

目次

1.	サファイア基板上GaN系面発光レーザに関する研究	1
2.	InGaPを用いたタンデム型太陽電池に関する研究	94
3.	本研究に関する発表・論文	155

[GaN]

[1]	Schottky diodes of Ni/Au on n-GaN grown on sapphire and SiC substrates	155
[2]	High-Transconductance AlGaIn/GaN High-Electron-Mobility Transistors on Semi-Insulating Silicon Carbide Substrate	158
[3]	High-temperature effects of AlGaIn/GaN high-electron-mobility transistors on sapphire and semi-insulating SiC substrates	161
[4]	Studies of AlGaIn/GaN High-Electron Mobility Transistors on Semi-Insulating Silicon Carbide and Sapphire Substrates	164
[5]	Excellent DC characteristics of HEMTs on semi-insulating silicon carbide substrate	166
[6]	High Performance AlGaIn/GaN HEMTs with Recessed Gate on Sapphire Substrates	168
[7]	High Performance AlGaIn/GaN HEMTs with Recessed Gate	170
[8]	AlGaIn/GaN構造を用いた高電子移動度トランジスタ	172
[9]	GaN系面発光レーザ用GaN/Al _{0.6} Ga _{0.4} N多層膜反射鏡の作製	175
[10]	MOCVD growth of high reflective GaN/AlGaIn distributed Bragg reflectors	181
[11]	Suppression of GaInN/GaN Multi-Quantum-Well Decomposition during the Growth of Light-Emitting-Diode Structure	188
[12]	InGaIn LED on Sapphire Substrate Grown by MOCVD	191
[13]	InGaIn multiple-quantum-well green light-emitting diodes on Si grown by metalorganic chemical vapor deposition	192
[14]	InGaIn Multiple-Quantum-Well Light Emitting Diodes on Si(111) Substrates	195
[15]	Reliable InGaIn Multiple-Quantum Well Green LEDs on Si Grown by MOCVD	199
[16]	Si基板上GaN系発光ダイオードの結晶成長及び諸特性	203
[17]	GaN-based optoelectronic devices on sapphire and Si substrates	209
[18]	Si基板上GaN系半導体の結晶成長と発光素子への応用	217
[19]	GaN Metal-Semiconductor-Metal UV Photodetector with Recessed Electrodes	222
[20]	Back-Illuminated GaN Metal-Semiconductor-Metal UV Photodetector with High Internal Gain	225

[GaAs, InGaP]

[1]	Deep levels reduction in (NH ₄) ₂ S treated and annealed GaAs epilayer on Si substrate	228
[2]	Hydrogen Plasma Passivation of Bulk GaAs and Al _{0.3} Ga _{0.7} As/GaAs Multiple-Quantum-Well Structures on Si Substrates	233
[3]	Passivation of dislocations in GaAs grown on Si substrates by phosphine (PH ₃) plasma exposure	238
[4]	Passivation of Bulk and Surface Defects in GaAs Grown on Si Substrate	

	by Radio Frequency Phosphine/Hydrogen Plasma Exposure	241
[5]	Structural Comparison between Ge and GaAs Films Grown by Molecular Beam Epitaxy on Si Substrate	245
[6]	Investigation of Electrical and Optical Properties of Phosphine/Hydrogen-Plasma -Exposed $\text{In}_{0.49}\text{Ga}_{0.51}\text{P}$ Grown on Si Substrate	247
[7]	Over 18% solar energy conversion to generation of hydrogen fuel; theory and experiment for efficient solar water splitting	250
[8]	Realization of GaAs/AlGaAs Lasers on Si Substrates Using Epitaxial Lateral Overgrowth by Metalorganic Chemical Vapor Deposition	257
[9]	Growth of $\text{In}_x\text{Ga}_{1-x}\text{As}$ quantum dots metal-organic chemical vapor deposition on Si substrates and in GaAs-based lasers	261
[10]	Si基板上GaAsレーザの寿命改善	268

[Carbon, TiO_2]

[1]	Diamond-like carbon by pulsed laser deposition from a camphoric target: effect of phosphorus incorporation	272
[2]	Phosphorus doping and defect studies of diamond-like carbon films by pulsed laser deposition using camphoric carbon	276
[3]	Optical and structural properties of nitrogen doped amorphous carbon films grown by rf plasma-enhanced CVD	281
[4]	Thermal Stability of Nanocrystalline Diamond Films Grown by Based Enhanced Microwave Plasma Chemical Vapor Deposition	286
[5]	Highly stressed carbon film coating on silicon: Potential applications	290
[6]	Theoretical studies on the solar cell parameters of n-C/p-Si heterojunction	293
[7]	Fabrication of a TiO_2 -Based Solid-State Cell with an Organic Polymer as a Sensitizer	299

[ニューラルネット, 制御]

[1]	Motion Detection Two-Dimensional MOS Analog Electric Circuits Using Biomedical Vision Model	302
[2]	Speed and Direction Detecting Artificial Vision Model by the Two-Dimensional Analog Electric Circuits	311
[3]	Motion Detection Two-Dimensional Three-Layers Analog Electric Circuits Using Biomedical Vision Model	321
[4]	二次元三層アナログ電子回路による生体の視覚系モデル	327
[5]	CMOS多値回路の設計と画像処理への応用	328
[6]	Multirate Sampled Data Control based on Time-State Control Form	330
[7]	時間軸状態制御形に基づくマルチレートサンプル値制御系の安定化	336