**Publikacje z afiliacją CENTERA**

**2020**

1. **High-frequency current oscillations in charge-density-wave 1T-TaS2 devices: Revisiting the “narrow band noise” concept**

Adane K. Geremew, Sergey Rumyantsev, Bishwajit Debnath, Roger K. Lake, and Alexander A. Balandin

Appl. Phys. Lett. 116, 163101 (2020); IF 3.521

<https://aip.scitation.org/doi/abs/10.1063/5.0007043?journalCode=apl&>

1. ***Terahertz Magnetospectroscopy of Cyclotron Resonances from Topological Surface States in Thick Films of CdxHg1‐xTeCdHgTe***

Maximilian Otteneder, Daniel Sacré, Ivan Yahniuk, Grigory V. Budkin, Kilian Diendorfer, Dmitry A. Kozlov, Ivan A. Dmitriev, Nikolay N. Mikhailov, Sergey A. Dvoretsky, Vasily V. Bel'kov, Wojciech Knap, Sergey D. Ganichev

Phys. Status Solidi B 2020, 2000023; IF 1.454

<https://onlinelibrary.wiley.com/doi/full/10.1002/pssb.202000023>

1. ***Pulse mode of operation – A new booster of TEG, improving power up to X2.7 – to better fit IoT requirements***
Maciej Haras, Michał Markiewicz, Stephane Monfray, Thomas Skotnicki
Nano Energy 68, 104204 (2020); IF 15.548

 <https://www.sciencedirect.com/science/article/pii/S2211285519309115?via%3Dihub>

1. ***Production and processing of graphene and related materials***
Claudia Backes et al.2D Materials 7, 022001 (2020); IF 7.343

  [https://iopscience.iop.org/article/10.1088/2053-1583/ab1e0a](%20%20https%3A/iopscience.iop.org/article/10.1088/2053-1583/ab1e0a)

1. ***Software Controlled Low Cost Thermoelectric Energy Harvester for Ultra-Low Power Wireless Sensor Nodes***

Michał Markiewicz, Piotr Dziurdzia, Tomasz Konieczny, Marek Skomorowski, Liliana Kowalczyk, Thomas Skotnicki, Pascal Urard

IEEE Access, pp. 38920-38930, vol. 8 2020; IF 3.742

<https://www.researchgate.net/publication/339392469_Software_controlled_low_cost_thermoelectric_energy_harvester_for_ultra-low_power_wireless_sensor_nodes>

1. ***Disorder-induced phase transition in Dirac systems beyond the linear approximation***

Sergey S. Krishtopenko, Mauro Antezza, and Frédéric Teppe

Phys. Rev. B, vol. 101, 205424, 2020; IF 3.736

<https://journals.aps.org/prb/abstract/10.1103/PhysRevB.101.205424>

1. ***Room Temperature Amplification of Terahertz Radiation by Grating-Gate Graphene Structures***

Stephane Boubanga-Tombet, Wojciech Knap, Deepika Yadav, Akira Satou, Dmytro B. But, Vyacheslav V. Popov, Ilya V. Gorbenko, Valentin Kachorovskii, and Taiichi Otsuji

Phys. Rev. X (2020); IF 6.711

<https://journals.aps.org/prx/accepted/52079K1dC0014a02342729a68f281fe27fbfc8908>

1. ***Giant ratchet magneto-photocurrent in graphene lateral superlattices***

S. Hubmann, V. V. Bel’kov, L. E. Golub, V. Yu. Kachorovskii, M. Drienovsky, J. Eroms, D. Weiss, and S. D. Ganichev

Submitted to Phys. Rev. Research (2020); IF 4.833

<https://arxiv.org/abs/2004.04713>

1. ***Observation of terahertz-induced magnetooscillations in graphene***

E. Mönch, D. A. Bandurin, I. A. Dmitriev, I.Y. Phinney, I. Yahniuk, T. Taniguchi, K. Watanabe, P. Jarillo-Herrero, and S. D. Ganichev

Submitted to Nano Lett. (2020); IF 11.238

<https://arxiv.org/abs/2005.01118>

1. ***Observation of anomalously strong penetration of terahertz electric field through terahertz-opaque gold films into a GaAs/AlGaAs quantum well***

S. D. Ganichev, S. N. Danilov, M. Kronseder, D. Schuh, I. Gronwald, D. Bougeard, E. L. Ivchenko, and A. Ya. Shul'man

Submitted to J. Infrared, Millimeter, Terahertz Waves (2020); IF 1.765

<https://arxiv.org/abs/2002.06623>

1. ***Terahertz photoconductivity enhancement in graphene in magnetic fields***

K. A. Baryshnikov, Yu. B. Vasilyev, S. Novikov and S.N. Danilov, and S D Ganichev

J. Phys. Conf. Series 1482, 012039 (2020); IF 0.540

<https://iopscience.iop.org/article/10.1088/1742-6596/1482/1/012039/meta>

1. ***Symmetry breaking and circular photogalvanic effect in epitaxial CdxHg1-xTe films***

S. Hubmann, G.V. Budkin, M. Otteneder, D. But, D. Sacre, I. Yahniuk, K. Diendorfer, V.V. Bel'kov, D.A. Kozlov, N.N. Mikhailov, S.A. Dvoretsky, V.S. Varavin, V.G. Remesnik, S.A. Tarasenko, W. Knap, S.D. Ganichev

Phys. Rev. Materials 4, 043607 (2020); IF 2.926

<https://arxiv.org/abs/1911.01936>

1. ***Terahertz Photoconductivity in Graphene in a Magnetic Field***

Yu. B. Vasiliev, S. N. Novikov, S. N. Danilov, and S. D. Ganichev

Semiconductors 54, 465 (2020); IF 0.691

<https://www.researchgate.net/publication/340972782_Terahertz_Photoconductivity_in_Graphene_in_a_Magnetic_Field>

1. ***Enhanced Sub-wavelength Focusing by Double-Sided Lens with Phase Correction in THz Range***

M. Rachon, K. Liebert, D. B. But, P. Zagrajek, A. Siemion, A. Kolodziejczyk, M. Sypek, J. Suszek

Journal of infrared, millimeter and terahertz waves (2020); IF 2.140

<https://www.researchgate.net/publication/341356822_Enhanced_Sub-wavelength_Focusing_by_Double-Sided_Lens_with_Phase_Correction_in_THz_Range>

1. ***Graphene Epoxy-Based Composites as Efficient Electromagnetic Absorbers in the Extremely High-Frequency Band***

Zahra Barani, Fariborz Kargar, Konrad Godziszewski, Adil Rehman, Yevhen Yashchyshyn, Sergey Rumyantsev, Grzegorz Cywiński, Wojciech Knap, and Alexander A. Balandin

ACS Applied Materials and Interfaces 067297 (2020); IF 8.330

<https://pubs.acs.org/doi/10.1021/acsami.0c06729>

1. ***Grating metamaterials based on CdTe/CdMgTe quantum wells as resonant plasmonic detectors for high magnetic ﬁeld applications***

Dmitriy Yavorskiy, Maria Szoła, Krzysztof Karpierz, Rafał Bożek, Rafał Rudniewski, Grzegorz Karczewski, Tomasz Wojtowicz, Jerzy Wróbel and Jerzy Łusakowski

Applied Sciences 18(12), 4341 (2020); IF 2.474

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjKv7Gvz_TpAhWlw4sKHVsmAaYQFjAAegQIAxAB&url=https%3A%2F%2Fwww.mdpi.com%2F2076-3417%2F10%2F8%2F2807%2Fpdf&usg=AOvVaw3xw_CEbkA4Zs537KszJIw1>

1. ***Polarization of magnetoplasmons in grating metamaterials based on CdTe/CdMgTe quantum wells***

Dmitriy Yavorskiy, Maria Szoła, Krzysztof Karpierz, Rafał Bożek, Rafał Rudniewski, Grzegorz Karczewski, Tomasz Wojtowicz, Jerzy Wróbel and Jerzy Łusakowski

Materials 134, 973–977 (2020); IF 2.972

<https://pubmed.ncbi.nlm.nih.gov/32290498/>

1. ***Modeling the Current–Voltage Characteristics of Ge1−xSnx Electron–Hole Bilayer TFET With Various Compositions***

Piotr Wiśniewski and Bogdan Majkusiak

IEEE Transactions on Electron Devices; IF 2.704

[https://sci-hub.tw/https://ieeexplore.ieee.org/document/9106788](https://sci-hub.tw/https%3A/ieeexplore.ieee.org/document/9106788)

1. ***Hydrodynamic Inverse Faraday Effect in Two Dimensional Electron Liquid***

S.O. Potashin, V.Yu. Kachorovskii, M.S. Shur

Wysłany do Physical Review B; IF 3.736

<https://arxiv.org/abs/2001.08015>

1. ***Spin filtering by helical edgestates of topological insulator***

R. A. Niyazov, D. N. Aristov, V. Yu. Kachorovskii

Wysłany do Nature Materials; IF 38.663

<https://arxiv.org/abs/1904.12949>

1. ***Avalanche delay and dynamic triggering in GaAs-based S-diodes doped with deep level impurity***

Ilya A. Prudaev, Sergey N. Vainshtein, Maksim G. Verkholetov, Vladimir L. Oleinik, and

Viktor V. Kopyev

Wysłany do IEEE Transactions on Electron Devices; IF 2.913

1. ***Self-damping of the relaxation oscillations in miniature pulsed transmitter for sub-nanosecond-precision, long-distance LIDAR***

Sergey N. Vainshtein, Guoyong Duan, Timo Rahkonen, Zachary Taylor, Valery E. Zemlyakov, Vladimir Egorkin, Olga Smolyanskaya, Thomas Skotnicki, Wojciech M. Knap

Wysłany

1. ***Helicity sensitive plasmonic teraherts interferometer***

Y. Matyushkin, S. Danilov, M. Moskotin, V. Belosevich, N. Kaurova, M. Rybin, E. Obraztsova, G. Fedorov, I. Gorbenko, V. Kachorovskii, S. Ganichev

Wysłany do Nano Letters; IF 11.238

<https://arxiv.org/abs/2007.01035>

1. ***Passive Detection and Imaging of Human Body Radiation Using Uncooled Field-Effect Transistor-Based THz Detector***

D. Čibiraitė-Lukenskienė, K. Ikamas, T. Lisauskas, V. Krozer, H. G. Roskos, and A. Lisauskas

Sensors; IF 3.275

<https://www.mdpi.com/1424-8220/20/15/4087/html>

1. ***Effect of ultraviolet light on 1/f noise in carbon nanotube networks***

A. Rehman, S. Smirnov, A. Krajewska; D. But, M. Liszewska, B. Bartosewicz, K. Pavlov, G. Cywiński, D. Lioubtchenko, W. Knap, S. Rumyantsev

Zaakceptowane Materials Research Bulletin; IF 4.019

1. ***Effect of lengths, diameters, and density of silver nanowire layers on terahertz conductivity***

A. Przewłoka, S. Smirnov, I. Nefedova, A. Krajewska, I.S. Nefedov, P.S. Demchenko, D.V. Zykov, V.S. Chebotarev, D. But, K. Stelmaszczyk, A. Lisauskas, J. Oberhammer, M.K. Khodzitsky, W. Knap, D.V. Lioubtchenko

Wysłane do Nanoscale; IF 6.895

1. ***Graphene as a Schottky barrier contact to AlGaN/GaN heterostructures***

M. Dub, P. Sai, A. Przewłoka, A. Krajewska, M. Sakowicz, P. Prystawko, J. Kacperski, I.Pasternak, G. Cywinski, D. But, W. Knap and S. Rumyantsev

Wysłane do Carbon; IF 8.821

**2020 Konferencje**

1. ***Terahertz gain and amplification in current-driven metasurfaces of graphene Dirac plasmons***

 Boubanga-Tombet, S., Yadav, D., Satou, A., Knap, W., Popov, V., et al.

 [Proceedings Volume 11348, Terahertz Photonics;](https://www.spiedigitallibrary.org/conference-proceedings-of-spie/11348.toc) 113480P (2020)

<https://www.spiedigitallibrary.org/conference-proceedings-of-spie/11348/2559504/Terahertz-gain-and-amplification-in-current-driven-metasurfaces-of-graphene/10.1117/12.2559504.short?SSO=1>

1. ***Sub-terahertz detection by fin-shaped GaN/AlGaN transistors***

P. Sai, D. B. But, G. Cywinski, M. Dub, M. Sakowicz, P. Prystawko, S. Rumyantsev, W. Knap

Photonics West San Francisco, California, United States, 1 - 6 February 2020 <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/11279/1127905/Sub-terahertz-detection-by-fin-shaped-GaNAlGaN-transistors/10.1117/12.2547298.short>

1. ***Homodyne Spectroscopy with Broadband Terahertz Power Detector based on 90-nm Silicon CMOS Transistor***

Alvydas Lisauskas

9th International Workshop on Terahertz Technology and Applications, 3 – 4 March, 2020, Germany, Kaiserslautern (poster)

<https://www.itwm.fraunhofer.de/content/dam/itwm/de/documents/VeranstaltungsPDF/2020/2020_03_3-4_Programm_THz-Workshop_MC.pdf>

1. ***The application of superfast GaAs switch for nanosecond pumping of a semiconductor laser***

M.G. Verkholetov, V.V. Kopyev, V.L. Oleinik, I.A. Prudaev, Wojciech Knap, S.N. Vainshtein

Saint Petersburg OPEN 2020 7th International School and Conference on Optoelectronics, Photonics, Engineering and Nanostructures

<https://spbopen.spbau.com/PDF/EN/SPBOPEN2020.pdf>

1. ***Tunneling and Resonant Tunneling Effects in the Metal-Ultrathin Oxide-(n+)Silicon Structures***

P. Wiśniewski, B. Majkusiak, B. Stonio

EUROSOI’ULIS 2020, Caen, Francja

<https://eurosoiulis2020.sciencesconf.org/program>

1. ***Current-driven optical response of plasmonic crystal: From dissipation to amplification***

I.V. Gorbenko, V.Yu. Kachorovskii, W. Knap

International Symposium “Nanophysics & Nanoelectronics”

10-13 March 2020, Nizhny Novgorod, Russia

<http://nanosymp.ru/en/index>

**2019**

1. ***Low-frequency electronic noise in superlattice and random-packed thin films of colloidal quantum dots***Adane Geremew, Caroline Qian, Alex Abelson, Sergey Rumyantsev, Fariborz Kargar, Matt Law, and Alexander A. Balandin
Nanoscale, 2019,11, 8380-8386; IF 6.97

  [https://pubs.rsc.org/en/content/articlelanding/2019/nr/c9nr06899f#!divAbstract](%20https%3A//pubs.rsc.org/en/content/articlelanding/2019/nr/c9nr06899f#!divAbstract)

1. ***Asymmetry of nonlocal dissipation: From drift-diffusion to hydrodynamics***
KS Tikhonov, IV Gornyi, VY Kachorovskii, AD Mirlin, AD
PHYSICAL REVIEW B   Volume: 100   Issue: 20     Article Number: 205430   Published: NOV 27 2019; IF [3.736](https://journals.aps.org/prb/abstract/10.1103/PhysRevB.100.205430)

 <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.100.205430>

1. ***About 250/285 GHz push-push oscillator using differential gate equalisation in digital 65-nm CMOS***
Bassem Fahs, Kefei Wu, Walid Aouimeur, Muhammad Waleed Mansha, Christophe Gaquière, Patrice Gamand, Wojciech Knap, Mona M. Hella

IET MICROWAVES ANTENNAS & PROPAGATION Volume: 13 Issue: 12 Pages: 2073-2080 Published: 2019; IF 2.036

 <https://sci-hub.tw/10.1049/iet-map.2018.5308>

1. ***Suppressed Auger scattering and tunable light emission of Landau-quantized massless Kane electrons***
D. B. But, M. Mittendorff, C. Consejo, F. Teppe, N. N. Mikhailov, S. A. Dvoretskii, C. Faugeras, S. Winnerl, M. Helm, W. Knap, M. Potemski & M. Orlita
Nature Photonics 13, 783–787(2019); IF 31.583

 <https://www.nature.com/articles/s41566-019-0496-1>

1. ***Low frequency noise and trap density in GaN/AlGaN field effect transistors***
P. Sai, J. Jorudas, M. Dub, M. Sakowicz, V. Jakštas, D. B. But, P. Prystawko, G. Cywinski, I. Kašalynas, W. Knap and S. Rumyantsev
Appl. Phys. Lett. 115, 183501 (2019); IF 3.521

 <https://aip.scitation.org/doi/pdf/10.1063/1.5119227?class=pdf>

1. ***3D Fourier imaging based on 2D heterodyne detection at THz frequencies***
Hui Yuan, Daniel Voß, Alvydas Lisauskas, David Mundy, and Hartmut G. Roskos
APL Photon. 4, 106108 (2019; IF 4.383 <https://aip.scitation.org/doi/pdf/10.1063/1.5116553?class=pdf>
2. ***Bias-Voltage Driven Switching of the Charge-Density-Wave and Normal Metallic Phases in 1T-TaS2 Thin-Film Devices***
A. K. Geremew, S. Rumyantsev, F. Kargar, B. Debnath, A. Nosek, M. A. Bloodgood, M. Bockrath, T. T. Salguero, R. K. Lake, and A. A. Balandin
*ACS Nano* 2019 13, 6, 7231-7240; IF 13.903

 <https://pubs.acs.org/doi/10.1021/acsnano.9b02870>

1. ***Low Resistivity and High Breakdown Current Density of 10 nm Diameter van der Waals TaSe3 Nanowires by Chemical Vapor Deposition***
T. A. Empante, A. Martinez, M. Wurch, Y. Zhu, A. K. Geremew, K. Yamaguchi, M. Isarraraz, S. Rumyantsev, E. J. Reed, A. A. Balandin, and L. Bartels
Nano Letters, 2019, 19, 7, 4355-4361; IF 12.279

 <https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.9b00958>

1. ***Single-Walled Carbon Nanotube Layers for Millimeter-Wave Beam Steering***
S. Smirnov, DV. Lioubtchenko D. V., J. Oberhammer.
Nanoscale 2019; 11(31): 14691–97; IF 6.97

 [https://pubs.rsc.org/en/content/articlelanding/2019/NR/C9NR02705J#!divAbstract](https://pubs.rsc.org/en/content/articlelanding/2019/NR/C9NR02705J%23%21divAbstract)

1. ***Proton-irradiation-immune electronics implemented with two-dimensional chargedensity-wave devices***
A. K. Geremew, F. Kargar, E. X. Zhang, S. E. Zhao, E. Aytan, M. A. Bloodgood, T. T. Salguero, S. Rumyantsev, A. Fedoseyev, D. M. Fleetwood and A. A. Balandin
Nanoscale, 2019,11, 8380-8386; IF 6.97

 <https://pubs.rsc.org/en/content/articlelanding/2019/nr/c9nr01614g#!divAbstract>

1. ***Wavelength-dependent photoconductivity of single-walled carbon nanotube layers***
S. Smirnov, I. V. Anoshkin, A. Generalov, D. V. Lioubtchenko, J. Oberhammer
RSC Advances, 2019, 9, 14677; IF 3.049

 <https://pubs.rsc.org/en/content/articlepdf/2019/ra/c9ra01467e>

1. ***A High-Sensitivity AlGaN/GaN HEMT Terahertz Detector With Integrated Broadband Bow-Tie Antenna***M. Bauer, A. Rämer, S. A. Chevtchenko, K. Y. Osipov, D. ̇Cibiraite, S. Pralgauskaite, K. Ikamas, A. Lisauskas, W. Heinrich, V. Krozer, and H. G. Roskos

IEEE TRANSACTIONS ON TERAHERTZ SCIENCE AND TECHNOLOGY; IF 3.03

[https://www.researchgate.net/publication/333713848\_A\_High-](https://www.researchgate.net/publication/333713848_A_High-%20%20%20%20%20%20%20%20%20%20%20sensitivity_AlGaNGaN_HEMT_Terahertz_Detector_With_Integrated_Broadband_Bow-%20%20%20%20%20%20%20%20%20%20%20%20tie_Antenna)

 [sensitivity\_AlGaNGaN\_HEMT\_Terahertz\_Detector\_With\_Integrated\_Broadband\_Bow-](https://www.researchgate.net/publication/333713848_A_High-%20%20%20%20%20%20%20%20%20%20%20sensitivity_AlGaNGaN_HEMT_Terahertz_Detector_With_Integrated_Broadband_Bow-%20%20%20%20%20%20%20%20%20%20%20%20tie_Antenna)

 [tie\_Antenna](https://www.researchgate.net/publication/333713848_A_High-%20%20%20%20%20%20%20%20%20%20%20sensitivity_AlGaNGaN_HEMT_Terahertz_Detector_With_Integrated_Broadband_Bow-%20%20%20%20%20%20%20%20%20%20%20%20tie_Antenna)

1. ***Low-frequency noise spectroscopy of charge-density-wave phase transitions in vertical quasi-2D 1T-TaS2 devices***
R. Salgado, A. Mohammadzadeh, F. Kargar, A. Geremew, C. Huang, M. A. Bloodgood, S. Rumyantsev, T. T. Salguero, and A. A. Balandin

Applied Physics Express 12, 037001 (2019); IF 2.772

 <https://balandingroup.ucr.edu/publications/2019/Vertical-CDW.pdf>

1. ***Time Resolution and Dynamic Range of Field-Effect Transistor–Based Terahertz Detectors***
P. Zagrajek, S. N. Danilov, J. Marczewski, M. Zaborowski, C. Kolacinski, D. Obrebski, P. Kopyt, B. Salski, D. But, W. Knap, S. D. Ganichev
Journal of Infrared, Millimeter, and Terahertz Waves (2019) 40:703–719; IF 1.762

<https://link.springer.com/article/10.1007/s10762-019-00605-0>

1. ***Magneto-transport in inverted HgTe quantum wells***
Ivan Yahniuk, Sergey S. Krishtopenko, Grzegorz Grabecki, Benoit Jouault, Christophe Consejo, Wilfried Desrat, Magdalena Majewicz, Alexander M. Kadykov, Kirill E. Spirin, Vladimir I. Gavrilenko, Nikolay N. Mikhailov, Sergey A. Dvoretsky, Dmytro B. But, Frederic Teppe, Jerzy Wróbel, Grzegorz Cywiński, Sławomir Kret, Tomasz Dietl & Wojciech Knap
Quantum Materials **4**, Article number: 13 (2019)

 <https://www.nature.com/articles/s41535-019-0154-3>

1. ***Experimental Observation of Temperature-Driven Topological Phase Transition in HgTe/CdHgTe Quantum Wells***
Maksim S. Zholudev, Aleksandr M. Kadykov, Mikhail A. Fadeev, Michal Marcinkiewicz, Sandra Ruffenach, Christophe Consejo, Wojciech Knap, Jeremie Torres, Sergey V. Morozov, Vladimir I. Gavrilenko, Nikolay N. Mikhailov, Sergey A. Dvoretskii and Frederic TeppeCondens. Matter 2019, 4, 27; IF 0.59

 <https://www.preprints.org/manuscript/201901.0295/v1>

1. ***AlGaN/GaN field effect transistor with two lateral Schottky barrier gates towards resonant detection in sub-mm range***
P. Sai, D. B. But, I. Yahniuk, M. Grabowski, M. Sakowicz, P. Kruszewski, P. Prystawko, A. Khachapuridze, K. Nowakowski-Szkudlarek, J. Przybytek, P. Wiśniewski, B. Stonio, M. Słowikowski, S. L. Rumyantsev, W. Knap and G. Cywiński
Semiconductor Science and Technology 34 (2019) 024002 IF 2.28

 <https://iopscience.iop.org/article/10.1088/1361-6641/aaf4a7/pdf>

1. ***Features of the Formation of Ohmic Contacts to n+-InN***
P.O. Sai, N.V. Safryuk-Romanenko, D.B. But, G. Cywiński, N.S. Boltovets, P.N. Brunkov, N.V. Jmeric, S.V. Ivanov, V.V. Shynkarenko
Ukrainian Journal of Physics, 64(1), 56 (2019)

 <https://ujp.bitp.kiev.ua/index.php/ujp/article/view/2019292/1317>

1. ***Time Resolution and Power Dependence of Transistor Based Terahertz Detectors*.**

Zagrajek P, Danilov S. N, Marczewski J, Zaborowski M, Kolacinski C, Obrebski D, Kopyt P, But D, Knap W, Ganichev S.

DIEEE Proc. of Int. Conf on Infrared, Millimeter, Terahertz Waves, 2019

<https://www.researchgate.net/publication/333260119_Time_resolution_and_dynamic_range_of_field_effect_transistor_based_terahertz_detectors>

1. ***Pulse mode of operation – A new booster of TEG, improving power up to X2.7 – to better fit IoT requirements***

M. Haras, M. Markiewicz, S. Monfray, and T. Skotnicki

Nano Energy, p. 104204, Oct. 2019

<https://www.sciencedirect.com/science/article/pii/S2211285519309115>

1. ***Symmetry breaking and circular photogalvanic effect in epitaxial CdxHg1-xTe***

S. Hubmann, G. V. Budkin, M. Otteneder, D. But, D. Sacre, I. Yahniuk, K. Diendorfer, V. V. Bel'kov, D. A. Kozlov, N. N. Mikhailov, S. A. Dvoretsky, V. S. Varavin, V. G. Remesnik, S. A. Tarasenko, W. Knap, S. D. Ganichev

Rev. Applied, 11, 7 (2019)

<https://arxiv.org/abs/1911.01936>

1. ***Meyer-Neldel rule in the conductivity of phase separated manganites***

Przybytek, Jacek; Markovich, Vladimir; Jung, Grzegorz

Journal of Electrical Engineering-Elektrotechnicky Casopis 70 (7), 65-70 (2019); IF 0.636

<https://content.sciendo.com/view/journals/jee/70/7/article-p65.xml?rskey=dIFdFX&result=1>

1. ***Puzzle of non-surface related 2D electron gas in n-InN epitaxial samples***

Baj, M; Dmowski, LH; Kwiatkowski, A; Przybytek, J; Wang, XQ; Koblmuller, G; Gallinat, CS; Speck, JS

[Journal of Applied Physics 126 (4), 045705 (2019); IF 2.328](https://aip.scitation.org/doi/abs/10.1063/1.5095523?journalCode=jap)

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1. ***Noise Features of Metastable Resistivity States in La0.86Ca0.14MnO3 Manganite Single Crystal***

Przybytek, Jacek; Jung, Grzegorz

Fluctuation and Noise Letters 18 (2), 1940011 (2019); IF 0.913

<https://www.worldscientific.com/doi/pdf/10.1142/S021947751940011X>

1. ***Experimental Observation of Temperature-Driven Topological Phase Transition in HgTe/CdHgTe Quantum Wells***

Maksim S. Zholudev, Aleksandr M. Kadykov, Mikhail A. Fadeev, Michal Marcinkiewicz, Sandra Ruffenach, Christophe Consejo, Wojciech Knap, Jeremie Torres, Sergey V. Morozov, Vladimir I. Gavrilenko, Nikolay N. Mikhailov, Sergey A. Dvoretskii and Frederic Teppe

Condensed Matter vol. 4(1) pag. 27

<https://europepmc.org/article/ppr/ppr70321>

1. ***Semiconductor-metal-grating slow-wave amplifier for sub-THz range***

P. Makhalov, D.V. Lioubtchenko, J. Oberhammer

IEEE Transactions on Electron Devices, 2019, pp.1-6; IF 2.913

<https://ieeexplore.ieee.org/document/8821551>

1. ***Planar Lens–Based Ultra-Wideband Dielectric Rod Waveguide Antenna for Tunable THz and Sub-THz Photomixer Sources***

A. Rivera-Lavado, L.-E. García-Muñoz, D. Lioubtchenko, S. Preu, K.A. Abdalmalak, G. Santamaría-Botello, D. Segovia-Vargas, A.V Räisänen

Journal of Infrared, Millimeter, and Terahertz Waves, vol. 40, is 8, pp. 838-855; IF 1.765

<https://link.springer.com/article/10.1007/s10762-019-00612-1>

**2019 Konferencje**

1. ***Reduction of the Low Frequency Noise and Negative Photocodnuctivity in HgTe Quantum Wells***Sergey Rumyantsev, Ivan Yahniuk, Dmytro B. But, Grzegorz Cywinski, Bartłomiej Grzywacz, Nikolay N. Mikhailov, Sergey A. Dvoretsky, Jerzy Łusakowski, Wojciech Knap
ICNF 2019: 25TH INTERNATIONAL CONFERENCE ON NOISE AND FLUCTUATIONS, Switzerland: Neuchâtel, June 17-21, 2019. (oral presentation)

<https://easychair.org/smart-program/ICNF2019/>

1. ***Low-Frequency Noise of Magnons***Sergey Rumyantsev, Michael Balinskiy, Fariborz Kargar, Alexander Khitun and Alexander A. Balandin
ICNF 2019: 25TH INTERNATIONAL CONFERENCE ON NOISE AND FLUCTUATIONS, Switzerland: Neuchâtel, June 17-21, 2019. (oral presentation)

<https://easychair.org/smart-program/ICNF2019/>

1. ***Low-Frequency Noise in Low-Dimensional van der Waals Materials***A.A.Balandin, S. Rumyantsev
ICNF 2019: 25TH INTERNATIONAL CONFERENCE ON NOISE AND FLUCTUATIONS, Switzerland: Neuchâtel, June 17-21, 2019. (keynote presentation)

<https://icnf2019.epfl.ch/technical-program/>

1. ***Negative Photoconductivity and low frequency noise in HgTe Quantum Wells***

S. Rumyantsev, I. Yahniuk, D. B. But, G. Cywinski, N. N. Mikhailov, S. A. Dvoretsky, J. Łusakowski, W. Knap

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland (oral presentation)

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Landau levels terahertzemission from HgCdTe bulk films***

D.B.But, C.Consejo, S.S.Krishtopenko, N.Dyakonova, N.N.Michailov, S.A.Dvoretskii, V.I. Gavrilenko, F. Teppe, W. Knap

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***THz Detectors Based on GaN/AlGaN LateralSchottky Barrier Diodes***

G.Cywiński, P. Sai, M. Dub, M. Sakowicz, D. B. But, P. Prystawko, W. Knap, S. Rumyantsev

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland (oral presentation)

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Noise Characterization of GaN/AlGaN HighElectron Mobility Transistors***

P.Sai, J. Jorudas, M. Dub, M. Sakowicz, D. B. But, P. Prystawko, G. Cywinski, I. Kašalynas,

W. Knap, S. Rumyantsev

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland (oral presentation)

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Reconfigurable Antennas based on S-PIN diodes***

Y.Yashchyshyn

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Active THz devices***

A. Lisauskas

CENTERA THz Days: French-Polish Science & Technology Meeting

October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Overview on Spin Photogalvanics Induced by Terahertz Radiation***

S.D. Ganichev

CENTERA THz Days: Annual Workshop of International Research Project (IRP) – TERAMIR October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Current-driven optical response of plasmonic crystal: From dissipation to amplification***

I.V. Gorbenko, V.Yu. Kachorovskii, W. Knap

CENTERA THz Days: Annual Workshop of International Research Project (IRP) – TERAMIR October 17th-19th, 2019, Warsaw, Poland (invited)

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***High-performance THz detectors in CMOS technologies***

K.Ikamas, D. Čibiraitė, A. Solovjovas, D. But, A. Lisauskas

CENTERA THz Days: Annual Workshop of International Research Project (IRP) – TERAMIR October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***AlGaN/GaN Heterostructures for Plasma Wave Detection and Emission in THz Regime*** M.Sakowicz, P. Sai, D. B. But, G. Cywiński, M. Dub, I. Kasalynas, P. Prystawko, S.Rumyantsev, W. Knap

CENTERA THz Days: Annual Workshop of International Research Project (IRP) – TERAMIR October 15th-16th, 2019, Warsaw, Poland (oral presentation)

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Topological phase transition in HgTe quantum wells induced by hydrostatic pressure***

Yahniuk, S. S. Krishtopenko, M. Majewicz, T. Dietl, S. A. Dvoretsky, N. N. Mikhailov, G.Cywiński, V. I. Gavrilenko, G. Grabecki, J. Wróbel, A. Kazakov, F. Teppe, J. Przybytek, W. Knap

CENTERA THz Days: Annual Workshop of International Research Project (IRP) – TERAMIR October 15th-16th, 2019, Warsaw, Poland

<http://pirbinstytut.pl/prezentacje/centera/booklet_2019-10-18_11;56.pdf>

1. ***Thin Carbon Nanotube Layers for Terahertz Wave Applications***

Dmitri Lioubtchenko, Serguei Smirnov, Mikhail Khodzitsky, Joachim Oberhammer

20th International Conference on the Science and Application of Nanotubes and Low-Dimensional Materials

21-26 July 2019, Würzburg, Germany

<https://www2.uni-wuerzburg.de/NT19/index.php/NT19_main/program_download>

1. ***Electrical nonlinearities in field effect transistors and their applications for terahertz autocorrelation measurements***

Alvydas Lisauskas, Kestutis Ikamas, Ignas Nevinskas, Arunas Krotkus, Hartmut G. Roskos

SPIE Optics & Photonics

13–15 August 2019, San Diego, California, USA (Invited Paper)

<https://spie.org/Documents/ConferencesExhibitions/OP19-Adv-L.pdf>

1. ***THz Cyclotron Emission from HgCdTe Alloys with Dirac-like Band Structure***

D. B. But, C. Consejo, N. Dyakonova, S. Krishtopenko, V. I. Gavrilenko, N. N. Michailov, F. Teppe W. Knap

International Workshop of FIR-LAB network

July 6 – 7, 2019 Nizhny Novgorod, Russia (Invited Paper)

<http://fir-lab2019.laser.ru/?page_id=38>

1. ***THz plasma oscillations in field effect structures: from first discoveries to nowadays applications***

W. Knap

8th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies & GDR-I FIR-LAB Workshop

July 8 – 11, 2019 Nizhny Novgorod, Russia (Plenary)

<http://fir-lab2019.laser.ru/?page_id=38>

1. ***High Resolution THz Spectrometer Based on Semiconductor Devices for Medical Diagnostics***

V. L. Vaks, M. B. Chernyaeva, E. G. Domracheva, S. I. Pripolzin, A. A. Yablokov, W. Knap

8th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies & GDR-I FIR-LAB Workshop

July 8 – 11, 2019 Nizhny Novgorod, Russia

<http://fir-lab2019.laser.ru/?page_id=38>

1. ***Promieniowanie z zakresu terahertzowego w zastosowaniach przemysłowych, medycznych, bezpieczeństwa i obronności. Promieniowanie z zakresu terahertzowego w zastosowaniach przemysłowych, medycznych, bezpieczeństwa i obronności***

Tomasz Skotnicki, Wojciech Knap

V Konferencja Optoelekrtroniki

14 Nov. 2019, Jachranka, Poland

<https://optoelektroniczna.pl/wp-content/uploads/2019/11/Program-V-Konferencji-Optoelektronicznej.pdf>

1. ***Terahertz Technologies and Applications***

Thomas Skotnicki, Wojciech Knap,

26 th International Conference MIXED DESIGN OF INTEGRATED SYSTEMS and CIRCUITS, MIXDES 27 – 29 June 2019, Rzeszów, Poland

<https://www.mixdes.org/downloads/programme2019.pdf>

1. ***Electrical and Noise Characteristics of Fin-Shaped GaN/lGaN Devices for High Frequency Operation***

P. Sai, D. But, M. Dub, M. Sakowicz, B. Grzywacz, P. Prystawko, G. Cywiński, W. Knap, S. Rumyantsev

49th European Solid-State Device research Conference ESSDERC 2019

Sept. 23-26, Krakow, Poland (oral presentation)

<https://esscirc-essderc2019.org/wp-content/uploads/2019/09/DERC2019-GuideBook-Ver3.pdf>

1. ***Circuit-Based Hydrodynamic Modeling of AlGaN/GaN HEMTs***

F. Ludwig, M. Bauer, A. Lisauskas, and H. G. Roskos

49th European Solid-State Device research Conference ESSDERC 2019

Sept. 23-26, Krakow, Poland

<https://esscirc-essderc2019.org/wp-content/uploads/2019/09/DERC2019-GuideBook-Ver3.pdf>

1. ***Dielectric rod antenna array for photonic-based sub-terahertz beamforming***

S. Smirnov, A. Morales, C. Okonkwo, I. Tafur Monroy, D.V Lioubtchenko, J. Oberhammer

44th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), pp 1-2, 1 – 6 Sept. 2019

<http://www.irmmw-thz2019.org/index.php/technical-program/2-uncategorised/55-sessions-wednesday>

1. ***Photonic-based beamforming system for sub-THz wireless communications***

A. Morales, S. Smirnov, D.V. Lioubtchenko, J. Oberhammer, C. Okonkwo, I. Tafur Monroy

2019 European Microwave Conference in Central Europe (EuMCE), pp. 253-256

13-15 May 2019, Prague, Czech Republic

<https://research.tue.nl/en/publications/photonic-based-beamforming-system-for-sub-thz-wireless-communicat>

1. ***Chemically-functionalized single-walled carbon nanotubes for terahertz applications***

Dmitry Lioubtchenko

30th International Conference on Diamond and Carbon Materials

8 – 12 Sept. 2019, Seville, Spain

<https://www.materialstoday.com/carbon/events/30th-international-conference-2019/>

1. ***Tunable Carbon Nanomaterials for THz Beam Steering Applications***

Dmitry Lioubtchenko

Antenna Design and Measurement International Conference 2019

16 – 18 October, 2019, St. Petersburg, Russia

 <http://antennaconf.com/invinted>

**2018**

1. ***Unique features of the generation–recombination noise in quasi-one-dimensional van der Waals nanoribbons***
Adane K. Geremew, Sergey Rumyantsev, Matthew A. Bloodgood, Tina T. Salguero and Alexander A. Balandin
[Nanoscale, 2018, **10**, 19749; IF 7.233](https://pubs.rsc.org/en/content/articlelanding/2018/nr/c8nr06984k#!divAbstract)

 [https://pubs.rsc.org/en/content/articlelanding/2018/nr/c8nr06984k#!divAbstract](https://pubs.rsc.org/en/content/articlelanding/2018/nr/c8nr06984k%23%21divAbstract)

1. ***Magnetoconductivity and Terahertz Response of a HgCdTe Epitaxial Layer***Dmitriy Yavorskiy, Krzysztof Karpierz, Michał Baj, Małgorzata M. Bąk, Nikolai N. Mikhailov, Sergey A. Dvoretsky, Vladimir I. Gavrilenko, Wojciech Knap, Frederic Teppe and Jerzy ŁusakowskiSensors 2018, 18, 4341; doi:10.3390/s18124341; IF=2.475

  [https://www.mdpi.com/1424-8220/18/12/4341](%20https%3A//www.mdpi.com/1424-8220/18/12/4341)

1. ***Thermoelectricity for IoT–A review***

Maciej Haras, Thomas Skotnicki

Nano Energy Volume 54, December 2018, Pages 461-476

<https://www.sciencedirect.com/science/article/abs/pii/S2211285518307286>

**2018 Konferencje**

1. ***Emerging Terahertz Technologies for Security, Quality Control, Vision and Medical Applications***

Thomas Skotnicki, Wojciech Knap

International Conference on Solid-State and Integrated Circuit Technology ICSICT’2018

Oct. 31 – Nov. 3, 2018 Huangdao,Qingdao, China. (keynote presentation)

<https://kobaweb.ei.st.gunma-u.ac.jp/news/pdf/2018/ICSICT2018sun-report.pdf>

1. ***Terahertz Light Amplification by Current-Driven Plasmon Instabilities in Graphene***

Stephane Boubanga-Tombet, Deepika Yadav, Wojciech Knap, Vyacheslav V. Popov, and Taichii Otsuji

CLEO: Science and Innovations 2018 13–18 May 2018 San Jose, California, United States

<https://www.osapublishing.org/abstract.cfm?URI=CLEO_SI-2018-SW4D.4>

1. ***Graphene-Channel-Transistor Terahertz Amplifier***

Stephane Boubanga-Tombet, Deepika Yadav, Wojciech Knap, Vyacheslav V. Popov and Taiichi Otsuji

76th Device Research Conference June 24–27, 2018, University of California, Santa Barbara

<https://www.researchgate.net/publication/327520437_Graphene-Channel-Transistor_Terahertz_Amplifier>