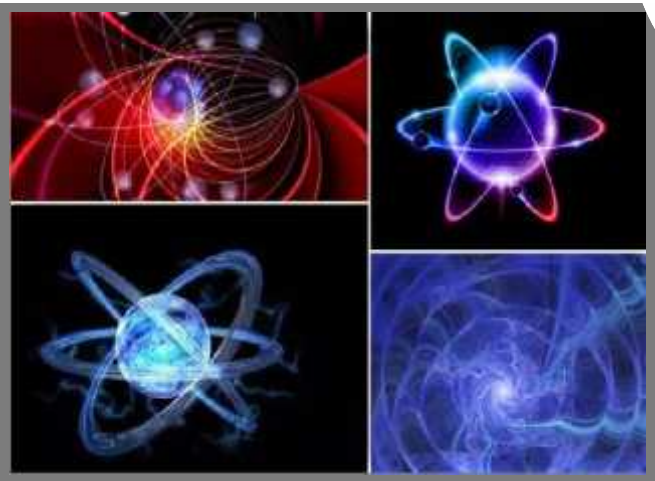
Afghan Women's Physics Academy (AWPA)



Quantum
Physics

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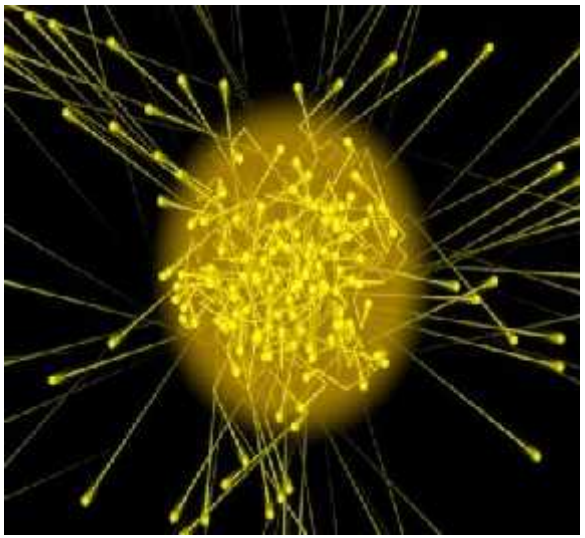
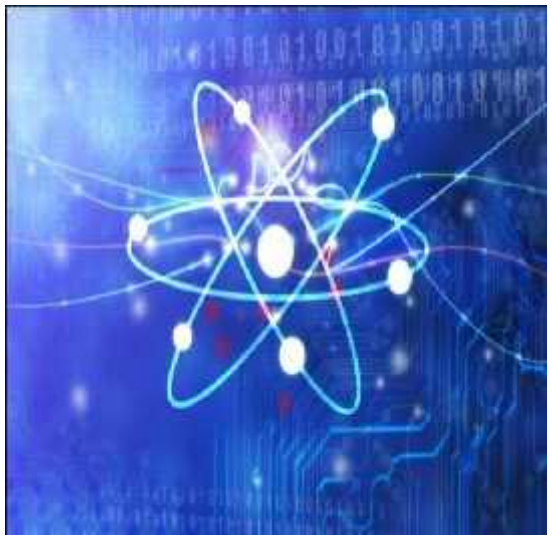
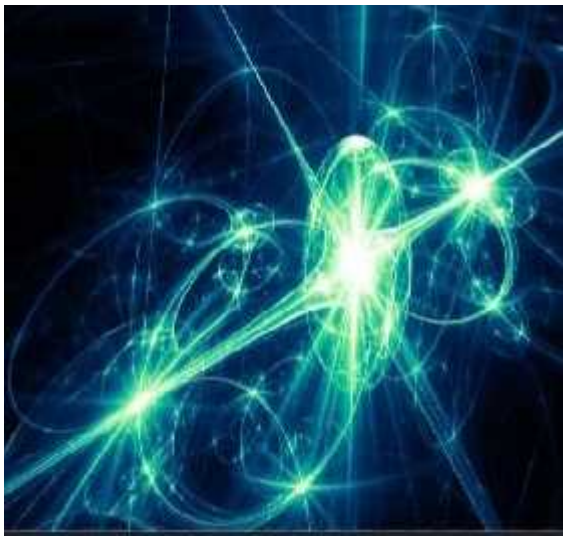
Introduction

Quantum Physics studies the tiny world of atoms and Particles.

Superposition: Particles can exist in multiple states at the same time.

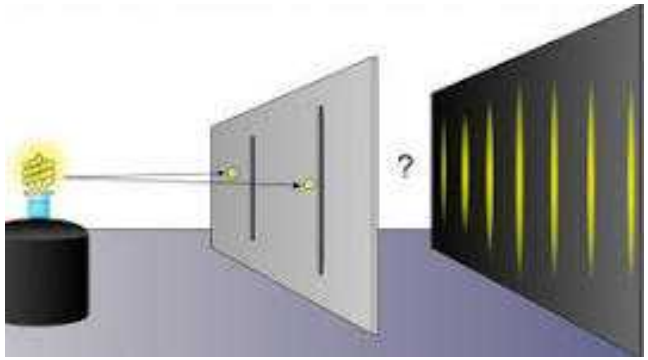
Entanglement: Particles can be connected and instantly affect each other.

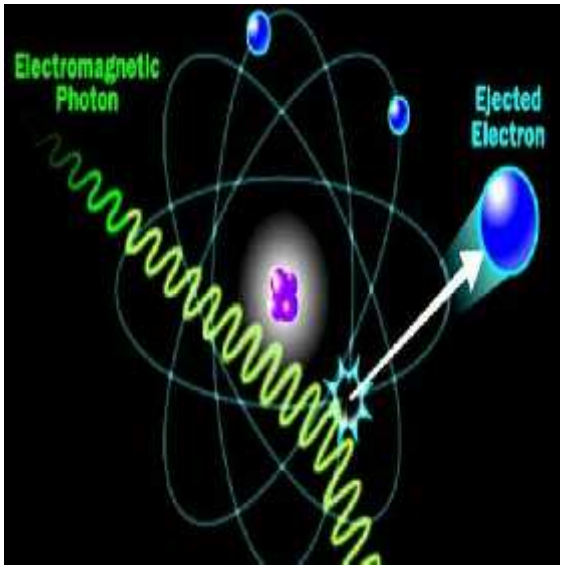
Observer effect: Observing a particle can change its behavior.

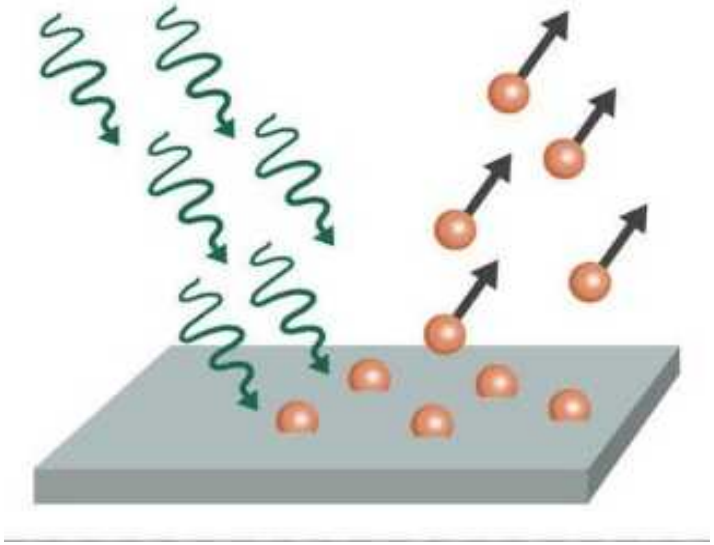




The Birth of Quantum Physics

- **1900**- **Max Planck**: introduced the idea of energy to explain blackbody radiation.
- **1905**- **Albert Einstein**: explained the photoelectric effect using light quanta (photons)
- **1925-1926**- **Schrodinger & Heisenberg**: developed the first formulations of quantum mechanics.
- **1927**- **Copenhagen Interpretation**: introduced fundamental principles like superposition and uncertainty.



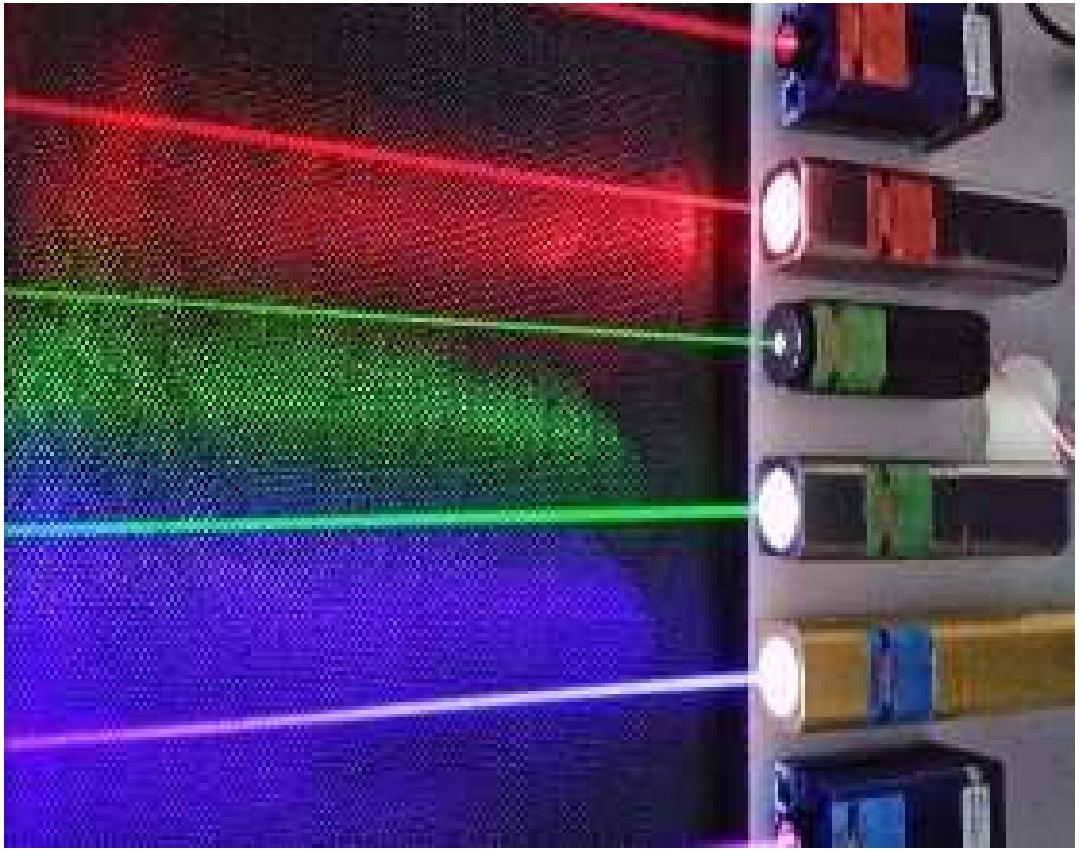




Why Quantum Physics Emerged?

Applications

- ✓ Quantum computing
- ✓ Semiconductors & electronics
- ✓ Lasers
- ✓ Quantum Cryptography
- ✓ Medical imaging



Next Steps

- Continue investigating and analyzing complex quantum phenomena at the theoretical level.
- Focus on online studies and analysis of existing data without conducting current physical experiments.
- Perform simple simulation of superposition using basic quantum states (if possible)

Thank you!