

# Top-20 downloaded IOP articles by corporates in Japan during 2020.

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1. Structural characteristics of a non-polar ZnS layer on a ZnO buffer layer formed on a sapphire substrate by mist chemical vapor deposition
2. Coincidence time resolution of 30 ps FWHM using a pair of Cherenkov-radiator-integrated MCP-PMTs
3. Evolution of implicate order from amorphous to polycrystalline Sn-doped  $\text{In}_2\text{O}_3$  films
4. Determination of absolute number of graphene layers on nickel substrate with scanning Auger microprobe
5. High hole concentration in Mg-doped AlN/AlGaN superlattices with high Al content
6. Electrode/E Electrolytes Based on Lithium Bis(fluorosulfonyl)imide and Sulfolane Electrolyte Interface Study of LiCoO<sub>2</sub>/Graphite Cell Using Carbonate-Free
7. Room-temperature operation of AlGaN ultraviolet-B laser diode at 298 nm on lattice-relaxed Al<sub>0.6</sub>Ga<sub>0.4</sub>N/AlN/sapphire
8. Reformulation of a clinical-dose system for carbon-ion radiotherapy treatment planning at the National Institute of Radiological Sciences, Japan
9. Formation of C<sub>2</sub> organic molecules from CO<sub>2</sub> and H<sub>2</sub>O by femtosecond laser induced chemical reactions in water
10. AlN nanostructures and flat, void-less AlN templates formed by hydride vapor phase epitaxy on patterned sapphire substrates
11. Electrochromic properties of epitaxial WO<sub>3</sub> thin films grown on sapphire substrates
12. Room-temperature continuous-wave operation of green vertical-cavity surface-emitting lasers with a curved mirror fabricated on {20–21} semi-polar GaN
13. Room-temperature bonding of epitaxial layer to carbon-cluster ion-implanted silicon wafers for CMOS image sensors
14. Design study of a brain-dedicated time-of-flight PET system with a hemispherical detector arrangement
15. A 271.8 nm deep-ultraviolet laser diode for room temperature operation
16. GaN substrates having a low dislocation density and a small off-angle variation prepared by hydride vapor phase epitaxy and maskless-3D
17. Indication of current-injection lasing from an organic semiconductor
18. Experimental observations of an  $n = 1$  helical core accompanied by a saturated  $m/n = 2/1$  tearing mode with low mode frequencies in JT-60U
19. A Wide Range of Testing Results on an Excellent Lithium-Ion Cell Chemistry to be used as Benchmarks for New Battery Technologies
20. Thermionic emission and conversion properties of n-type AlGaN thin film cathodes grown on 6H-SiC substrates



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# Top-20 semantic terms in Japan during 2020.

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Magnetic fields

Electric fields

Thin films

Silicon

Metals

Polarization

Scanning electron microscopy

Band gaps

Materials

Semiconductor devices

Transmission electron  
microscopy

Angular resolution

Low temperature

Crystal structure

High temperature

Density of states

Band structure

Refractive index

Atomic force microscopy

Phase transitions



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