

### **Analysis of barrier inhomogeneities of P-type Al/4H-SiC Schottky barrier diodes**

**Ziko, Mehadi Hasan; Koel, Ants; Rang, Toomas; Toompuu, Jana** Silicon Carbide and Related Materials 2019 : Selected peer-reviewed papers from International Conference on Silicon Carbide and Related Materials 2019 (ICSCRM 2019), September 29 - October 4, 2019, Kyoto, Japan Materials science forum 2020 / p. 960-972 <https://doi.org/10.4028/www.scientific.net/MSF.1004.960>  
[Conference proceedings at Scopus](#) [Article at Scopus](#)

### **Analysis of deep level centers in GaAs pin-diode structures**

**Korolkov, Oleg; Toompuu, Jana; Rang, Toomas** Elektronika ir elektrotehnika = Electronics and electrical engineering 2013 / [4 p. ] : ill <https://doi.org/10.5755/j01.eee.19.10.5903> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Analysis of deep level spectrum in GaAs p+-p-i-n-n+ structures**

**Toompuu, Jana; Sleptsuk, Natalja; Korolkov, Oleg; Rang, Toomas** Materials characterization VII 2015 / p. 283-294 : ill

### **Change in the parameters of electron-irradiated 4H-SiC Schottky diodes as a function of the time during low-temperature isothermal annealing**

**Korolkov, Oleg; Kozlovski, Vitali V.; Lebedev, Alexander A.; Toompuu, Jana; Sleptsuk, Natalja; Rang, Toomas** Silicon Carbide and Related Materials 2018 : 12th European Conference on Silicon Carbide and Related Materials (ECSCRM 2018) : Selected, peer reviewed papers from the European Conference on Silicon Carbide and Related Materials (ECSCRM 2018), September 2-6, 2018, Birmingham, UK 2019 / p. 734-737 <https://doi.org/10.4028/www.scientific.net/MSF.963.734> [Conference proceeding at Scopus](#)  
[Article at Scopus](#)

### **Comparative characteristics of diffusion-welded high-voltage stacks and connected in series Schottky diodes**

**Sleptsuk, Natalja; Korolkov, Oleg; Land, Raul; Toompuu, Jana; Annus, Paul; Rang, Toomas** BEC 2016 : 2016 15th Biennial Baltic Electronics Conference : proceedings of the 15th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 3-5, 2016, Tallinn, Estonia 2016 / p. 39-42 : ill [http://www.ester.ee/record=b2150914\\*est](http://www.ester.ee/record=b2150914*est)

### **Comparative investigation of the graphene-on-silicon carbide and CVD graphene as a basis for biosensor application**

**Sleptsuk, Natalja; Lebedev, Alexander A.; Eliseyev, Ilya; Korolkov, Oleg; Toompuu, Jana; Land, Raul; Mikli, Valdek; Zubov, Alexander; Rang, Toomas** Modern Materials and Manufacturing 2019 : 12th International DAAAM Baltic Conference and 27th International Baltic Conference BALTMATRIB 2019. Selected, peer reviewed papers from the conference Modern Materials and Manufacturing 2019 (MMM 2019), April 24-26, 2019, Tallinn, Estonia 2019 / p. 185-190 : ill [https://www.ester.ee/record=b5235278\\*est](https://www.ester.ee/record=b5235278*est)  
<https://www.scientific.net/KEM.799.185> <https://doi.org/10.4028/www.scientific.net/KEM.799.185> [Conference proceeding at Scopus](#) [Article at Scopus](#)

### **Comparative results of low temperature annealing of lightly doped n-layers of silicon carbide irradiated by protons and electrons**

**Kozlovski, Vitali V.; Korolkov, Oleg; Lebedev, Alexander A.; Toompuu, Jana; Sleptsuk, Natalja** Silicon Carbide and Related Materials 2019 : 18th International Conference on Silicon Carbide and Related Materials 2019 (ICSCRM 2019), Kyoto, Japan, September 29 - October 4, 2019 2020 / p. 231-236 <https://doi.org/10.4028/www.scientific.net/MSF.1004.231> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

### **Comparison of individual SiC JBS chips and JBS stacks connected in series by diffusion welding**

**Sleptsuk, Natalja; Korolkov, Oleg; Toompuu, Jana; Rang, Toomas** BEC 2010 : 2010 12th Biennial Baltic Electronics Conference : proceedings of the 12th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 4-6, 2010, Tallinn, Estonia 2010 / p. 81-84 : ill

### **Degradation of 600-V 4H-SiC Schottky diodes under irradiation with 0.9 MeV electrons**

**Lebedev, Alexander A.; Davidovskaja, Klavdia; Kozlovski, Vitali V.; Korolkov, Oleg; Sleptsuk, Natalja; Toompuu, Jana** Silicon Carbide and Related Materials 2016 : selected, peer reviewed papers from the 11th European Conference on Silicon Carbide and Related Materials 2016 (ECSCRM 2016), September 25-29, 2016, Halkidiki, Greece 2017 / p. 447-450 : ill  
<https://doi.org/10.4028/www.scientific.net/MSF.897.447> [Conference proceedings at Scopus](#) [Article at Scopus](#)

### **Degradation of 600-V 4H-SiC Schottky diodes under irradiation with 0.9 MeV electrons**

**Lebedev, Alexander A.; Davydovskaja, K. S.; Kozlovski, Vitali V.; Korolkov, Oleg; Sleptsuk, Natalja; Toompuu, Jana** 11th European Conference on Silicon Carbide and Related Materials : September 25-29, 2016, Porto Carras Grand Resort, Halkidiki, Greece : [poster session] 2016 / p. 49

### **Dependence of the carrier removal rate in 4H-SiC PN structures on irradiation temperature**

**Lebedev, Alexander A.; Davydovskaya, Klavdia S.; Kozlovski, Vitali V.; Korolkov, Oleg; Sleptsuk, Natalja; Toompuu, Jana** Silicon Carbide and Related Materials 2018 : 12th European Conference on Silicon Carbide and Related Materials (ECSCRM 2018) : Selected, peer reviewed papers from the European Conference on Silicon Carbide and Related Materials (ECSCRM 2018), September 2-6, 2018, Birmingham, UK 2019 / p. 730-733 <https://doi.org/10.4028/www.scientific.net/MSF.963.730> [Conference proceeding at Scopus](#) [Article at Scopus](#)

### **Diffusion welded contacts and related art applied to semiconductor materials**

**Korolkov, Oleg; Sleptsuk, Natalja; Toompuu, Jana; Rang, Toomas** Elektronika ir elektrotehnika = Electronics and electrical engineering 2011 / p. 67-70 : ill <https://eejournal.ktu.lt/index.php/elt/article/view/359>

### **DLTS measurements on 4H-SiC JBS-diodes with boron implanted local p-n junctions**

Ivanov, Pavel; **Korolkov, Oleg**; Samsonova, Tatyana; **Sleptšuk, Natalja**; Potapov, Alexander; **Toompuu, Jana**; **Rang, Toomas** Materials science forum 2011 / p. 409-412 [https://www.researchgate.net/publication/272046403\\_DLTS\\_measurements\\_on\\_4H-SiC\\_JBS-diodes\\_with\\_boron\\_implanted\\_local\\_p-n\\_junctions](https://www.researchgate.net/publication/272046403_DLTS_measurements_on_4H-SiC_JBS-diodes_with_boron_implanted_local_p-n_junctions)

### **Experimental study of surface distortions in silicon carbide caused by diffusion welding**

Mizsei, Janos; **Korolkov, Oleg**; **Sleptšuk, Natalja**; **Toompuu, Jana**; **Rang, Toomas** BEC 2012 : 2012 13th Biennial Baltic Electronics Conference : proceedings of the 13th Biennial Baltic Electronics Conference : October 3-5, 2012, Tallinn, Estonia 2012 / p. 53-56 : ill

### **GaAs based diffusion welded high voltage diode stacks [Electronic resource]**

**Toompuu, Jana**; **Korolkov, Oleg**; **Sleptšuk, Natalja**; **Voitovitš, Viktor**; **Rang, Toomas** IEEE International Conference on Semiconductor Electronics CD-ROM Proceedings 2010 / [4] p <https://ieeexplore.ieee.org/document/5549505>

### **Influence of the proton irradiation temperature on the characteristics of high-power high-voltage silicon carbide schottky diodes**

Kozlovski, Vitali V.; **Korolkov, Oleg**; Davydovskaya, Klavdia S.; Lebedev, Alexander A.; Levinshtein, Michael E.; **Sleptšuk, Natalja**; Strel'Chuk, Anatolii M.; **Toompuu, Jana** Technical Physics Letter 2020 / p. 287 - 289 <https://doi.org/10.1134/S1063785020030244>  
[Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Investigation of additional states in the silicon carbide surface after diffusion welding**

Mizsei, Janos; **Korolkov, Oleg**; **Sleptšuk, Natalja**; **Toompuu, Jana**; **Rang, Toomas** ICSCRM2011 : Cleveland Ohio, USA, September 11-16, 2011 : abstracts 2011 / p. 356 : ill  
[https://www.researchgate.net/publication/269377410\\_Investigation\\_of\\_Additional\\_States\\_in\\_the\\_Silicon\\_Carbide\\_Surface\\_after\\_Diffusion\\_Welding](https://www.researchgate.net/publication/269377410_Investigation_of_Additional_States_in_the_Silicon_Carbide_Surface_after_Diffusion_Welding)

### **Investigation of deep level centers in i- and n-layers of GaAs pin-diodes**

**Toompuu, Jana**; **Korolkov, Oleg**; **Sleptšuk, Natalja**; **Rang, Toomas** BEC 2014 : 2014 14th Biennial Baltic Electronics Conference : proceedings of the 14th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 6-8, 2014, Tallinn, Estonia 2014 / p. 25-28 : ill

### **Investigation of p-i-n GaAs structures by DLTS method**

**Toompuu, Jana**; **Korolkov, Oleg**; **Sleptšuk, Natalja**; **Rang, Toomas** Elektronika ir elektrotehnika = Electronics and electrical engineering 2010 / 4, p. 51-54 : ill [https://www.researchgate.net/publication/267372152\\_Investigation\\_of\\_p-i-n\\_GaAs\\_structures\\_by\\_DLTS\\_method](https://www.researchgate.net/publication/267372152_Investigation_of_p-i-n_GaAs_structures_by_DLTS_method)

### **Investigation of P-i-n GaAs structures by DLTS method : the deep level transient spectroscopy in application to GaAs p-i-n structures for identification of deep levels**

**Toompuu, Jana** 2010 <https://www.amazon.com/Investigation-p-i-n-GaAs-structures-method/dp/383839223X>

### **Investigation of the graphene-on-silicon-carbide and CVD graphene as a basis for bioimpedance sensor applications : poster**

**Sleptšuk, Natalja**; Land, Raul; **Toompuu, Jana**; **Lebedev, Alexander A.**; Davydov, Valery; Eliseyev, Ilya; Kalinina, Evgenia; **Korolkov, Oleg**; **Rang, Toomas** ePosters 2018 / 1 p.: ill <https://cdn.technologynetworks.com/ep/pdfs/natalja-sleptuk-a-raul-land-a-jana-toompuu-a-alexander-lebedev-b-valery-davydov-b-ilya-eliseyev-b.pdf>

### **Low-temperature annealing of lightly doped n-4H-SiC layers after irradiation with fast electrons**

**Korolkov, Oleg**; Kozlovski, Vitali V.; Lebedev, Alexander A.; **Sleptšuk, Natalja**; **Toompuu, Jana**; **Rang, Toomas** Semiconductors 2019 / p. 975-978 <https://doi.org/10.1134/S1063782619070133> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

### **Method of samples preparation intended for research of deep centers in i-, n-, and p-layers of GaAs p<sup>+</sup>-pin-n<sup>+</sup> structures and result of analysis**

**Toompuu, Jana**; **Sleptšuk, Natalja**; **Korolkov, Oleg**; **Rang, Toomas** BEC 2016 : 2016 15th Biennial Baltic Electronics Conference : proceedings of the 15th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 3-5, 2016, Tallinn, Estonia 2016 / p. 35-38 : ill [http://www.ester.ee/record=b2150914\\*est](http://www.ester.ee/record=b2150914*est)

### **Numerical simulations for reverse recovery process investigations of LPE GaAs power diodes**

**Koel, Ants**; **Rang, Toomas**; **Voitovitš, Viktor**; **Toompuu, Jana** BEC 2012 : 2012 13th Biennial Baltic Electronics Conference : proceedings of the 13th Biennial Baltic Electronics Conference : October 3-5, 2012, Tallinn, Estonia 2012 / p. 39-42 : ill

### **SiC JBS diode symmetrical voltage doubler represented as the diffusion-welded stack**

**Korolkov, Oleg**; Land, Raul; **Toompuu, Jana**; **Sleptšuk, Natalja**; **Rang, Toomas** Silicon carbide and related materials 2017 : ICSCRM 2017 : selected, peer reviewed papers from the 2017 International Conference on Silicon Carbide and related materials, September 17-22, 2017, Washington, DC, USA 2018 / p. 862-865 : ill <https://doi.org/10.4028/www.scientific.net/MSF.924.862> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

**SiC schottky diode rectifier bridge represented as the diffusion-welded stack**

**Korolkov, Oleg;** Kozlovski, Vitali V.; Lebedev, Alexander A.; **Land, Raul; Sleptšuk, Natalja; Toompuu, Jana; Rang, Toomas** Silicon Carbide and Related Materials 2016 : selected, peer reviewed papers from the 11th European Conference on Silicon Carbide and Related Materials 2016 (ECSCRM 2016), September 25-29, 2016, Halkidiki, Greece 2017 / p. 697-700 : ill  
<https://doi.org/10.4028/www.scientific.net/MSF.897.697> [Conference proceedings at Scopus](#) [Article at Scopus](#)

**SiC schottky diode rectifier bridge represented as the diffusion-welded stack**

**Korolkov, Oleg; Land, Raul; Sleptšuk, Natalja; Toompuu, Jana; Rang, Toomas** 11th European Conference on Silicon Carbide and Related Materials : September 25-29, 2016, Porto Carras Grand Resort, Halkidiki, Greece : [poster session] 2016 / p. 42

**Study of surface defects in 4H-SiC Schottky diodes using a scanning Kelvin probe**

Mizsei, Janos; **Korolkov, Oleg; Toompuu, Jana; Rang, Toomas** The 9th European Conference on Silicon Carbide and Related Materials : abstract book : St. Petersburg Russia, 2-6 September, 2012 2012 / 2 p. : ill

**Study of surface defects in 4H-SiC Schottky diodes using a scanning Kelvin probe**

Mizsei, Janos; **Korolkov, Oleg; Toompuu, Jana; Mikli, Valdek; Rang, Toomas** Silicon Carbide and Related Materials 2012 : selected peer reviewed papers from the 9th European Conference on Silicon Carbide and Related Materials (ECSCRM 2012), September 2-6, 2012, St. Petersburg, Russian Federation 2013 / p. 677-680 : ill <https://doi.org/10.4028/www.scientific.net/MSF.740-742.677> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Conference Proceedings at WOS](#) [Article at WOS](#)

**The dependence of reverse recovery time on barrier capacitance and series on-resistance in Schottky diodes**

**Veher, Oleksandr; Sleptšuk, Natalja; Toompuu, Jana; Korolkov, Oleg; Rang, Toomas** Materials and contact characterisation VIII 2017 / p. 15-22 : ill <https://doi.org/10.2495/MC170021> [Conference proceedings at Scopus](#) [Article at Scopus](#)

**The measurement and tuning of SiC diode voltage doubler represented as diffusion-welded stack [Online resource]**

**Toompuu, Jana; Sleptšuk, Natalja; Land, Raul; Korolkov, Oleg; Rang, Toomas** BEC 2018 : 2018 16th Biennial Baltic Electronics Conference (BEC) : proceedings of the 16th Biennial Baltic Electronics Conference, October 8-10, 2018 2018 / 4 p.: ill  
<https://doi.org/10.1109/BEC.2018.8600963>

**The specificity of solid-phase interaction of aluminium with silicon carbide in the manufacture of diffusion-welded contacts to semiconductor devices**

**Sleptšuk, Natalja; Korolkov, Oleg; Toompuu, Jana; Rang, Toomas; Mikli, Valdek** Elektronika ir elektrotechnika = Electronics and electrical engineering 2012 / p. 45-48 : ill <https://eejournal.ktu.lt/index.php/elt/article/view/2610>

**Низкотемпературный отжиг слаболегированных слоев n-4H-SiC после облучения быстрыми электронами**

**Korolkov, Oleg;** Kozlovski, Vitali; Lebedev, Alexander; **Sleptšuk, Natalja; Toompuu, Jana; Rang, Toomas** Физика и техника полупроводников 2019 / с. 991-994 <https://doi.org/10.21883/FTP.2019.07.47879.9089>