

Ambient temperature influence on current suppressing effect caused by self-heating phenomenon at 6H-SiC Schottky interfaces

Kurel, Raido; Rang, Toomas BEC'98 : the 6th Biennial Conference on Electronics and Microsystems Technology, October 7-9, 1998, Tallinn, Estonia : proceedings 1998 / p. 253-254 : ill

An analysis of critical parameters of SiC JBS structures

Kurel, Raido; Rang, Toomas; Poirier, Laurent Proceedings of the Estonian Academy of Sciences. Engineering 2006 / 3-2, p. 284-299 : ill

An experimental study of diffusion welded contacts to p-type silicon carbide

Korolkov, Oleg Telekommunikatsioon 2002 : IX rahvusvahelise telekommunikatsioonipäeva materjalid 2002 / lk. 21-23 : ill

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 the basic Schottky parameters for diffusion-welded aluminium contacts to p- and n-type SiC

Korolkov, Oleg; Ljutov, Jevgeni; Kuznetsova, Natalja; Ruut, Jana; **Rang, Toomas** BEC 2004 : proceedings of the 9th Biennial Baltic Electronics Conference : October 3-6, 2004, Tallinn, Estonia 2004 / p. 51-53 : ill

The basic Schottky parameters for combined diffusion welded and sputter metal contacts

Kuznetsova, Natalja; Korolkov, Oleg; Rang, Toomas; Pikkov, Mihhail BEC 2006 : 2006 International Baltic Electronics Conference : Tallinn University of Technology, October 2-4, 2006, Tallinn, Estonia : proceedings of the 10th Biennial Baltic Electronics Conference 2006 / p. 47-50 : 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](#)

Characterization of Interfaces Between the Metal Film and Silicon Carbide Semiconductor = Metallkontakti ja ränikarbiidi vahelise liidespinna karakteriseerimine

Ziko, Mehadi Hasan 2021 <https://digikogu.taltech.ee/et/Item/34be534c-63e8-4013-b271-eaf1a7cb22e7>
https://www.ester.ee/record=b5471196*est <https://doi.org/10.23658/taltech.52/2021>

Characterization of silicon carbide (SiC) and graphene-based novel semiconductor devices = Ränikarbiidil (SiC) ja grafeenil põhinevate uudsete pooljuhtstruktuuride karakteriseerimine

Rashid, Muhammad Haroon 2021 https://www.ester.ee/record=b5397240*est <https://digikogu.taltech.ee/et/Item/a64fd50e-125c-49ad-b0a6-6ad2e01b8bfa> <https://doi.org/10.23658/taltech.6/2021>

Charge carrier transport in SiC Schottky interfaces : shape factor approach

Kurel, Raido; Rang, Toomas; Rang, Galina; Kasemaa, Argo BEC 2008 : 2008 International Biennial Baltic Electronics Conference : proceedings of the 11th Biennial Baltic Electronics Conference : Tallinn University of Technology : October 6-8, 2008, Tallinn, Estonia 2008 / p. 87-90 : ill

Clamp mode package diffusion welded power SiC Schottky diodes

Korolkov, Oleg; Kuznetsova, Natalja; Rang, Toomas BEC 2006 : 2006 International Baltic Electronics Conference : Tallinn University of Technology, October 2-4, 2006, Tallinn, Estonia : proceedings of the 10th Biennial Baltic Electronics Conference 2006 / p. 55-58 : ill

Combustion synthesis of nanoscale boron and silicon carbides

Zakaryan, Marieta; Amirkhanyan, Narine; Kirakosyan, Hasmik; Zurnachyan, Alina; Aydinyan, Sofiya CIMTEC 2022 : 15th International Ceramics Congress (June 20-24) CIMTEC 2022 : 9th Forum on New Materials (June 25-29) 2022 http://2022.cimtec-congress.org/focused-session-ca-11_1

Combustion synthesis of silicon carbide by magnesio-carbothermic reduction of amorphous and crystalline silica

Kirakosyan, Hasmik; Nazaretyan, Khachik; Beglaryan, Hayk; Ivanov, Roman; Hussainova, Irina; Aydinyan, Sofiya Proceedings of the Estonian Academy of Sciences 2025 / p. 260-265 <https://doi.org/10.3176/proc.2025.2.31>

Comparative characteristics of 6H- and 4H-SiC surfaces in diffusion welding

Korolkov, Oleg; Rang, Toomas Proceedings of the Estonian Academy of Sciences. Engineering 2001 / 4, p. 347-353 : ill

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

Sleptšuk, 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

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

Sleptšuk, 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

Comparison of Schottky parameters for diffusion-welded and sputter contacts to silicon carbide

Kuznetsova, Natalja Info- ja kommunikatsioonitehnoloogia doktorikooli IKTDK teise aastakonverentsi artiklite kogumik : 11.-12. mai 2007, Viinistu kunstimuuseum 2007 / lk. 162-165 : ill

Comparison of Si and SiC devices surge current capability by means of numerical simulations

Velme, Enn; Udal, Andres BEC'96 : the 5th Biennial Baltic Electronics Conference, October 7-11, 1996, Tallinn, Estonia : proceedings 1996 / p. 77-80: ill

Comparison of the dynamic behaviour of complementary 6H- and 4H-SiC Schottky structures using numerical simulation

Rang, Toomas; Kurel, Raido Proceedings of the Estonian Academy of Sciences. Engineering 2004 / 3, p. 173-178

Complementary multi guard ring JBS structures : numerical analysis

Koel, Ants; Rang, Toomas; Rang, Galina 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. 85-88 : ill

Contact manufacturing technologies for wide band-gap semiconductor materials (invited)

Rang, Toomas BEC'98 : the 6th Biennial Conference on Electronics and Microsystems Technology, October 7-9, 1998, Tallinn, Estonia : proceedings 1998 / p. 17-28: ill

Corrected accounting of electron-hole scattering in cross-term current equations for Si and SiC

Velme, Enn; Udal, Andres 18th Nordic Semiconductor Meeting, Linköping, June 7-10, 1998 : abstracts 1998 / p. F-88: ill
<https://iopscience.iop.org/article/10.1238/Physica.Topical.079a00193>

Corrected accounting of electron-hole scattering in cross-term current equations for Si and SiC

Velme, Enn; Udal, Andres Physica scripta 1999 / p. 193-197 : ill <https://ui.adsabs.harvard.edu/abs/1999PhST...79..193V/abstract>
<http://doi.org/10.1238/Physica.Topical.079a00193>

Current crowding phenomenon in JBC structures

Rang, Toomas; Kurel, Raido; Higelin, G.; Poirier, Laurent Computer Methods and Experimental Measurements for Surface Effects and Contact Mechanics VII 2005 / p. 387-396 <https://www.witpress.com/elibrary/wit-transactions-on-engineering-sciences/49/15383>

Current suppressing effect in alloy metal and 6H-SiC substrate Schottky contacts

Rang, Toomas; Blum, Alfons BEC'96 : the 5th Biennial Baltic Electronics Conference, October 7-11, 1996, Tallinn, Estonia : proceedings 1996 / 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; Sleptšuk, 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; Sleptšuk, 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

Diffusion welding contacts to 6H-SiC substrates

Korolkov, Oleg; Rang, Toomas 43. Internationales Wissenschaftliches Kolloquium, 21.-24.09.1998 1998 / p. 47-48

Diffusion welding techniques for power SiC Schottky packaging

Korolkov, Oleg; Rang, Toomas; Syrkin, A.; Dmitriev, V. Final program of the 12th International Conference on Silicon Carbide and Related Materials : ICSCRM2005 : Pittsburgh, PA, USA 2005 / p. 71

Diffusion welding techniques for power SiC Schottky packaging

Korolkov, Oleg; Rang, Toomas; Syrkin, A.; Dmitriev, V. Silicon carbide and related materials 2005 2006 / p. 919-922

Diffusion welding technology for 6H-SiC substrates

Korolkov, Oleg; Rang, Toomas BEC'98 : the 6th Biennial Conference on Electronics and Microsystems Technology, October 7-9, 1998, Tallinn, Estonia : proceedings 1998 / p. 251-252: ill

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

Dry reciprocating sliding wear behaviour of alumina–silicon carbide nanocomposite fabricated by ceramic injection molding

Smirnov, Anton; Bartolome, Jose F.; Moya, J.S.; Kern, F.; Gadow, R. Journal of the European Ceramic Society 2011 / p. 469-474 : ill

Effect of milling time on dual-nanoparticulate-reinforced aluminum alloy matrix composite materials

Kwon, Hansang; **Saarna, Mart**; Yoon, Songhak; Weidenkaff, Anke; Leparoux, Marc Materials science and engineering : A 2014 / p. 338-345 <https://doi.org/10.1016/j.msea.2013.10.046> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Effect of Si addition on microstructure and mechanical properties of SiC ceramic fabricated by direct LPBF with CVI technology

Wang, Yipu; Wang, Pei; Li, Liqun; Zhang, Jian; Zhang, Yulei; Peng, Jin; Wang, Xingxing; Kang, Nan; El Mansori, Mohamed; **Prashanth, Konda Gokuldoss** Applied sciences 2025 / art. 8585 <https://doi.org/10.3390/app15158585>

Electron microscopy study of contact layers in n-type 4H-SiC after diffusion welding

Korolkov, Oleg; Sleptšuk, Natalja; Sitnikova, A.; **Rang, Toomas** BEC 2008 : 2008 International Biennial Baltic Electronics Conference : proceedings of the 11th Biennial Baltic Electronics Conference : Tallinn University of Technology : October 6-8, 2008, Tallinn, Estonia 2008 / p. 91-94 : ill

Electro-thermal simulations and forward surge current failure prediction for SiC diodes

Velmre, Enn; Udal, Andres Program of 17th Nordic Semiconductor Meeting, Trondheim, Norway, June 17-20, 1996 1996 / p. 28

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

Feasibility study of Si and SiC MOSFETs in high-gain DC/DC converter for renewable energy applications

Blinov, Andrei; Chub, Andrii; Vinnikov, Dmitri; Rang, Toomas Proceedings : IECON 2013 - 39th Annual Conference of the IEEE Industrial Electronics Society : Austria Center Vienna, Vienna, Austria, 10-14 November, 2013 2013 / p. 5975-5978 : ill <https://doi.org/10.1109/IECON.2013.6700115> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Formation of Diffusion welded Al contacts to semiconductor silicon carbide

Korolkov, Oleg 2004

Formation of large area Al contacts on 6H- and 4H-SiC substrates

Korolkov, Oleg; Rang, Toomas Silicon Carbide and Related Materials : ECSCRM2000 : proceedings of the 3rd European Conference on Silicon Carbide and Related Materials : Kloster Banz, Germany, September 2000 2001 / p. 603-606 : ill

Formation of large area Al contacts on 6H- and 4H-SiC substrates

Korolkov, Oleg; Rang, Toomas Abstracts of the 3rd European Conference on Silicon Carbide and Related Materials : ECSCRM'2000 : Sept. 3-7, 2000, Kloster Banz, Germany 2000 / p. 188 <https://www.scientific.net/MSF.353-356.603>

Generalized analytical model for SiC polytypic heterojunctions

Rang, Toomas; Tabun, Indrek; Rang, Galina; Koel, Ants Estonian journal of engineering 2011 / 2, p. 151-157 : ill

Grid-frequency Vienna rectifier and isolated current-source DC-DC converters for efficient off-board charging of electric vehicles

Rabkowski, Jacek; **Blinov, Andrei; Zinchenko, Denys**; Wrona, Grzegorz; Zdanowski, Mariusz 2020 22nd European Conference on Power Electronics and Applications (EPE'20 ECCE Europe), Lyon, France, 7-11 Sept. 2020 2020 / 10 p. : ill <https://doi.org/10.23919/EPE20ECCEEEurope43536.2020.9215772>

Hardness of hot consolidated Al-SiC nanocomposites from planetary milled powders

Kollo, Lauri; Leparoux, Marc; Bradbury, Christopher R.; **Kommel, Lembit**; Carreno-Morelli, Efrain; Rodriguez-Arbaizar, M. World PM2010 proceedings. Vol. 1, Powder Manufacturing and Processing, Miniaturization and Nanotechnology, Powder Pressing 2010 / p. 341-346 https://www.researchgate.net/publication/272160715_Hardness_of_Hot_Consolidates_Al-SiC_Nanocomposites_from_Planetary_Milled_Powders

High phonon-drag thermoelectric efficiency of SiC at low temperatures

Velmre, Enn; Udal, Andres; Grivickas, Vytautas Final program of the 10th International Conference on SiC and Related Materials : ICSRM'2003 : Lyon, France, Oct. 5-10, 2003 2003 / p. ThP4-13 https://www.researchgate.net/publication/240834700_High_Phonon-Drag_Thermoelectric_Efficiency_of_SiC_at_Low_Temperatures

High voltage diffusion welded stacks on the basis of SiC Schottky diodes

Korolkov, Oleg; Sleptšuk, Natalja; Annus, Paul; Land, Raul; Rang, Toomas ICSRM 2015 : program guide 2015 / p. 73

High-efficiency 312-kVA three-phase inverter using parallel connection of silicon carbide MOSFET power modules

Colmenares, Juan; Peftitsis, Dimosthenis; **Rabkowski, Jacek** IEEE transactions on industry applications 2015 / p. 4664-4676 : ill <http://dx.doi.org/10.1109/TIA.2015.2456422>

Highly active Fe-N/C oxygen electrocatalysts based on silicon carbide derived carbon

Teppor, Patrick; Jäger, Rutha; Hints, J.; **Volobujeva, Olga;** Valk, Peeter; Koppel, Miriam; Lust, Enn Polymer Electrolyte Fuel Cells & Electrolyzers 20 (PEFC & E 20) 2020 / p. 607 - 615 <https://doi.org/10.1149/09809.0607ecst> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

High-voltage diffusion welded stacks on the basis of SiC Schottky diodes

Korolkov, Oleg; Sleptšuk, Natalja; Annus, Paul; Land, Raul; Rang, Toomas Silicon carbide and related materials 2015 (ICSRM 2015) : selected, peer reviewed papers from the 16th International Conference on Silicon Carbide and Related Materials, October 4-9, 2015, Giardini Naxos, Italy 2016 / p. 790-794 : ill <https://doi.org/10.4028/www.scientific.net/MSF.858.790> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Impact of phonon drag effect on Seebeck coefficient in p-6H-SiC : experiment and simulation

Bikbajevs, V.; Grivickas, Vytautas; Stölzer, M.; **Velmre, Enn; Udal, Andres;** Grivickas, Paulius; Syväjärvi, Mikael; Yakimova, Rositza Materials science forum 2003 / p. 407-410 <https://www.scientific.net/MSF.433-436.407> <https://doi.org/10.4028/www.scientific.net/MSF.433-436.407>

Impact of phonon-drag effect on Seebeck coefficient in SiC : experiment and simulation

Bikbajevs, V.; Grivickas, V.; Stölzer, M.; **Velmre, Enn; Udal, Andres;** Grivickas, Paulius; Syväjärvi, Mikael; Yakimova, Rositza Abstracts of the Lithuanian National Physics Conference : LNPK-34 : Vilnius, 2003 2003 / p. 219 <http://www.diva-portal.org/smash/record.jsf?pid=diva2%3A269444&dsid=8596>

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](#)

Interfaces to 6H-SiC substrates - technology and simulation

Rang, Toomas; Blum, Alfons Proceedings of the Estonian Academy of Sciences. Engineering 1997 / 4, p. 250-259: ill

Intermediate layer in the metal-silicon carbide contact : investigation of the intermediate layer in the metal-silicon carbide contact obtained by diffusion weldin

Sleptšuk, Natalja 2012 <https://www.amazon.com/Intermediate-Layer-Metal-Silicon-Carbide-Contact/dp/3848422239>

Interpretation of some physical parameters of SiC Schottky interfaces manufactured by diffusion welding technology

Rang, Toomas; Korolkov, Oleg; Ljutov, Jevgeni Proceedings of the Estonian Academy of Sciences. Engineering 2004 / 3, p. 179-184

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

Mizsei, Janos; **Korolkov, Oleg; Sleptšuk, Natalja; Toompuu, Jana; Rang, Toomas** ICSRM2011 : 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

Investigation of charge carrier lifetime temperature-dependence in 4H-SiC diodes

Velmre, Enn; Udal, Andres Silicon carbide and related materials 2006 2007 / p. 375-378 https://www.researchgate.net/publication/250348987_Investigation_of_Charge_Carrier_Lifetime_Temperature-Dependence_in_4H-SiC_Diodes

Investigation of electrical characteristics of SiC based complementary JBS structures

Kurel, Raido 2005 https://www.ester.ee/record=b2053292*est

Investigation of planetary milling for nano-silicon carbide reinforced aluminium metal matrix composites

Kollo, Lauri; Leparoux, Marc; Bradbury, Christopher R.; Jäggi, Christian; Carreno-Morelli, Efrain; Rodriguez-Arbaizar, Mikel Journal of alloys and compounds 2010 / p. 394-400 : ill <https://www.sciencedirect.com/science/article/abs/pii/S0925838809018738>

Investigation of silicon carbide diode structures via numerical simulations including anisotropic effects

Velmre, Enn; Udal, Andres; Masszi, F.; Nordlander, E. Simulation of semiconductor devices and processes. Vol. 6 1995 / p. 340-343: ill https://link.springer.com/chapter/10.1007/978-3-7091-6619-2_83

Investigation of subcontact layers in SiC after diffusion welding

Korolkov, Oleg; Kuznetsova, Natalja; Sitnikova, A.; Viljus, Mart; Rang, Toomas Silicon carbide and related materials 2007 2009 / p. 647-650

Investigation of subcontact layers in SiC after diffusion welding

Korolkov, Oleg; Kuznetsova, Natalja; Sitnikova, A.; Viljus, Mart; Rang, Toomas Silicon carbide and related materials 2007 / p. 100 <https://www.scientific.net/MSF.600-603.647>

Investigation of the intermediate layer in the metal-silicon carbide contact obtained by diffusion welding = Difusioonkeevitusega valmistatud metalli ja ränikarbiidi vahelise üleminekuala vahekihi uurimine

Sleptšuk, Natalja 2011 https://www.ester.ee/record=b2692547*est

Large area 4H-SiC power Schottky diode

Rang, Toomas; Korolkov, Oleg; Pikkov, Mihhail Abstracts of the 3rd International Conference and Exhibition Micro Materials : MicroMat2000 : April 17-19, 2000, Berlin, Germany 2000 / p. 303-304

Large area 4H-SiC power Schottky diode

Rang, Toomas; Korolkov, Oleg; Pikkov, Mihhail Proceedings of the 3rd International Conference and Exhibition Micro Materials : MicroMat2000 : April 17-19, 2000, Berlin, Germany 2000 / p. 890-893

Large area 6H-SiC Schottky diode

Rang, Toomas; Korolkov, Oleg; Pikkov, Mihhail Proceedings of the Estonian Academy of Sciences. Engineering 2000 / 2, p. 155-159 : ill https://artiklid.elnet.ee/record=b1004045*est

Large area high quality interfaces to SiC substrates - technology and modelling

Rang, Toomas; Korolkov, Oleg; Kurel, Raido; Pikkov, Mihhail Materials mechanics, fracture mechanics, micro mechanics 1999 / p. 574-579: ill

Leakage currents in 4H-SiC JBS diodes

Ivanov, Pavel; **Korolkov, Oleg; Sleptšuk, Natalja** Semiconductors 2012 / p. 397-400 : ill <https://link.springer.com/article/10.1134/S106378261203013X>

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](#)

Measurement of charge carrier lifetime temperature dependence in 4H-SiC power diodes

Velmre, Enn; Udal, Andres Abstracts of International Conference on Silicon Carbide and Related Materials : ICSCRM'99 : October 10-15, 1999, Research Triangle Park, North-Carolina, USA 1999 / paper no 394, 2 p https://www.researchgate.net/publication/240833834_Measurement_of_Charge_Carrier_Lifetime_Temperature-Dependence_in_4H-SiC_Power_Diodes

Modeling and simulations of 4H-SiC/6H-SiC/4H-SiC single quantum-well light emitting diode using diffusion bonding technique

Rashid, Muhammad Haroon; **Koel, Ants; Rang, Toomas** Micromachines 2021 / art. 1499 <https://doi.org/10.3390/mi12121499> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of charge carrier non-isothermal transport in silicon and silicon carbide

Velmre, Enn; Udal, Andres Proceedings of the Estonian Academy of Sciences. Engineering 2000 / p. 144-154 : ill https://artiklid.elnet.ee/record=b1004044*est

Modelling of inhomogeneities of SiC Schottky interfaces

Rang, Toomas Software for Electrical Engineering Analysis and Design V : [Fifth International Conference ... : Electrosoft V] 2001 / p. 3-15 : ill <https://www.witpress.com/Secure/elibrary/papers/ES01/ES01000FU.pdf>

Nano- and Micro-Scale simulations of Ge/3C-SiC and Ge/4H-SiC NN-heterojunction diodes

Rashid, Muhammad Haroon; Koel, Ants; Rang, Toomas 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 Materials science forum 2020 / p. 490-496 <https://doi.org/10.4028/www.scientific.net/MSF.1004.490> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Nano and micro-scale simulations of Si/4H-SiC and Si/3C-SiC NN-heterojunction diodes

Rashid, Muhammad Haroon; Koel, Ants; 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. 357–361 <https://doi.org/10.4028/www.scientific.net/MSF.963.357> [Conference proceeding at Scopus](#) [Article at Scopus](#)

Nanoscale and microscale simulations of N-N junction heterostructures of 3C-4H silicon carbide

Rashid, Muhammad Haroon; Koel, Ants; Rang, Toomas; Gähwiler, Reto; Grosberg, Martin; Jõemaa, Rauno Materials and contact characterisation VIII 2017 / p. 235-248 : ill <https://doi.org/10.2495/MC170241> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Non-destructive eddy current measurements for silicon carbide heterostructure analysis

Sahakyan, Armen; Koel, Ants; Rang, Toomas Materials and contact characterisation VIII 2017 / p. 49-60 : ill <https://doi.org/10.2495/MC170061> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Numerical analysis of the influence of deep energy level traps in SiC Schottky structures

Koel, Ants; Rang, Toomas; Rang, Galina High performance structure and materials. VI 2012 / p. 439-448 : ill

Numerical investigation of SiC devices performance considering the incomplete dopant ionization

Velme, Enn; Udall, Andres Silicon carbide and related materials 2005 2006 / p. 1383-1386 <https://www.scientific.net/MSF.529-529.1383>

Numerical simulation of a silicon carbide diode

Velme, Enn; Udall, Andres BEC : Baltic Electronics Conference : proceedings of the 4th Biennial Conference, October 9-14, 1994, Tallinn (Estonia). 2 1994 / p. 559-566: ill https://www.eester.ee/record=b2150914*est

Numerical simulation of P-type Al/4H-SiC Schottky barrier diodes [Online resource]

Ziko, Mehadi Hasan; Koel, Ants; 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.2018.8600976>

Numerical simulations of wideband SiC N-N heterostructure diode

Patankar, Udayan Sunil; Koel, Ants; Pardy, Tamas LAEDC 2020 : Latin American Electron Devices Conference, San José, Costa Rica, February 25-28, 2020 2020 / 4 p <https://doi.org/10.1109/LAEDC49063.2020.9073489>

Numerical study of current crowding phenomenon in complementary 4H-SiC JBS rectifiers

Rang, Toomas; Higelin, G.; Kurel, Raido Silicon Carbide and Related Materials 2003 2004 / p. 1045-1048 <https://www.scientific.net/MSF.457-460.1045>

On dead-time optimization and active gate driving in flyback converters with synchronous rectifiers

Philipps, Daniel; Blinov, Andrei; Peftitsis, Dimosthenis IEEE Access 2024 / p. 173146-173155 <https://doi.org/10.1109/ACCESS.2024.3462956> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Oxidation-abrasion of TiC-based cermets in SiC medium

Antonov, Maksim; Hussainova, Irina; Kübarsepp, Jakob; Traksmäa, Rainer Wear 2011 / p. 23-31 : ill

Parametric simulation of SiC Schottky JBC structures

Rang, Toomas; Kurel, Raido Computer methods and experimental measurements for surface effects and contact mechanics VIII 2007 / p. 315-334 <https://www.witpress.com/Secure/elibrary/papers/SECM07/SECM07030FU1.pdf>

Polytypic heterojunctions for wide bandgap semiconductor materials

Shenkin, Mikhail; Korolkov, Oleg; Rang, Toomas; Rang, Galina Materials characterization VII 2015 / p. 273-282 : ill

Preliminary approach to the timing measurements for reverse recovery applied to the SiC Schottky diode model

Pikkov, Mihhail The 7th Biennial Conference on Electronics and Microsystem Technology "Baltic Electronics Conference" : BEC 2000 : October 8 - 11, 2000, Tallinn, Estonia : conference proceedings 2000 / p. 321-322 : ill

Preliminary investigation of diffusion welded contacts to p-type 6H-SiC

Korolkov, Oleg; Rang, Toomas; Kuznetsova, Natalja; Ruut, Jana BEC 2002 : proceedings of the 8th Biennial Baltic Electronics Conference : October 6-9, 2002, Tallinn, Estonia 2002 / p. 55-56 : ill

Ränikarbiidil põhinevate jõupooljuhtseadiste disain ja karakteriseerimine

Rang, Toomas; Rang, Galina Teadusmõtte Eestis. 4, Tehnikateadused. 2 2007 / lk. 121-131 : ill

Self-heating phenomenon and current suppressing effect at 6H-SiC Schottky interfaces

Kurel, Raido; Rang, Toomas Proceedings of the 5th NEXUSPAN Workshop on Thermal Aspects in Microsystem Technology, 6-8 May 1998, Budapest, Hungary 1998 / p. 88-91 <https://www.witpress.com/elibrary/wit-transactions-on-engineering-sciences/22/5010>

Self-heating phenomenon and current suppressing effect at the SiC Schottky interfaces

Rang, Toomas; Kurel, Raido Software for electrical engineering analysis and design. IV 1999 / p. 153-162: ill
<https://www.witpress.com/elibrary/wit-transactions-on-engineering-sciences/22/5010>

Self-Propagating High-Temperature Synthesis of Silicon Carbide Using Reactions Thermokinetic Coupling Approach

Amirkhanyan, Narine; Kirakosyan, Hasmik; Zakaryan, Marieta; Zurnachyan, Alina; Aydinyan, Sofiya EC-SILICONF2 : The 2nd European Conference on Silicon and Silica Based Materials, Hungary, October 4-8, 2021 2021 / p. 118

SiC Schottky diode for use in power convertors

Pikkov, Mihhail; Rang, Toomas; Pokatilov, Andrei BEC 2006 : 2006 International Baltic Electronics Conference : Tallinn University of Technology, October 2-4, 2006, Tallinn, Estonia : proceedings of the 10th Biennial Baltic Electronics Conference 2006 / p. 245-246 : ill

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

SiC и GaAs диоды в устройствах силовой электроники

Blinov, Andrei; Vinnikov, Dmitri; Rang, Toomas Технічна електродинаміка : тематичний випуск : силова електроніка та енергоефективність 2012 / с. 42-46 : ил

SiC-diodes forward surge current failure mechanisms : experiment and simulation

Velme, Enn; Udal, Andres ESREF'97 : proceedings of the 8th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis, Oct. 7-10, 1997, Bordeaux, France 1997 / p. 1671-1674
<https://www.sciencedirect.com/science/article/abs/pii/S0026271497001364>

Silicon carbide - new challenge for power semiconductor devices

Rang, Toomas; Rang, Galina 2nd International Symposium "Topical Problems of Education in the Field of Electrical and Power Engineering" : Kuressaare, Estonia, January 17-22, 2005 2005 / p. 36-42 : ill

Simulations of heterostructures based on 3C-4H and 6H-4H silicon carbide polytypes

Rashid, Muhammad Haroon; Koel, Ants; 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. 302-305 : ill <https://doi.org/10.4028/www.scientific.net/MSF.924.302> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

Sintering of silicon carbide obtained by combustion synthesis

Amirkhanyan, Narine; Kirakosyan, Hasmik; Zakaryan, Marieta; Zurnachyan, Alina; Rodriguez, Miguel Angel; Abovyan, L.; Aydinyan, Sofiya Ceramics international 2023 / p. 26129-26134 <https://doi.org/10.1016/j.ceramint.2023.04.233> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Some comparative properties of diffusion-welded contacts to 6H and 4H silicon carbide

Korolkov, Oleg; Rang, Toomas Silicon Carbide and Related Materials 2001 : ICSCRM2001 : proceedings of the International Conference on Silicon Carbide and Related Materials 2001, Tsukuba, Japan, October 28 - November 2, 2001. Part 2 2002 / p. 941-944 : ill

Some of comparative properties of diffusion welded contacts to 6H- and 4H-silicon carbide

Korolkov, Oleg; Rang, Toomas International Conference on Silicon Carbide and Related Materials 2001 - ICSCRM2001 - October 28-November 2, 2001 (Epochal Tsukuba, Ibaraki, Japan) : technical digest 2001 / p. 625-626 : ill
https://www.researchgate.net/publication/250340293_Some_Comparative_Properties_of_Diffusion-Welded_Contacts_to_6H_and_4H_Silicon_Carbide

Static and dynamic behavior of the SiC complementary JBS structures

Kurel, Raido; Rang, Toomas BEC 2006 : 2006 International Baltic Electronics Conference : Tallinn University of Technology, October 2-4, 2006, Tallinn, Estonia : proceedings of the 10th Biennial Baltic Electronics Conference 2006 / p. 59-62 : ill

ZrC-TiC-MoSi₂ ceramic composite by spark plasma sintering

Hussainova, Irina; Minasyan, Tatevik; Liu, Le; Aydinyan, Sofiya Journal of Physics: Conference Series 2020 / art. 012028

Temperature effects in alloy metal and 6H-SiC substrate Schottky contacts caused by the current suppressing effect
Rang, Toomas; Blum, Alfons Proceedings of the International Conference and Exhibition Micro Materials : MicroMat '97, April 16-18, 1997, Berlin, Germany 1997 / p. 591-596

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 elektrotehnika = Electronics and electrical engineering 2012 / p. 45-48 : ill <https://eejournal.ktu.lt/index.php/elt/article/view/2610>

A theoretical study of electron drift mobility anisotropy in n-type 4H- and 6H-SiC
Velmre, Enn; Udal, Andres Abstracts of International Conference on Silicon Carbide and Related Materials : ICSCRM'99 : October 10-15, 1999, Research Triangle Park, North-Carolina, USA 1999 / paper no 395, 2 p
https://www.researchgate.net/publication/250338907_A_Theoretical_Study_of_Electron_Drift_Mobility_Anisotropy_in_n-Type_4H-and_6H-SiC

A theoretical study of electron drift mobility anisotropy in n-type 4H- and 6H-SiC
Velmre, Enn; Udal, Andres Materials science forum 2000 / p. 725-728

Thermopower measurements in 4H-SiC and theoretical calculations considering the phonon drag effect
Grivickas, Vytautas; Stölzer, M.; **Velmre, Enn; Udal, Andres**; Grivickas, Paulius; Syväjärvi, Mikael; Yakimova, Rositza; Bikbajevs, V. Silicon Carbide and Related Materials : ECSCRM2000 : proceedings of the 3rd European Conference on Silicon Carbide and Related Materials : Kloster Banz, Germany, September 2000 2001 / p. 491-494 : ill
https://www.researchgate.net/publication/240833914_Thermopower_Measurements_in_4H-SiC_and_Theoretical_Calculations_Considering_the_Phonon_Drag_Effect

Thermopower measurements in 4H-SiC and Theoretical calculations considering the phonon drag effect
Grivickas, V.; Stölzer, M.; **Velmre, Enn; Udal, Andres**; Grivickas, P.; Syväjärvi, M.; Yakimova, R.; Bikbajevs, V. Abstracts of the 3rd European Conference on Silicon Carbide and Related Materials : ECSCRM'2000 : Sept. 3-7, 2000, Kloster Banz, Germany 2000 / p. 144

Two dimensional modelling of alloy metal Schottky contacts to 6H-SiC substrate
Rang, Toomas; Blum, Alfons Proceedings of the ELECTROSOFT 96, May 28-30, San-Miniato, Italy 1996 / p. 347-356

Two-dimensional nonisothermal analysis of the current crowding effect at nonuniform SiC Schottky contacts using device simulator DYNAMIT-2DT
Kurel, Raido; Udal, Andres BEC 2002 : proceedings of the 8th Biennial Baltic Electronics Conference : October 6-9, 2002, Tallinn, Estonia 2002 / p. 51-54 : ill

Исследование р-п-переходов на основе 4H-SiC, изготовленных имплантацией бора, методом нестационарной емкостной спектроскопии
Ivanov, Pavel; Potapov, Alexander; Samsonova, Tatyana; **Korolkov, Oleg; Sleptšuk, Natalja** Физика и техника полупроводников 2011 / с. 1358-1362 : ил

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>