## The University of Tokushima (2011)) Graduate School of Advanced Technology and Science) Electrical and Electronic Engineering (Doctor) [=>Japanese] **Advanced Lecture on Ouantum Nanostructure Semiconductors** 2 units (selection) TOShiro ISU · PROFESSOR / INSTITUTE OF TECHNOLOGY AND SCIENCE, TAKAHIRO KITADA · ASSOCIATE PROFESSOR / INSTITUTE OF TECHNOLOGY AND SCIENCE Target > This lecture aims at understanding basic concepts of the quantum $\Rightarrow$ Isu (A224, +81-88-656-7670, t.isu@frc.tokushima-u.ac.jp) MAIL (Office effects of semiconductor nanostructures based on materials science and various Hour: Tue -Thu 10:00-14:00) technologies for device applications. Outline This lecture introduces characteristics of quantum structures and technologies of the device applications, based on quantum mechanics, semiconductor physics, materials science and photonics. Advanced technologies of fabrication and measurements and recent topics of the research are also introduced. **Style**> Lecture Goal) To understand materials science and application technologies of nano structure semiconductors Schedule> **1.** Electronic states in semiconductor quantum structures 2. Electronic properties of quantum stutures 3. Optical properties of quantum stutures 4. Fabrication technologies of semiconductor nanostructures **5.** Evaluation technologies of crystals 6. Evaluation technologies of nanostructures 7. Analysis of elctronic properties 8. Analysis of optical properties 9. Quantum effect devices 10. Nonlinear optical responces of semiconductors **11.** Responces of optical micro cavity 12. Research progress in quantum nanostructure semiconductors

- 13. Ultrafast optical devices
- 14. Quantum information devices
- **15.** Topics of recent advanced research (1)
- 16. Topics of recent advanced research (2)

## **Evaluation Criteria** Assignments

Textbook > None

**Reference** $\rangle$  To be introduced in the class

Contents http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216907

## **Contact**>