ДОКАЗ ДА ЈЕ РЕЗУЛТАТ ОБЈАВЉЕН У Nanoscale 9, 19337 (2017.) ПРЕДСТАВЉЕН У ОНЛАЈН ЧАСОПИСУ ПОСВЕЋЕНОМ ЗАНИМЉИВИМ НАУЧНИМ ОТКРИЋИМА

NEWS

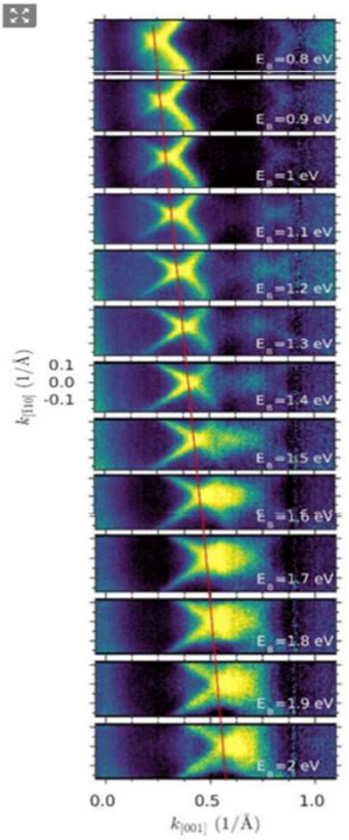
A new class of massless fermion

BY HANNAH KERR | 5 FEBRUARY 2020

Unique electronic structure characterises fortune-teller fermion

Experimental proof of a new class of massless fermion with anisotropic characteristics has been found for the first time by a team in Poland.[1] The discovery could help researchers design new graphene-like materials with previously unseen properties.

Fermions are a class of particle that include electrons, protons and neutrons. Most have mass but massless fermions were found in 2015. These are quasiparticles: electronic activity that behaves as if it were a particle in free space. Electrons in 2D materials behave like massless fermions. This behaviour has, until recently, always been associated with a feature in the electronic band structure called a Dirac cone where the valence and conduction bands take the shape of a conical surface meeting at a Dirac point. Massless Dirac fermions are isotropic and they can carry electric charge exceptionally fast because they are not slowed by backscattering. This is the basis for the extraordinary electronic properties of graphene and other 2D materials.



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Constant energy photoemission maps of Bi/Si(110) for different electron binding energies

In 2017, scientists in Serbia predicted fortune-teller fermions, a completely new type of massless fermion, existed in 2D materials that meet specific symmetry criteria.[2] Now, researchers from Maria Curie-Sklodowska University in Poland have found physical evidence for this fermion. Angle-resolved photoelectron spectroscopy helped them to observe the band structure of a 2D silicon crystal surface. Instead of smooth Dirac cones, the conduction and valence bands form a set of intersecting planes with sharp edges, some resembling pyramids and some resembling origami fortune-tellers. The planes meet, not at a 0D Dirac point, but along a 1D Dirac line. Such a distinct electronic structure has never been observed in any known crystal, until now.

If new materials can be engineered to support these states on a larger scale then they might behave in ways never seen before.

Reference

1. M Kopciuszyński *et al*, *Nanoscale Horiz.*, 2020, DOI: 10.1039/c9nh00681h
2. V Damljanović, I Popov and R Gajić, *Nanoscale*, 2017, **9**, 19337 (DOI: 10.1039/c7nr07763g)

Hannah Kerr

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Citation Report

Damljanovic V (Author)

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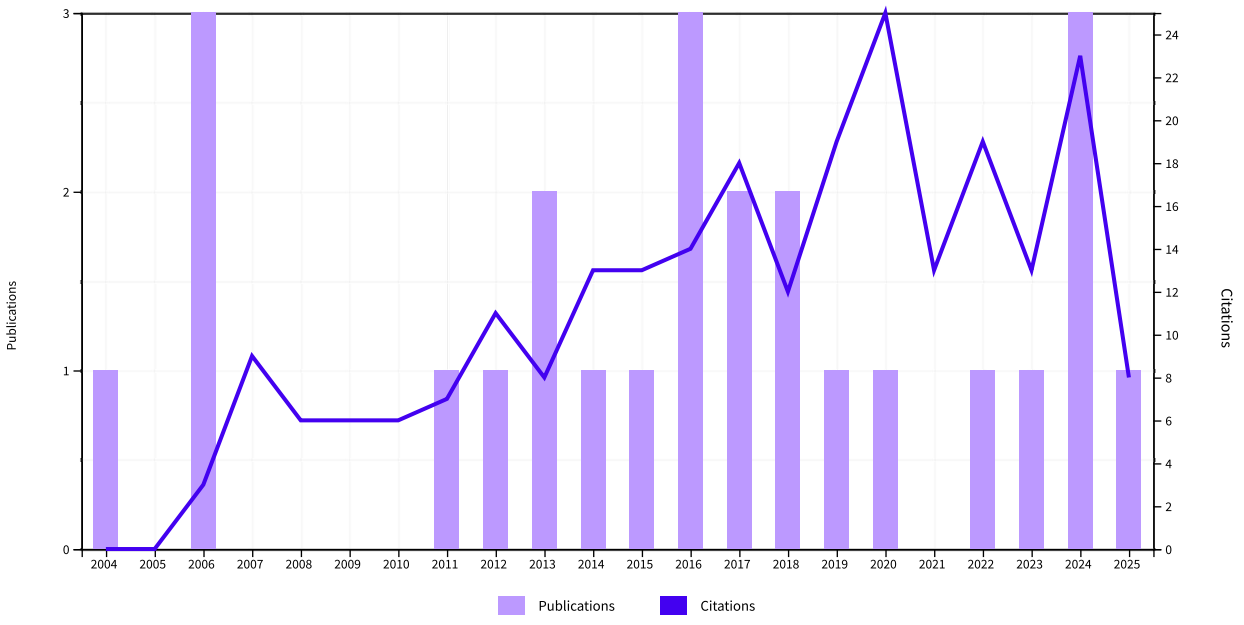

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	Citations						
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	2021	2022	2023	2024	2025		
Total	13	19	13	23	8	12.3	246
1 Magnetoresistance effects in $SrFeO_{3-\delta}$:: Dependence on phase composition and relation to magnetic and charge order Adler, P; Lebon, A; (...); Keimer, B	4	10	6	1	3	6.8	136

	Mar 2006 | PHYSICAL REVIEW B 73 (9)							
2	Existence of Dirac cones in the Brillouin zone of diperiodic atomic crystals according to group theory Damljanovic, V and Gajic, R Mar 2 2016 | JOURNAL OF PHYSICS-CONDENSED MATTER 28 (8)	2	1	1	2	1	1.4	14
3	Density functional theory study of phonons in graphene doped with Li, Ca and Ba Pesic, J; Damljanovic, V; (...); Belic, M Dec 2015 | EPL 112 (6)	1	1	0	0	0	1.18	13
4	Fortune teller fermions in two-dimensional materials Damljanovic, V; Popov, I and Gajic, R Dec 28 2017 | NANOSCALE 9 (48) , pp.19337-19345	2	2	1	3	0	1.11	10
5	Ab Initio Study of the Electronic, Vibrational, and Mechanical Properties of the Magnesium Diboride Monolayer Pesic, J; Popov, I; (...); Gajic, R Jun 2019 | CONDENSED MATTER 4 (2)	3	1	0	2	1	1.29	9
6	Growth and oxygen treatment of $SrFeO_{3-y}$ single crystals Maljuk, A; Lebon, A; (...); Keimer, B Jun 1 2006 | JOURNAL OF CRYSTAL GROWTH 291 (2) , pp.412-415	1	1	0	0	0	0.45	9
7	Existence of semi-Dirac cones and symmetry of two-dimensional materials Damljanovic, V and Gajic, R May 10 2017 | JOURNAL OF PHYSICS-CONDENSED MATTER 29 (18)	0	1	0	2	0	0.89	8
8	Addendum to 'Existence of Dirac cones in the Brillouin zone of diperiodic atomic crystals according to group theory' Damljanovic, V and Gajic, R Nov 2 2016 | JOURNAL OF PHYSICS-CONDENSED MATTER 28 (43)	0	1	1	1	1	0.8	8
9	Fully linear band crossings at high symmetry points in layers: classification and role of spin-orbit coupling and time reversal Lazic, N; Damljanovic, and Damnjanovic, M Aug 12 2022 | JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL 55 (32) Enriched Cited References	0	0	2	4	0	1.5	6

10	Characters of graphene's symmetry group Dg80 Damljanovic, V; Kostic, R and Gajic, R 4th International School and Conference on Photonics Sep 2014 | PHYSICA SCRIPTA T162	0	0	1	1	0	0.42	5
11	Phonon eigenvectors of graphene at high-symmetry points of the Brillouin zone Damljanovic, V and Gajic, R 3rd International School and Conference on Photonics Apr 2012 | PHYSICA SCRIPTA T149	0	0	0	0	0	0.36	5
12	Peculiar symmetry-protected electronic dispersions in two-dimensional materials Damljanovic, V; Lazic, N; (...); Damnjanovic, M Nov 18 2020 | JOURNAL OF PHYSICS-CONDENSED MATTER 32 (48) Enriched Cited References	0	1	1	2	0	0.67	4
13	Growth of $RuSr_2GdCu_2O_8$ films by post-annealing of pulsed laser deposited precursors Matveev, AT; Cristiani, G; (...); Habermeier, HU Dec 15 2004 | PHYSICA C-SUPERCONDUCTIVITY AND ITS APPLICATIONS 417 (1-2) , pp.50-57	0	0	0	0	0	0.18	4
14	Movable but unavoidable nodal lines through high-symmetry points in 2D materials Damljanovic, V Apr 4 2023 | PROGRESS OF THEORETICAL AND EXPERIMENTAL PHYSICS 2023 (4) Enriched Cited References	0	0	0	2	1	1.5	3
15	Electronic structures near unmovable nodal points and lines in two-dimensional materials Damljanovic, V and Lazic, N May 26 2023 | JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL 56 (21) Enriched Cited References	0	0	0	2	1	1	3
16	M-POINT PHONON EIGENVECTORS OF GRAPHENE OBTAINED BY GROUP PROJECTORS Damljanovic, V; Kostic, R and Gajic, R 2013 | ROMANIAN REPORTS IN PHYSICS 65 (1) , pp.193-203	0	0	0	0	0	0.23	3
17	An example of diperiodic crystal structure with semi-Dirac electronic dispersion Damljanovic, V	0	0	0	1	0	0.25	2

	Jul 2018 | OPTICAL AND QUANTUM ELECTRONICS 50 (7)							
18	Structure and dynamics of X_n-type clusters (n=3, 4, 6) from spontaneous symmetry breaking theory Damljanovic, V 3rd International Conference on the Physics of Optical Materials and Devices Nov 2013 | PHYSICA SCRIPTA T157	0	0	0	0	0	0.15	2
19	Raman scattering study of $Ru(Sr,La)_2GdCu_2O_8$ Damljanovic, V; Ulrich, C; (...); Loidl, A May 2006 | PHYSICAL REVIEW B 73 (17)	0	0	0	0	0	0.1	2
20	Existence of Mexican-hat dispersion and symmetry group of a layer Damljanovic, V May 2025 | PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES 170 Enriched Cited References	0	0	0	0	0	0	0
21	Non-magnetic layers with a single symmetry-protected Dirac cone: Which additional dispersions must appear? Damljanovic, V Sep 2024 | EPL 147 (5)	0	0	0	0	0	0	0
22	Centrosymmetric, non-symmorphic, non-magnetic, spin-orbit coupled layers without Dirac cones Damljanovic, V Jun 27 2024 | OPTICAL AND QUANTUM ELECTRONICS 56 (7) Enriched Cited References	0	0	0	0	0	0	0
23	Bifurcation in reflection spectra of holographic diffraction grating recorded on dicromated pullulan Savic-Sevic, S; Pantelic, D; (...); Jelenkovic, B Apr 2018 | OPTICAL AND QUANTUM ELECTRONICS 50 (4)	0	0	0	0	0	0	0
24	Simple analytical relation between vibrational frequencies of linear XY_2-type molecules Damljanovic, V May 2016 | OPTICAL AND QUANTUM ELECTRONICS 48 (5)	0	0	0	0	0	0	0
25	On the Reflectivity of One-Dimensional Photonic Crystal Realized in Dichromated Pullulan Damljanovic, V; Savic-Sevic, S; (...); Jelenkovic, B 12th International Conference on Transparent Optical Networks (ICTON)	0	0	0	0	0	0	0

2011 | 2010 12TH INTERNATIONAL CONFERENCE ON TRANSPARENT OPTICAL NETWORKS (ICTON)

Prevod sa engleskog na srpski jezik

UNIVERZITET U ŠTUTGARTU

SERTIFIKAT

Univerzitet u Štutgartu ovime dodeljuje

VLADIMIRU DAMLJANOVIĆU

rođenom 18. novembra 1971
u Beogradu, Jugoslavija

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U Štutgartu,
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Prof. Dr. Dieter Schweitzer (svr.)
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JASNA FILIPOVIĆ-BOJIĆ
Svetogorska 4, Beograd
Telefon: 3239-053

ФИЗИЧКИ ФАКУЛТЕТ
УНИВЕРЗИТЕТ У БЕОГРАДУ
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БЕОГРАД

Na osnovu člana 119. i 120. Zakona o univerzitetu ("Službeni glasnik Republike Srbije" br. 21/2002) Naučno-nastavno veće Fizičkog fakulteta Univerziteta u Beogradu, na svojoj sednici održanoj 24. marta 2004. godine, nostrifikovalo je magistarsku diplomu koju je VLADIMIR DAMLJANOVIĆ stekao na Študgartskom univerzitetu, Nemačka, čime se priznaje ravnopravnost magistarskoj diplomi stečenoj na Fizičkom fakultetu Univerziteta u Beogradu, kao i sva prava koja takva diploma i zvanje MAGISTAR FIZIČKIH NAUKA daju.

Beograd, 25.3.2004.

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УНИВЕРЗИТЕТ У БЕОГРАДУ

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Тел.: 011 3207400; Факс: 011 2638912 E-mail: officebu@rect.bg.ac.yu

Београд, 29.10.2009. године
Број: 06-613-1467/4/09
МЧБ

На основу члана 104. став 9. Закона о високом образовању ("Службени гласник РС", бр. 76/05, 100/07-аутентично тумачење и 97/08), члана 11. Правилника о признавању страних високошколских исправа ("Гласник Универзитета у Београду", бр. 129/06 и 145/08) и одлуке Комисије Универзитета за признавање страних високошколских исправа број: 06-613-1467/3/09 од 1. октобра 2009. године, доносим

Р Е Ш Е Њ Е

ПРИЗНАЈЕ СЕ диплома **Universität Stuttgart, Штутгарт, Немачка,** од 21.01.2009. године, на коме је **Владимир (Милан) Дамљановић** стекао образовање, као диплома докторских студија са научним звањем **доктор физичких наука**.

О б р а з л о ж е њ е

Универзитету у Београду и Физичком факултету обратио се Владимир (Милан) Дамљановић рођен 18.11.1971. године у Београду, Република Србија, захтевом за признавање дипломе Universität Stuttgart, Штутгарт, Немачка, на коме је именовани стекао звање доктор природних наука.

Стручни органи Факултета размотрили су све списе предмета и предложили Комисији Универзитета доношење одлуке, којом се предметна диплома признаје као диплома докторских студија са научним звањем доктор физичких наука, што је Комисија Универзитета прихватила.

Са изложеног, одлучено је као у изреци овог решења.

ПОУКА О ПРАВНОМ ЛЕКУ:

Ово решење је коначно у управном поступку, па се против њега може покренути управни спор код Окружног суда у Београду, у року од 30 дана од дана пријема решења.

Р Е К Т О Р

Проф. др Бранко Ковачевић

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PROTOCOL

3rd SELECTION MEETING

MULTILATERAL SCIENTIFIC AND TECHNOLOGICAL COOPERATION IN THE DANUBE REGION

The selection meeting of the 3rd Joint Call of the Programme for Funding Multilateral Scientific and Technological Cooperation Projects in the Danube Region adopted by

- the Austrian Federal Ministry of Education, Science and Research
- the Bulgarian National Science Fund
- the Ministry of Education, Youth and Sports of the Czech Republic
- the French Ministry of Higher Education and Research and the French Ministry of Europe and Foreign Affairs
- the Ministry of Science and Technological Development of Montenegro
- the Ministry of Science, Technological Development and Innovation of the Republic of Serbia
- and the Ministry of Education, Science, Research and Sport of the Slovak Republic

took place in Vienna and Belgrade on 16 June 2023.

The representatives of the participating countries (hereinafter jointly referred to as "delegations") can be found in Annex 1.

Selection of projects for the period 2023-2025

The delegations selected according the agreed procedure and recommended to finance mobility costs of 24 co-operation projects lasting from July 2023 to June 2025. These projects are listed in Annex 2.

Next call for project proposals for the period 2025-2027

The delegations have reached an understanding that due to the success of the Joint Calls a fourth call for proposals shall be envisaged for autumn 2024. The selection meeting is planned in the second half of 2025. The details will be agreed upon by e-mail. The 4th call shall be open to further "Participants" in the Danube region but also to other interested countries joining the programme.

Done in Vienna, Podgorica and Belgrade, on 16. June 2023 in 7 original copies in English language.

Protocol: 3rd Selection Meeting of the Multilateral Scientific and Technological cooperation in the Danube Region

For the Austrian Participant

.....

Christian Gollubits

Head of Unit
Bilateral Cooperation and International S&T Agreements
Federal Ministry of Education, Science and Research of the Republic of Austria

Protocol: 3rd Selection Meeting of the Multilateral Scientific and Technological cooperation in the Danube Region

For the Bulgarian Participant

.....

Yuri Kalvachev

Manager
Bulgarian Science Fund

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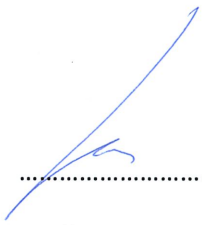
For the Czech Participant



.....

Luděk Kos

Head of Unit
Management of International R&D Programmes Unit
Ministry of Education, Youth and Sports of the Czech Republic

Protocol: 3rd Selection Meeting of the Multilateral Scientific and Technological cooperation in the Danube Region

For the French Participant

.....

Christophe Delacourt

Head of the International Expertise Department
French Ministry of Higher Education and Research

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For the Montenegrin Participant

Anđela Radulović

.....

Anđela Radulović

General Secretary

Ministry of Science and Technological Development of Montenegro

Protocol: 3rd Selection Meeting of the Multilateral Scientific and Technological cooperation in the Danube Region

For the Serbian Participant

Ivana Vukašinović

Acting Assistant Minister

Department for International Cooperation and European Integration
Ministry of Science, Technological Development and Innovation

Protocol: 3rd Selection Meeting of the Multilateral Scientific and Technological cooperation in the Danube Region

For the Slovak Participant

.....

Marcel Sládok

Department of European and International Science Policy
Ministry of Education, Science, Research and Sport of the Slovak Republic

Annex 2 MSTC_DR Projects 2023-2025

Project #	Project Title	AT Project Leader - First Name	AT Project Leader - Surname	AT Organisation	FR Project Leader - First Name	FR Project Leader - Surname	FR Organisation	CZ Project Leader - First Name	CZ Project Leader - Surname	CZ Organisation	SK Project Leader - First Name	SK Project Leader - Surname	SK Organisation	SRB Project Leader - First Name	SRB Project Leader - Surname	SRB Organisation	ME Project Leader - First Name	ME Project Leader - Surname	ME Organisation	BG Project Leader - First Name	BG Project Leader - Surname	BG Organisation
1	Indicators of genetic diversity of autochthonous sheep and goat breeds from Slovakia, Austria, Czech Republic, Serbia and Montenegro	Gabor	MESZAROS	Universität für Bodenkultur Wien;				Luboš	VOSTRÝ	Czech University of Life Sciences Prague	Radovan	KASARDA	Slovak University of Agriculture in Nitra	Vladan	BOGDANOVIĆ	University of Belgrade Faculty of Agriculture	Bozidarka	MARKOVIC	University of Montenegro			
2	Convergent adaptation to challenging substrates in plants	Bozo	FRAJMAN	Universität Innsbruck;				Filip	KOLÁŘ	Charles University				Tomica	MIŠLJENOVIĆ	University of Belgrade Faculty of Biology						
3	Integral geological and geochemical study of Miocene lignite from basins in the Danube region.	Doris	GROSS	Montanuniversität Leoben;										Ksenija	STOJANOVIĆ	University of Belgrade Faculty of Chemistry, Faculty of Mining and				Irena	KOSTOVA-DINEVA	Sofia University "St. Kliment Ohridski"
4	Joint European Research and Innovation on the Belle II-Experiment (JERI-B2)	Christoph	SCHWANDA	Österreichische Akademie der	Isabelle	RIPP-BAUDOT	CNRS	Zdeněk	DOLEŽAL	Charles University												
5	Identification of defense mechanisms against harmful and aggressive pathogens in economically important							Martin	ČERNÝ	Mendel University in Brno	Jaroslav	Ďurkovič	Technical University in Zvolen	Ivan	Milenković	University of Belgrade Faculty of Forestry						
6	Synergy of multiscale Modelling and machine Learning: Strategy for biomedical sciences and battle against cancer				Adnan	Ibrahimbegovic	University of Technology Compiegne (UTC)	Anna	KUČEROVÁ	Czech Technical University in Prague				Miloš/Nenad	Kojić/Filipović	University of Kragujevac						
7	Towards a network for automated real-time monitoring of Quercus robur L. vitality in the Danube region (NetFor)	Katharina	LAPIN	Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft;				Marko	STOJANOVIĆ	Global Change Research Institute of the Czech Academy of Sciences	Marek	JEŽÍK	Slovak Academy of Sciences - SAS	Srđan	STOJNIĆ	University of Novi Sad Faculty of Agriculture						
8	Species-specific effect of nucleolus in embryonic development				Amélie	Bonnet-Garnier	Centre INRA de Jouy-en-Josas	Jan	NEVORAL	Charles University (Faculty of Medicine in Pilsen)	Michal	Benc	Constantine the Philosopher University in Nitra									
9	Beneath the water surface: a study on host-parasite-microbes associations in the aquatic environments / BENEATH THE WATER SURFACE: STUDY ON HOST-SYMBIONT ASSOCIATIONS IN AQUATIC ENVIRONMENT (submitted in France)				Yves / ELODIE (in the French project)	Desdevises / MAGNANOU (in the French project)	Oceanological Observatory of Banyuls -sur-Mer (OOB) / BIOLOGIE INTÉGRATIVE DES ORGANISMES MARINS	Michal	BENOVICS	Masaryk University	Peter	Mikulíček	Comenius University Bratislava									
10	Luminescent materials for optical measurements of pressure and temperature in aerospace research	Sergey	BORISOV	Technische Universität Graz;	Benoit	FOND	Paris-Saclay University							Miroslav	DRAMIĆANIN	Vinča Institute of Nuclear Sciences						
11	Multifunctional ZnO-based hybrids for wastewater remediation							Václav	SLOVÁK	University of Ostrava	Dana	Dvoranová	Slovak University of Technology in Bratislava (STU)	Dušan	Sredojević	University of Belgrade Vinča Institute of Nuclear Sciences						
12	SiC Timepix detector				Abdallah / CHRISTOPHE (in the French proposal)	Lyoussi / DESTOUCHES (in the French proposal)	French Atomic Energy and Alternative Energies Commission	Benedikt	BERGMANN	Czech Technical University in Prague	Andrea	Šagátová	Slovak University of Technology in Bratislava (STU)									
13	Climate change Resistant Danube river embankments	Wei	WU	Universität für Bodenkultur Wien;				Lumír	MIČA	Brno University of Technology	Jana	FRANKOVSKÁ	Slovak University of Technology in Bratislava (STU)	Sanja	JOCKOVIĆ	University of Belgrade Faculty of Civil Engineering				Chavdar	KOLEV	Higher School of Transport "Todor Kableshkov" Sofia
14	Mathematical investigation of hysteresis in material modeling	Victor A.	KOVTUNENKO	Technische Universität Graz; Technische Universität Wien; Universität Graz;	Adrien	PETROV	Université de Lyon	Giselle Antunes	MONTEIRO	Institute of Mathematics of the Czech Academy of Sciences												
15	Geomorphological interpretation of photogrammetry and laser scanning data in the study of torrential watersheds				Laure	Guerit	CNRS – Géosciences Rennes, Université de Rennes	Jiří	JAKUBÍNSKÝ	Global Change Research Institute of the Czech Academy of Sciences				Ana	M. Petrović	Geographical Institute "Jovan Cvijić" of the Serbian Academy of Sciences and Arts				Valentina	Vankova Nikolova	University of Mining and Geology "St. Ivan Rilski"
16	Self-heating magnetic nanoconstructs for theranostic applications							Jarmila	VILČÁKOVÁ	Tomas Bata University in Zlín	Martina	Kubovčíková	Slovak Academy of Sciences - SAS	Miloš	Ognjanović	University of Belgrade Vinča Institute of Nuclear Sciences,The Institute of				Hristo	Kolev	Bulgarian Academy of Sciences
17	Neolithic Mobilities: Morava river basin as a case study	Michael	BRANDL	Österreichische Akademie der Wissenschaften;	Solène	DENIS	CNRS	František	TRAMPOTA	Institute of Archaeology of the Czech Academy of Sciences												
18	Novel Magnetically Bistable Cobalt(II) and Iron(II) Hofmann-like Polymers for Surface Deposition				Lucie	Routaboul	Laboratoire de Chimie de Coordination CNRS CNRS & Université de Toulouse	Bohuslav	DRAHOŠ	Palacký Univerzity Olomouc	Ivan	Šalitroš	Slovak University of Technology in Bratislava (STU)									
19	Effective elimination of drug residues in water using photocatalytic degradation				Gilles	Ledoux	Institut Lumière Matière	Zdeněk	REMEŠ	Institute of Physics of the Czech Academy of Sciences	Júlia	Míčová	Slovak Academy of Sciences - SAS									
20	Nonthermal Phase transitions in 2D Gallium Sulphide for Applications in Next-Generation Devices	Kurt	HINGERL	Institute of Physics Belgrade; Johannes Kepler Universität Linz; University of Montenegro;										Vladimir	DAMLJANOVIĆ	Institute of Physics Belgrade	Predrag	MIRANOVIC	University of Montenegro			
21	Green manuring as a tool for improvement of soil microbiome and quality of vegetables in sustainable agriculture	Gabriele	BERG	Technische Universität Graz;				Martin	KOUDELA	Czech University of Life Sciences Prague	Miroslav	ŠLOSÁR	Slovak University of Agriculture in Nitra									
22	Extreme droughts and their impact on agriculture in selected continental climates of Europe	Josef	EITZINGER	Universität für Bodenkultur Wien;							Martin	GERA	Comenius University in Bratislava							Nina	Nikolova	Sofia University "St. Kliment Ohridski"
23	Identity Dynamics in the Danube Region (based on the example of Vidin, Lom and Kozloduy)							Lenka	JAKOUBKOVÁ BUDILOVÁ	Charles University	Ivan	Souček	Matej Bel University							Mira	Markova	Sofia University "St. Kliment Ohridski"
24	New generation networks based on hybrid configuration with integrated passive optical components (NetCom)	Dana	SEYRINGER	FH Vorarlberg;				Jan	LÁTAL	VSB - Technical University of Ostrava	Jozef	CHOVAN	Slovak Centre of Scientific and Technical Information									

УНИВЕРЗИТЕТ У БЕОГРАДУ
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Прегревица 118, 11080 Земун - Београд, Република Србија
Телефон: +381 11 3713000, Факс: +381 11 3162190, www.ipb.ac.rs
ПИБ: 100105980, Матични број: 07018029, Текући рачун: 205-66984-23

ПОТВРДА О РУКОВОЂЕЊУ ПОТПРОЈЕКТОМ

Овим потврђујем да је др Владимир Дамљановић, виши научни сарадник Института за физику Београд, руководио потпројектом „Предикција електронских дисперзија дводимензионалних материјала помоћу симетрије“, у оквиру пројекта „Физика уређених наноструктура и нових материјала у фотоници“, Министарства просвете науке и технолошког развоја Републике Србије под бројем ОИ 171005.

Руководилац пројекта ОИ 171005

Др Радош Гајић,
научни саветник
Институт за физику Београд

ПРЕДАВАЊА ПО ПОЗИВУ (ОСИМ НА КОНФЕРЕНЦИЈАМА) – ПОЗИВНА ПИСМА

JOHANNES KEPLER
UNIVERSITÄT LINZ

Prof. DI Dr. Kurt Hingerl
Zentrum für Oberflächen- und Nanoanalytik

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kurt.hingerl@jku.at

Sekretariat:
Elisabeth Mayrhofer
elisabeth.mayrhofer@jku.at
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To whom it may concern
Austrian Consulate in Serbia

University Belgrade
Dr. Vladimir Damljanovic
Institute of Physics Belgrade
Pregrevica 118, 11080 Belgrade, Serbia
http://www.ipb.ac.rs/

Linz, 2021-05-30

Re: Invitation for Lectures for Dr. Vladimir Damljanovic to Johannes Kepler University Linz

Dear Madam, dear Sir,

We hereby invite Dr Vladimir Damljanovic from University Belgrade, Institute of Physics to give in total 4 lectures from the 22nd of June 2021 to the 1st of July 2021 to the Johannes Kepler University, Austria, for Master and PhD students, as well as the JKU faculty. The trip expenses are all paid by JKU, and the JKU is fully reimbursed by the European Community in the frame of an ERASMUS+ project. The trip has to be in this time slot, because the project terminates in the summer 2021 and the summer term at JKU ends on the 1st of July. Afterwards no students will be present at the university.

We ask Vladimir to treat the following preferred topics:

1. An introductory lecture to mathematical group theory
2. An introductory lecture to group theory in crystalline solids
3. A lecture on application of group theory in magnetic solids
4. Applications of group theory to quantum mechanics.

We ask to issue the visa and all other documents for the trip in advance. If necessary, we can provide a copy of the ERASMUS+ grant agreement.

Johannes Kepler Universität · A-40[illegible] Altenberger Str. 69 · Zentrum für Oberflächen- und Nanoanalytik · Tel. (0732) [illegible]3-8841

Univ. Prof. Dr. Kurt Hingerl

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DW 5800

To whom it may concern
Austrian Consulate/Embassy in Serbia

University Belgrade
Dr. Vladimir Damljanovic
Institute of Physics Belgrade
Pregrevica 118, 11080 Belgrade, Serbia
http://www.ipb.ac.rs/

Linz, 2023-05-17

Re: Invitation for Lecture and Research at Johannes Kepler University Linz for Dr. Vladimir Damljanovic

Dear Madam, dear Sir,

I hereby invite Dr Vladimir Damljanovic from University Belgrade, Institute of Physics, to give one lecture and perform together with me and my group members research on "Group Theory" from the 1st of July 2023 to the 31st of July 2023 to the Johannes Kepler University, Austria. The trip has to be in this time slot, because the summer term ends, but neither I nor my coworkers are taking vacations.

Valdimir will not be formally employed by JKU, but all his expenses (hotel, trip, daily allowance) will be covered. I ask the Austrian Consulate or Embassy to issue the respective visum. A copy of the research fellowship assignment can be sent in addition, if necessary.

Univ. Prof. Dr. Kurt Hingerl

Johannes Kepler Universität
A-4040 Linz
Altenberger Str. 69
Tel. (0732) 2468-8841
Zentrum für Oberflächen- und Nanoanalytik

Gastkolloquium

Center for Surface- and Nanoanalytics Linz

Zentrum für Oberflächen- und Nanoanalytik

VLADIMIR DAMLIJANOVIC
Associate ResearchProfessor
Institute of Physics Belgrad
Centre for Solid State Physics and New Materials
damlja@ipb.ac.rs

Explanation of known and prediction of new quasiparticles in two dimensional materials using symmetry

The electronic dispersion – the form of a band structure in the vicinity of the Fermi energy, determines some of the material physical properties. Presence of Dirac cones near point-like band contacts at the corners of the Brillouin zone in graphene is one famous example.

Unmovable band touching points and lines are intact by symmetry preserving perturbations. Their positions in the reciprocal space and the dispersions (qusiparticles) in their vicinity (but unfortunately not their energy relative to the Fermi level) are determined by the very symmetry of the material. All quasiparticles of all possible symmetries of non-magnetic 2D materials near all unmovable band contacts have been recently determined [1]. In total nineteen quasiparticles were found [1], very few of them being discussed in the literature so far. In this talk our recently published results [1] are discussed together with a few ideas towards realization of 2D materials with the prescribed symmetry and with the right placement of the Fermi level. In this respect comments and discussions from the audience involved in the physics of 2D materials in the lab will be highly appreciated.

[1] V. Damljanović, N. Lazić: *"Electronic structures near unmovable nodal points and lines in two-dimensional materials"*, Journal of Physics A: Mathematical and Theoretical **56**, 215201 (2023).

Date: 12th of July 2023 Time: 10:15 a.m. Room: HS13

ДОКАЗИ О РЕЦЕНЗИЈАМА РАДОВА ЗА ЧАСОПИСЕ СА SCI ЛИСТЕ (на следеће четири стране)

Subject **Decision on a manuscript you reviewed: 2DM-[redacted]**
From 2D Materials <onbehalfof@manuscriptcentral.com>
To <2dmaterials@ioppublishing.org>
Reply-To <2dmaterials@ioppublishing.org>
Date 2024-03-11 17:15

Thank you for your reviewer report on this Paper being considered by 2D Materials. We have made a decision on this manuscript based on all the feedback received.

On this occasion our decision is: Moderate Revision

You can find all reviewer comments relating to this version of the manuscript below. If the comments refer to an attachment and you would like to read this, please let us know by replying to this email.

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We thank you for your assessment of this manuscript. We look forward to working with you again in the future.

Yours sincerely

David Murray

On behalf of:
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Reviewer comments on this manuscript

Referee: 1

COMMENTS TO THE [redacted]
The authors de[redacted]nk that adding
layer groups [redacted]ories for 2D
materials [redacted]
Minor re[redacted]
1. I wou[redacted]
2. May [redacted]
3. I cou[redacted]d it
seems [redacted]

Referee[redacted]

COMMENTS [redacted]
Fu et al. pres[redacted]k structure
with a 2D lattice[redacted] AA pa[redacted]compa[redacted]ith the
conventional space gr[redacted]e topic is interesting and will likely attract the attention of researchers from various fields. Based on these considerations, this manuscript can be published with minor revisions. Detailed comments that may improve the manuscript are listed below.
1. Does the classification method apply to the AA'-stacked bulk structure?
2. The manuscript uses a tolerance parameter of 0.1 Angstrom; how is it determined?
3. Layer groups of more than 15000 monolayer structures in the C2DB database are determined. Does it cover the

metastable 2D layers?
4. It would be better to further highlight the advantages of using the layer groups.

Referee: 3

COMMENTS TO
The author i stals and
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describe approach
for desc a to
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Letter ref: DEC.

Subject **How was your reviewing experience for Journal of Physics: Condensed Matter**

From Journal of Physics: Condensed Matter <onbehalfof@manuscriptcentral.com>

To <damlja@ipb.ac.rs>

Reply-To <jpcm@ioppublishing.org>

Date 2024-07-29 08:04

Dear Dr Damljanovic,

Re: "[redacted]"

Manuscript reference: JPCM-[redacted]

Thank for you reviewing this Paper for Journal of Physics: Condensed Matter.

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Please take a few minutes to complete a short survey by following the link below:

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Thank you for your help and we look forward to working with you again in the future.

Yours sincerely,

On behalf of:

Journal of Physics : Condensed Matter

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Letter reference: EREM:ThnkRev:S

Subject **How was your reviewing experience for Physica Scripta**
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To <damlja@ipb.ac.rs>
Reply-To <physscr@ioppublishing.org>
Date 2025-04-04 20:52

Dear Dr Damljanovic,

Re: "[redacted]"

Manuscript reference: PHYSSCR-[redacted]

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Thank you for your help and we look forward to working with you again in the future.

Yours sincerely,

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Letter reference: EREM:ThnkRev:S

This is to certify that

Dr Damljanovic

has achieved IOP trusted reviewer status
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of peer review competency.

Congratulations on this achievement
and thank you for your contribution to ensuring
quality and trust in peer review.

Antonia Seymour
Publishing Director
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ПИБ: 100105980, Матични број: 07018029, Текући рачун: 205-66984-23

ПОТВРДА О КОМЕНТОРСТВУ

Овим потврђујем да је др Владимир Дамљановић, виши научни сарадник Института за физику Београд, био коментор докторске тезе "Investigation of superconductivity in graphene and related materials using *ab-initio* methods", студенткиње Јелене Пешић, број индекса 2012/8037, одбрањене 04. 12. 2017. на Физичком факултету Универзитета у Београду. Ментор ове докторске тезе је др Радош Гајић.

Руководилац пројекта ОИ171005

Др Радош Гајић
научни саветник
Институт за физику Београд

UNIVERSITY OF BELGRADE
FACULTY OF PHYSICS

Jelena R. Pešić

INVESTIGATION OF SUPERCONDUCTIVITY IN GRAPHENE AND RELATED MATERIALS USING AB-INITIO METHODS

dissertation

Belgrade, 2017

UNIVERZITET U BEOGRADU
FIZIČKI FAKULTET

Jelena R. Pešić

ISTRAŽIVANJE SUPERPROVODNOSTI U GRAFENU I SLIČNIM MATERIJALIMA KORIŠĆENJEM AB-INITIO METODA

disertacija

Beograd, 2017

Mentor:

dr Radoš Gajić,
naučni savetnik,
Institut za fiziku, Univerzitet u Beogradu

Članovi komisije:

dr Kurt Hingerl
professor
Johannes Kepler University, Linz , Austria

dr Ivanka Milošević
redovni profesor
Fizički fakultet, Univerzitet u Beogradu

dr Milan Knežević
redovni profesor
Fizički fakultet, Univerzitet u Beogradu

dr Djordje Spasojević
vanredni profesor
Fizički fakultet, Univerzitet u Beogradu

dr Zoran Popović
naučni savetnik
INN Vinča, Univerzitet u Beogradu

Datum odbrane: 4. Decembar 2017

Acknowledgements

First I would like to thank my mentor Professor dr. Radoš Gajić. His continuous guidance, and trust have not only helped me to complete my thesis work, but also led me the way to be an open-minded scientist. His passion and dedication, as well as his high standards toward science have deeply impacted me, which would be a great benefit for my future academic career. I've learned not only about science, solid state physics, superconductivity and nanomaterials but as well about creative thinking. I consider myself fortunate to graduate under his guidance.

I am especially grateful to my colleague dr. Vladimir Damljanović, for great cooperation and support. His commitment and patience were invaluable to me. I am thankful for advice that originated from applications of symmetry to phonon- and band-structure calculations and for reading and commenting my thesis.

I am rather grateful to Professor dr. Kurt Hingerl from Johannes Kepler University, Linz, Austria for providing me access to their computational resources and for helpful discussions, comments and suggestions. I was very fortunate to coauthor several papers with Professor Hingerl and to engage in writing of few international projects of cooperation with him and his group. The long-term cooperation that exists between our groups was of a great value to me.

Also am very grateful to my colleagues: dr. Aleksandar Matković for teaching me the process of the micromechanical exfoliation and for many useful discussions about physics of the graphene, dr. Borislav Vasić and dr. Marko Spasenović for cooperation on several experimental publications and many helpful comments that improved my understanding of experimental physics, and dr. Igor Popov for many interesting explanations of fine particularities of DFT calculations. They all together have helped me many times during my studies through comments, advices, and ideas. I am greatful to dr. Aleksandar Milosavljević for including me in cooperation with University of Potsdam and their joint project on DNA origami structures.

I am grateful to Professor dr. Milivoj R. Belić from Texas A&M University at Qatar, for helpful discussions, comments and suggestions and for managing of QNRF project in past few years.

I would like to thank my colleagues and fellow PhD students Jasna Vujin, Tijana Tomašević-Ilić and Andrijana Šolajić who I am sharing with, not only, scientific work but PhD student life.

Also, I would like to thank all the colleagues from Graphene Laboratory as well

as, from the Center of Solid State Physics and New Materials, for their help and for creating a friendly work environment. Specially I would like to express my gratitude to the head of the center of Solid State Physics and New Materials Professor dr. Zoran V. Popović.

I would like to thank Professor dr. Nebojša Romčević for his support and for all the help in managing the industry project "Graphene based functional inks and printing of Radio-frequency identification tags". I would like to thank Professor dr. Radomir Žikić for support and wonderful cooperation throughout all time time of my research at Institute of Physics. I was engaged in writing several projects with Professor Žikić and his group which was great experience. Working with him and his group was always enlightening and pleasant experience.

I would like to thank members of committee, Professor dr. Ivanka Milošević, Professor dr. Milan Knežević, Professor dr. Zoran S. Popović and Professor dr. Djordje Spasojević.

I would like to thank Professor dr. Ilko Bald and dr. Julia Prinz from Univeristy of Potsdam, Germany. A fruitful collaboration between our research groups have resulted with several joint publications on graphene and organic nanostructures.

I am grateful to Professor dr. Emmanuele Cappeluti, Istituto dei Sistemi Complessi CNR, Italy for interesting discussions and advices about superconductivity. The ongoing cooperation with Professor Cappeluti was of great value to me and his passion for understanding superconductivity from both theoretical and experimental aspect, was always great inspiration to me.

I would like to thank Professor dr. Ivanka Holclajtner-Antunović for providing Raman spectra (Figures 1.10 and 1.11).

I would like to acknowledge financial support by the Serbian Ministry of Science through Projects OI 171005 and by Industry project "Graphene based functional inks and printing of Radio-frequency identification tags" (in period 2014-2015) and by project of bilateral cooperation with Republic of China titled "Crystal Growth and peculiar physics of normal state of ReBCO crystals" and by Qatar National Research Foundation through Project "Intercalated graphene: effects of substrates on functionalities", NPRP 7-665-1-125.

Last but not least, I would like to thank my family for unconditional support and understanding and to my significant other, Dušan, for love and patience and for believing in me. Their support and love gave me the strength to pursuit a scientific career.

ДОКАЗ ДА ЈЕ РАД У JOURNAL OF PHYSICS CONDENSED MATTER ИЗАБРАН ЗА HIGHLIGHTS – ПИСМО УРЕДНИКА

Subject **Your JPCM article has been selected for our 2017 highlights**
From Thomas Sharp <thomas.sharp@iop.org>
To damlja@ipb.ac.rs <damlja@ipb.ac.rs>
Date 2018-02-06 15:35

Dear authors,

Thank you for publishing your work in *Journal of Physics: Condensed Matter* in 2017. I am pleased to inform you that your article “Existence of semi-Dirac cones and symmetry of two-dimensional materials” has been included in the annual journal highlights, which are all free to read for the remainder of 2018. You can read the rest of the highlights articles from all our sections here.

We look forward to working with you again soon!

Best wishes,

Tom Sharp

Executive Editor

Journal of Physics: Condensed Matter

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