Topics for final presentations

1. Metamaterials: properties and applications
2. Optical cloaking
3. Spintronics: basic ideas and applications
4. Giant magnetoresistance and its applications
5. Multi-electron atoms and Hund's rules
6. Plasmonics: basic ideas and applications
7. Liquid crystals: phases, birefringence, and applications
8. Quantum parallelism: Deutsch's algorithm
9. Quantum entanglement and EPR paradox
10. Quantum cryptography: BB84 protocol for quantum key distribution
11. Quantum dots: basic properties and applications
12. Quantum teleportation: idea and implementation
13. Bose–Einstein condensate – the fifth state of matter
14. Superconductivity: basic ideas and applications
15. Dark matter: detection methods
16. Black holes and curvature of spacetime
17. Einstein–Rosen bridges and possibility of time travel