This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy.

## Spotlights

On many occasions in the past, progress in applied physics has been promoted by crossdisciplinary research and for this reason we believe that it is valuable to give readers a broad perspective on current research. Each month we will select and suggest a small number of articles with a high potential for capturing the interest of researchers in the applied physics community. We hope that Spotlights will provide opportunities to redirect readers beyond their usual interests.

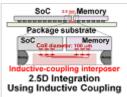
## Sign up below to receive monthly Spotlights

Email

By providing your email address for this service you agree that IOP Publishing can email you on a regular basis for the purpose of sharing the latest Spotlights. You will be able to unsubscribe at any time and your email address will not be shared with anyone else. For more information, please see our privacy policy

Submit

## Latest spotlights

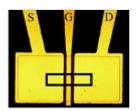


2.5D integration using inductive-coupling TSV-less miniature interposer achieving 317 Gb/s/mm^2, 1.2 pJ/b data-transfer

Kota Shiba et al 2020 Jpn. J. Appl. Phys. 59 SGGL06

View abstract

🔄 View article 🛛 😕 PDF



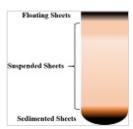
Low-temperature (150 °C) processed metal-semiconductor field-effect transistor with a hydrogenated In–Ga–Zn–O stacked channel Yusaku Magari *et al* 2020 *Jpn. J. Appl. Phys.* **59** SGGJ04 View abstract

Synthesis of Ge-based nanosheet bundles using calcium germanides as templates in IP6 aqueous solution

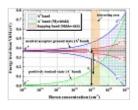
Vimal Saxena et al 2020 Jpn. J. Appl. Phys. 59 SGGK08

article

🔁 PDF





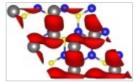


Electrical properties and conduction mechanisms of heavily B<sup>+</sup>-ion-implanted type IIa diamond: effects of temperatures during the ion implantation and postannealing upon electrical conduction Yuhei Seki *et al* 2020 *Jpn. J. Appl. Phys.* **59** 021003

🟸 PDF



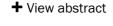
Influence of GaN/sapphire contact area on bowing of GaN wafer grown by the Na-flux method with a sapphire dissolution process Takumi Yamada *et al* 2020 *Jpn. J. Appl. Phys.* **59** 025505 View abstract View article PDF



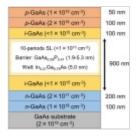
Tunable electronic properties in bismuthene/2D silicon carbide van der Waals heterobilayer

🔁 PDF

Joy D. Sarker et al 2020 Jpn. J. Appl. Phys. 59 SCCC03



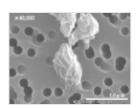
View article



Effects of barrier thickness on carrier non-radiative relaxation process in InGaAs/GaAsP superlattice solar cells by piezoelectric photothermal and surface photovoltage spectroscopies

Tsubasa Nakamura et al 2019 Jpn. J. Appl. Phys. 58 112001

🔳 View article 🛛 🔁 PDF

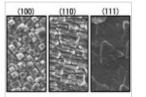


Electric antibacterial effect of piezoelectric poly(lactic acid) fabric

Masamichi Ando et al 2019 Jpn. J. Appl. Phys. 58 SLLD09

View abstract

🔄 View article 🛛 🔁 PDF

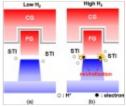


Growth of epitaxial (K, Na)NbO<sub>3</sub> films with various orientations by hydrothermal method and their properties

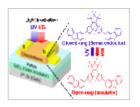
Yoshiharu Ito et al 2019 Jpn. J. Appl. Phys. 58 SLLB14

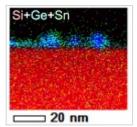
🔳 View article 🛛 🔁 PDF

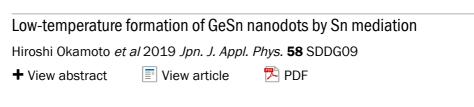


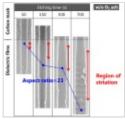


The effect of hydrogen on programmed threshold-voltage distribution in NAND flash memories Yung-Yueh Chiu *et al* 2019 *Jpn. J. Appl. Phys.* **58** 081002 View abstract View article PDF









Formation mechanism of sidewall striation in high-aspect-ratio hole etching
 Mitsuhiro Omura *et al* 2019 *Jpn. J. Appl. Phys.* 58 SEEB02
 View abstract View article PDF

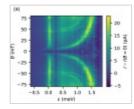


Observation of room temperature electronic localization through a single graphene layer on sapphire

Elisseos Verveniotis et al 2019 Jpn. J. Appl. Phys. 58 055007

View abstract

🔳 View article 🛛 😕 PDF



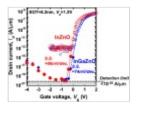
Spin-orbit assisted spin funnels in DC transport through a physically defined pMOS double quantum dot

🔁 PDF

Marian Marx et al 2019 Jpn. J. Appl. Phys. 58 SBBI07

View article



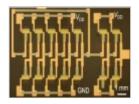


High mobility (>30 cm<sup>2</sup> V<sup>-1</sup> s<sup>-1</sup>) and low source/drain parasitic resistance In– Zn–O BEOL transistor with ultralow <10–20 A  $\mu$ m<sup>-1</sup> off-state leakage current

🟸 PDF

Nobuyoshi Saito et al 2019 Jpn. J. Appl. Phys. 58 SBBJ07

View article



A ring oscillator consisting of pentacene thin-film transistors with controlled threshold voltages

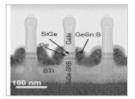
Hajime Takahashi et al 2019 Jpn. J. Appl. Phys. 58 SBBJ04

View abstract

➡ View abstract

➡ View abstract

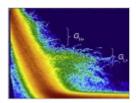
🔳 View article 🛛 🔁 PDF



Low temperature epitaxial growth of Ge:B and  $Ge_{0.99}Sn_{0.01}$ :B source/drain for Ge pMOS devices: in-situ and conformal B-doping, selectivity towards oxide and nitride with no need for any post-epi activation treatment

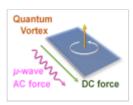
Anurag Vohra et al 2019 Jpn. J. Appl. Phys. 58 SBBA04

📄 View article 🛛 🔁 PDF



Control of molecular orientation in a single-molecule junction with a tripodal triptycene anchoring unit: toward a simple and facile single-molecule diode Shintaro Fujii *et al* 2019 *Jpn. J. Appl. Phys.* **58** 035003 + View abstract View article PDF

article 🛛 🔁 PD



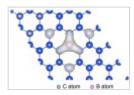
Current and magnetic field dependences of a superconducting coplanar waveguide resonator

H. Kurokawa *et al* 2019 *Jpn. J. Appl. Phys.* **58** 033001

➡ View abstract

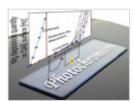
📰 View article 🛛 😕 PDF

Effects of gas adsorption on the stabilities, electronic structures, and scanning tunneling microscopy of graphene monolayers doped with B or N



Yoshitaka Fujimoto and Susumu Saito 2019 Jpn. J. Appl. Phys. 58 015005

View article

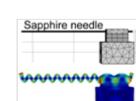


Nucleation mechanism of metal-vapor atoms on photochromic diarylethene
surface with a low glass transition temperature
Ikumi Takemoto and Tsuvoshi Tsujioka 2018 <i>Inn. I. Appl. Phys.</i> <b>57</b> 121601

🔁 PDF

shi Tsujioka 2018 *Jpn. J. Appl. Phys.* **57** 121601 View article 🔁 PDF

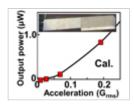
View abstract



Development and evaluation of ultrasound-facilitated drug delivery device Kenji Inoue et al 2018 Jpn. J. Appl. Phys. 57 11UD07 View article 🔁 PDF ➡ View abstract



Numerical designs of piezoelectric thin-film vibration energy harvesters Toshihito Umegaki et al 2018 Jpn. J. Appl. Phys. 57 11UD06 View article 🔁 PDF 

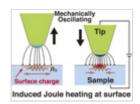


Investigation of mechanical nonlinear effect in piezoelectric MEMS vibration energy harvesters Masaaki Aramaki et al 2018 Jpn. J. Appl. Phys. 57 11UD03 🔁 PDF ➡ View abstract View article



Output evaluation of a world's highest efficiency flat sub module with InGaP/GaAs/InGaAs inverted triple-junction solar cell under outdoor operation

Yasuyuki Ota et al 2018 Jpn. J. Appl. Phys. 57 08RD08 View article 🔁 PDF 



Resistivity change in Joule heat energy dissipation detected by noncontact atomic force microscopy using a silicon tip terminated with/without atomic hydrogen

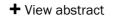
Toyoko Arai et al 2018 Jpn. J. Appl. Phys. 57 08NB04

➡ View abstract

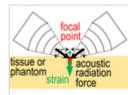
View article 🔁 PDF

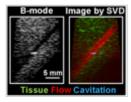
Frequency characteristics of vibration generated by dual acoustic radiation force for estimating viscoelastic properties of biological tissues

Ryoichi Watanabe et al 2018 Jpn. J. Appl. Phys. 57 07LF09

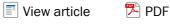


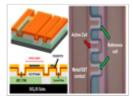




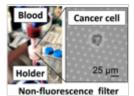


Singular value decomposition of received ultrasound signal to separate tissue, blood flow, and cavitation signals Hayato Ikeda *et al* 2018 *Jpn. J. Appl. Phys.* **57** 07LF04

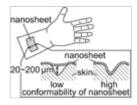




Improvement in cyclic operation of unit pixel device using Sb-excess Ge<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub> thin films for hologram image implementation
Han-Byeol Kang *et al* 2018 *Jpn. J. Appl. Phys.* **57** 082201
View abstract View article PDF



Low-autofluorescence fluoropolymer membrane filters for cell filtration				
Naoto Kihara <i>et al</i> 2018 <i>Jpn. J. Appl. Phys.</i> <b>57</b> 06JF03				
	View article	🔁 PDF		

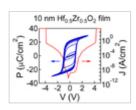


Measurement of conformability and adhesion energy of polymeric ultrathin film to skin model Junki Sugano *et al* 2018 *Jpn. J. Appl. Phys.* **57** 06HJ04

➡ View abstract

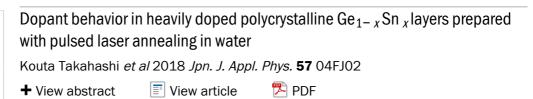
**OPEN ACCESS** 

🔄 View article 🛛 🔁 PDF



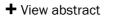
Polarization switching behavior of Hf–Zr–O ferroelectric ultrathin films studied through coercive field characteristics Shinji Migita *et al* 2018 *Jpn. J. Appl. Phys.* **57** 04FB01 + View abstract View article PDF

Laser Water Doped GeSn

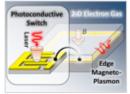


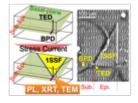
Generation and detection of edge magnetoplasmons in a quantum Hall system using a photoconductive switch

Chaojing Lin et al 2018 Jpn. J. Appl. Phys. 57 04FK02





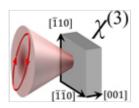




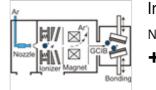
Influence of basal-plane dislocation structures on expansion of single Shockley-type stacking faults in forward-current degradation of 4H-SiC p-i-n diodes

🔁 PDF

Shohei Hayashi et al 2018 Jpn. J. Appl. Phys. 57 04FR07



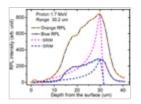




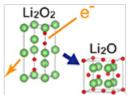
 Irradiation conditions of gas cluster ion beam for surface-activated bonding

 Noriaki Toyoda et al 2018 Jpn. J. Appl. Phys. 57 02BA02

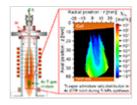
 + View abstract
 View article



Two-photon excited microscale colour centre patterns in Ag-activated phosphate glass written using a focused proton beam
Toshio Kurobori *et al* 2018 *Jpn. J. Appl. Phys.* 57 02CC01
View abstract View article PDF



Electron irradiation effects on lithium peroxideJun Kikkawa et al 2018 Jpn. J. Appl. Phys. 57 035802+ View abstractTiew articlePDF



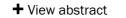
Spatial distribution of Ti vapor admixture ratio in Ar induction thermal plasma torch during Ti feedstock injection

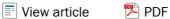
Naoto Kodama et al 2018 Jpn. J. Appl. Phys. 57 036101

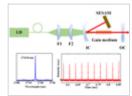
📰 View article 🛛 🔁 PDF

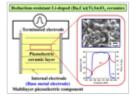
Passive Q-switching of  ${\sim}2.7~\mu m$  Er:Lu\_2O\_3 ceramic laser with a semiconductor saturable absorber mirror

Xiaojing Ren et al 2018 Jpn. J. Appl. Phys. 57 022701



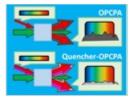






Fabrication of lead-free piezoelectric Li<sub>2</sub>CO<sub>3</sub>-added (Ba,Ca)(Ti,Sn)O<sub>3</sub> ceramics under controlled low oxygen partial pressure and their properties Kouta Noritake *et al* 2018 *Jpn. J. Appl. Phys.* **57** 021501

ticle 🛛 🔁 PDF



Investigation of optical parametric fluorescence suppression with a quencher pulse in an optical parametric chirped-pulse amplification laser Zhaoyang Li *et al* 2018 *Jpn. J. Appl. Phys.* **57** 012701

🔄 View article 🛛 🔁 PDF

## JOURNAL LINKS

Submit an article	
About the journal	
Editorial board	
Author guidelines	
Publication charges	
News and editorial	
Awards	
Journal collections	
Pricing and ordering	
Contact us	
Applied Physics Express	