PUNE

MEET THE EXPERTS

HIGHLIGHTS

- ✓ Intro to Quantum Technologies (QT)
- ✓ Applications of QT
- ✓ STEM and QT
- ✓ Career Opportunities in QT
- ✓ Funding schemes for Startups
- ✓ What I-HUB QTF can offer you!

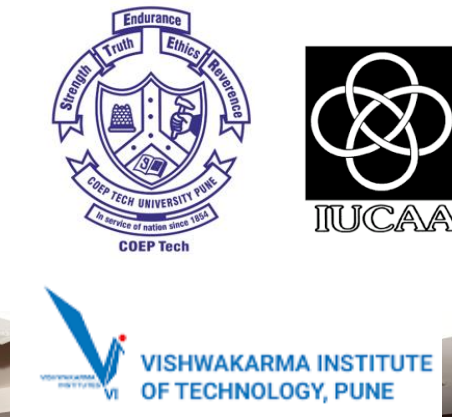
OPEN to ALL!
Come & Enjoy!

Scan the code to register -->

REGISTRATION

events@quanttech.org.in

• Quiz and Q&A
• Exciting Prizes



VISHWAKARMA INSTITUTE OF TECHNOLOGY, PUNE

FRIQUANT SEMINAR SERIES ... the weekly QT dose at I-HUB QTF

PRESENTS THE WORK OF "THE NOBEL PRIZE IN PHYSICS 2022"

Special FriQuant Seminar!

Nobel Prize 2022 in Physics has been awarded to Alain Aspect, John Clauser, and Anton Zeilinger for their series of practical experiments conducted independently over the years, particularly using entangled light particles (photons), that eventually validated quantum theory by clearly violating Bell's inequality while closing the important loopholes. This is a proud moment for the whole community and we shall celebrate together. In this talk, as a tribute to my former professor Alain Aspect, I will take you on a journey through the fascinating works of the Nobel laureates starting from the conceptualization of quantum entanglement to its validation and potential application for the development of quantum information technologies." - Dr. Syamsundar De

WEDNESDAY 02 NOV 2022
4:00 - 6:00 PM
I-HUB QTF, IISER PUNE
Seminar in Hybrid Mode (Attend Online/Offline)

4:00 pm: Talk on Nobel Prize Work
5:00 pm: Q&A session
5:30 pm: Networking & Tea

REGISTER FOR FREE

OPEN FOR ALL!

Speaker: Dr. Syamsundar De
ADVANCED TECHNOLOGY DEVELOPMENT CENTRE
IIT KHARAGPUR

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I-HUB QTF@IBM THINK 2022