Списъци на научните трудове, изобретенията, цитатите и т.н., включени в минималните национални изисквания по групи показатели В-Е съгласно Правилника за прилагане на ЗРАС РБ

на доц. д-р Иван Христов Бъчваров
по конкурс за заемане на академична длъжност „професор“
по професионално направление 4.1. Физически науки,
специалност “Лазерна физика, физика на атомите, молекулите и плазмата и физика на вълновите процеси”,
за нуждите на лаборатория “Лазери с метални пари”, Институт по физика на твърдото тяло, Българска академия на науките,
обявена в Държавен вестник, бр. 107 от 12.12.2025 г.

1. **Научни публикации по конкурса – хабилитационен труд**

Група показатели В:

В4. Хабилитационен труд - научни публикации в издания, които са реферирани и индексирани в световноизвестни бази данни с научна информация (Web of Science и Scopus

№	*Група/ №*	*Заглавие*	*Група SJR*	*Водещ приносс*	*Бр. цит. **	*Точки*
1.	*B4.1.*	*Chuchumishev, D., Trifonov, A., Oreshkov, B., Xu, X.,* ***Buchvarov, I.,*** *„High-energy picosecond kHz optical parametric oscillator/amplifier tunable between 3 and 3.5 μm”, Applied Physics B: Lasers and Optics, vol 124, issue 7, 2018, DOI: 10.1007/s00340-018-7009-7* 2) и 3) кореспондиращ автор и рък. докторант	*I, Q1*	***Да***	*8*	*25*
2.	*B4.2.*	*Chuchumishev, D., Gaydardzhiev, A., Fiebig, T.,* ***Buchvarov, I.,*** *„Subnanosecond, mid-IR, 0.5 kHz periodically poled stoichiometric LiTaO 3 optical parametric oscillator with over 1 W average power”, Optics Letters, vol 38, issue 17, pp 3347-3349, 2013, DOI: 10.1364/OL.38.003347* 2) и 3) кореспондиращ автор и рък. докторант	*I, Q1*	***Да***	*8*	*25*
3.	*B4.3.*	*Chuchumishev, D., Marchev, G.,* ***Buchvarov, I.,*** *Pasiskevicius, V., Laurell, F., Petrov, V., „High-energy picosecond OPO based on PPKTP”, Laser Physics Letters, vol 10, issue 11, 2013, DOI: 10.1088/1612-2011/10/11/115404* 3) рък. докторант	*I, Q1*	***Да***	*9*	*25*
4.	*B4.4.*	*Gaydardzhiev, A., Chuchumishev, D., Draganov, D.,* ***Buchvarov, I.,*** *„High-energy kHz mid-IR tunable PPSLT-based OPO pumped at 1064 nm”, Quantum Electronics, vol 42, issue 6, pp 535-537, 2012,DOI: 10.1070/QE2012v042n06ABEH014781*	*I, Q2*	***Да***	*2*	*20*

		3) рък. докторант				
5.	*B4.5.*	*Iliev, H., **Buchvarov, I.,** Choi, S. Y., Kim, K., Rotermund, F., Griebner, U., Petrov, V. „Steady state mode-locking of a 1.34 μm Nd:YVO 4 laser using a single-walled carbon nanotube saturable absorber", Applied Physics B: Lasers and Optics, vol 106, issue 1, pp 1-4, 2012, DOI: 10.1007/s00340-011-4836-1*	*I, Q1*	***Да***	*11*	*25*
		3) рък. докторант				
6.	*B4.6.*	*Chuchumishev, D., Gaydardzhiev, A., Trifonov, A., **Buchvarov, I**., „Single-frequency MOPA system with near-diffraction-limited beam quality", Quantum Electronics, vol 42, issue 6, pp 528-530, 2012, DOI: 10.1070/QE2012v042n06ABEH014780*	*I, Q2*	***Да***	*7*	*20*
		3) рък. докторант				
7.	*B4.7.*	*Aleksandrov, V., Gluth, A., Petrov, V., **Buchvarov, I.**, Steinmeyer, G., Paajaste, J., Suomalainen, S., Harkonen, A., Guina, M., Mateos, Xavier, „Mode-locked Tm,Ho:KLu(WO4)2 laser at 2060 nm using InGaSb-based SESAMs", Optics Express, vol 23, issue 4, pp 4614-4619, 2015, DOI: 10.1364/OE.23.004614*	*I, Q1*	***Да***	*22*	*25*
		3) рък. докторант				
8.	*B4.8.*	*Aleksandrov, V., Gluth, A., Petrov, V., **Buchvarov, I**., Choi, S. Y., Kim, M. H., Rotermund, F., Mateos, X., Díaz, F., Griebner, U., „Tm,Ho:KLu(WO4)2 laser mode-locked near 2 μm by single-walled carbon nanotubes", Optics Express, vol 22, issue 22, pp 26872 -26877, 2014, DOI: 10.1364/OE.22.026872*	*I, Q1*	***Да***	*15*	*25*
		3) рък. докторант				
9.	*B4.9.*	*Iliev, H., Chuchumishev, D., **Buchvarov, I.,** Petrov, V., „Passive mode-locking of a diode-pumped Nd:YVO4 laser by intracavity SHG in PPKTP", Optics Express, vol 18, issue 6, pp 5754-5762, 2010, DOI: 10.1364/OE.18.005754*	*I, Q1*	***Да***	*32*	*25*
		2) и 3) кореспондиращ автор и рък. докторант				
10.	*B4.10.*	*Petrov, L.S. Georgiev, K., Velkov, D., Trifonov, A., Xu, X., Popmintchev, T. and **Buchvarov, I.,** „Multi-millijoule class, high repetition rate, Yb:CALYO regenerative amplifier with sub-130 fs pulses", Optcis Express, vol 31, issue 12, pp 18765-18772, 2023, DOI: 10.1364/OE.487923*	*I, Q1*	***Да***	*8*	*25*
		2) и 3) кореспондиращ автор и рък. докторант				
					Общ брой точки за показател B4:	***240***

2. Научни публикации – извън хабилитационен труд (група показатели Г):
Публикации извън хабилитационния труд, статии и пълни доклади на конференции (класификацията по квартили е според SCimago):

Група показатели Г:

Г7. Научни публикации в издания, които са реферирани и индексирани в световноизвестни бази данни с научна информация (Web of Science и Scopus), извън хабилитационния труд

№	*Група/ №*	*Заглавие*	*Група SJR*	*Водещ приносс*	*Бр. цит. ** *	*Точки*
11.	*Г7.1.*	*Oreshkov, B., Veronesi, S., Tonelli, M., di Lieto, A., Petrov, V., Griebner, U., Mateos, X.,* ***Buchvarov, I.,*** *„Tm3+:LiGdF4 laser, passively Q-switched with a Cr2+:ZnSe saturable absorber", IEEE Photonics Journal, vol 7, issue 3, 2015, DOI: 10.1109/JPHOT.2015.2427737* 3) рък. докторант	*I, Q1*	***Да***	*2*	*25*
12.	*Г7.2.*	*Oreshkov, B., Gianfrate, A., Veronesi, S., Petrov, V., Griebner, U., Yu H.,* ***Buchvarov I****., Parisi D., Tonelli M., „Generation of 40 ns laser pulses by a diode-pumped passively Q-switched Tm,Ho:YLF laser", Laser Physics Letters, vol 11, issue 11, 2014, DOI:10.1088/1612-2011/11/11/115801* 3) рък. докторант	*I, Q1*	***Да***	*5*	*25*
13.	*Г7.3.*	*Iglev, H, Trifonov, A, Thaller, A,* ***Buchvarov, I.,*** *Fiebig, T, Laubereau, A, „Photoionization dynamics of an aqueous iodide solution: The temperature dependence" - Chemical Physics Letters, vol 403, issue 1-3, pp 198-204, 2005, DOI: 10.1016/j.cplett.2005.01.014*	*I, Q1*		*44*	*25*
14.	*Г7.4.*	*Trifonov, A., Buchvarov, I., Wagenknecht, HA., Fiebig, T., „Real-time observation of hydrogen bond-assisted electron transfer to a DNA base", Chemical Physics Letters, vol 409, issue 4-6, 2005, DOI: 10.1016/j.cplett.2005.05.009*	*I, Q1*		*30*	*25*
15.	*Г7.5.*	*Najkov, K., Koleva, V., Pecovska-Gjorgjevich, M., Trifonov, A.,* ***Buchvarov, I****., Stefov, V., „Centrosymmetric or non-centrosymmetric space group for Ca2KH7(PO4)4·2H2O and Ca2(NH4)H7(PO4)4·2H2O: Second harmonic generation and vibrational spectroscopy studies", Journal of Molecular Structure, vol 1327, art. 141183, 2025, DOI: 10.1016/j.molstruc.2024.141183*	*I, Q2*		*-*	*20*
16.	*Г7.6.*	*Crotti, G., Akturk, M., Schirato, A., Vinel, V., Trifonov, A. A.,* ***Buchvarov, I****., Neshev, D. N., Cerullo, G., Maiuri, M., Della Valle, G., „Giant ultrafast dichroism and birefringence with active nonlocal metasurfaces", Light: Science and Applications, vol 13, issue 1, art. 204,2024, DOI: 10.1038/s41377-024-01545-8*	*I, Q1*		*11*	*25*
17.	*Г7.7.*	*Daskalova, A., Angelova, L., Filipov, E., Aceti, D., Mincheva, R., Carrete, X., Kerdjoudj, H.,*	*I, Q1*		*13*	*25*

		*Dubus, M., Trifonov, A., **Buchvarov, I.**, „Biomimetic hierarchical structuring of pla by ultra-short laser pulses for processing of tissue engineered matrices: Study of cellular and antibacterial behavior", Polymers, vol 15, issue 13, art. 2577, 2021, DOI: 10.3390/polym13152577*				
18.	*Г7.8.*	*Daskalova, A., Angelova, L., Trifonov, A., Lasgorceix, M., Hocquet, S., Minne, M., Declercq, H., Leriche, A., Aceti, D., **Buchvarov, I.,** „Development of femtosecond laser-engineered β-tricalcium phosphate (β-tcp) biomimetic templates for orthopaedic tissue engineering", Applied Sciences, vol 11, issue 6, art. 2565, 2021, DOI:10.3390/app11062565*	*I, Q2*		*1*	*20*
19.	*Г7.9.*	*Daskalova, A., Angelova, L., Carvalho, A., Trifonov, A., Nathala, C., Monteiro, F., **Buchvarov, I.,** „Effect of surface modification by femtosecond laser on zirconia based ceramics for screening of cell-surface interaction", Applied Surface Science, vol 513, art. 145914, 2020, DOI: 10.1016/j.apsusc.2020.145914*	*I, Q1*		*41*	*25*
20.	*Г7.10.*	*Yang, Ch., Liu, J., Wang, Z., Chen, P., Song, Q., Xu, J., Liu, P., Wei, Y., Xue, Y., Xu, X., Lebbou, K., **Buchvarov, I.,** Xu, J., „Enhanced 2.8 μm emission of Ho,Pr:CaYAlO4 crystal", Optical Materials, vol 152, art. 115407, 2024, DOI: 10.1016/j.optmat.2024.115407*	*I, Q1*		*3*	*25*
21.	*Г7.11.*	*Oreshkov, B., Chuchumishev, D., Iliev, H., Trifonov, A., Fiebig, T., Richter, C. and **Buchvarov, I.,** „52-mJ, kHz-Nd:YAG Laser with Diffraction Limited Output", CLEO: 2014, OSA Technical Digest (online) (Optica Publishing Group, 2014), 2014, DOI: 10.1364/CLEO_AT.2014.JW2A.84* 3) кореспондиращ автор рък. докторант	SJR без IF	***Да***	*1*	*10*
22.	*Г7.12.*	*Chuchumishev, D., Nagel, E., Nierlich, A., Philipov, S., Genadiev, T., Fiebig, T., **Buchvarov, I.** and Richter, C., „Mid-IR Laser Tissue Ablation with Little Collateral Damage Using a Laser Tunable in the Water Absorption Peak", CLEO: 2014, OSA Technical Digest (Optica Publishing Group, 2014), paper SM4P.7., 2014 DOI:10.1364/CLEO_SI.2014.SM4P.7* 3) рък. докторант	*SJR без IF*	***Да***	*1*	*10*
23.	*Г7.13.*	*Oreshkov, B., Aleksandrov, V., Iliev, H., Trifonov, A., and **Buchvarov, I.,** „1.5 kW burst of picosecond pulses with scalable energy and average power generated by diode pumped Nd-laser system", 2013, Conference on Lasers & Electro-Optics Europe & International Quantum Electronics Conference CLEO EUROPE/IQEC,*	*SJR без IF*	***Да***	*-*	*10*

		Munich, Germany, 2013, DOI: 10.1109/CLEOE-IQEC.2013.6800677 *2) и 3) кореспондиращ автор и рък. докторант*				
24.	*Г7.14.*	*Oreshkov, B., Alexandrov, V., Iliev, H., Trifonov, A., **Buchvarov, I**., „High Average Power, Kilowatt Bursts of 6 ps Pulses", CLEO: 2013, OSA Technical Digest (online) (Optical Society of America, 2013), paper CTh4I.6, DOI: 10.1364/CLEO_SI.2013.CTh4I.6* 2) и 3) кореспондиращ автор и рък. докторант	*SJR без IF*	***Да***	*-*	*10*
25.	*Г7.15.*	*Chuchumishev, D., Gaydardzhiev, A., Richter, C. and **Buchvarov, I.,** „5 mJ, sub-nanosecond PPSLT OPA at 0.5 kHz, tunable in the water absorption band at 3 microns", 2013 Conference on Lasers & Electro-Optics Europe & International Quantum Electronics Conference CLEO EUROPE/IQEC, Munich, Germany, 2013, DOI: 10.1109/CLEOE-IQEC.2013.6800867* 2) и 3) кореспондиращ автор и рък. докторант	*SJR без IF*	***Да***	*1*	*10*
26.	*Г7.16.*	*D. Chuchumishev, B. Oreshkov, A. Gaydardzhiev, A. Trifonov and **I. Buchvarov**, „Near diffraction limited pulses with 52-mJ, 1.2 ns at 0.5 kHz, generated by Nd-based MOPA", 2013 Conference on Lasers & Electro-Optics Europe & International Quantum Electronics Conference CLEO EUROPE/IQEC, Munich, Germany, 2013, DOI: 10.1109/CLEOE-IQEC.2013.* 2) и 3) кореспондиращ автор и рък. докторант	*SJR без IF*	***Да***	*-*	*10*
27.	*Г7.17.*	*D. Chuchumishev, G. Marchev, **I. Buchvarov,** V. Pasiskevicius, F. Laurell and V. Petrov, „Sub-ns OPO based on PPKTP with 1 mJ idler energy at 2.8 μm", 2013 Conference on Lasers & Electro-Optics Europe & International Quantum Electronics Conference CLEO EUROPE/IQEC, Munich, Germany, 2013, DOI: 10.1109/CLEOE-IQEC.2013.6800857* 2) и 3) кореспондиращ автор и рък. докторант	*SJR без IF*	***Да***	*1*	*10*
28.	*Г7.18.*	*Nierlich, A., Chuchumishev, D., Nagel, E., Marinova, K., Philipov, St., Fiebig, T., **Buchvarov, I.,** Richter, CP., „Efficient tissue ablation using a laser tunable in the water absorption band at 3 microns with little collateral damage", Proc. SPIE 8926, Photonic Therapeutics and Diagnostics X, 89262H (4 March 2014), 2014 DOI: 10.1117/12.2049339* 2) и 3) кореспондиращ автор и рък. докторант	*SJR без IF*		*1*	*10*
29.	*Г7.19.*	*Gaydardzhiev, A., Trifonov, A., Fiebig, T., and **Buchvarov, I.,** „High-power diode pumped Nd:YAG master oscillator power amplifier system", Proc. SPIE 7501, International*	*SJR без IF*	***Да***	*7*	*10*

		Conference on Ultrafast and Nonlinear Optics 2009, 750105, pp.1-8 , 2009, DOI: 10.1117/12.849859 3) рък. докторант				
30.	*Г7.20.*	*Chuchumishev, D., Iliev, H., Oreshkov, B., Trifonov, A., Stefanov, I., and* ***Buchvarov, I.,*** *„Self-seeded, Single-frequency Nd:YAG Q-switched Micro Laser with 1.7-ns, 1-mJ pulses at 1 kHz", in Advanced Solid State Lasers, OSA Technical Digest, (Optica Publishing Group, 2014), paper ATh2A.37, 2014, DOI: 10.1364/ASSL.2014.ATh2A.37* 3) рък. докторант	*SJR без IF*	***Да***	*-*	*10*
31.	*Г7.21.*	*Petrov, L. S., Velkov, D., Georgiev, K., Georgiev, S., Trifonov, A., Xu, X., Popmintchev, T., and* ***Buchvarov, I.,*** *„Net Gain Bandwidth Broadening in Yb:CALYO Amplifiers: Prospect for 30-100 fs multi-mJ Near Infrared Pulses", in Laser Congress 2024 (ASSL, LAC, LS&C) , Technical Digest Series (Optica Publishing Group, 2024), paper ATh2A.6., 2024, DOI: 10.1364/ASSL.2024.ATh2A.6* 2) и 3) кореспондиращ автор и рък. докторант	SJR без IF	***Да***	*-*	*10*
32.	*Г9.22.*	*Полезен модел заявка с номер BG/U/2014/2914,* *Заявители - "БИНОВЕЙШЪН" ЕООД, България* *Изобретатели –* ***Иван Христов Бъчваров****, Данаил Владимиоров Чучумишев, Христо Любомиров Илиев, Антон Александров Трифонов* *https://portal.bpo.bg/bpo-registers/utility-models/view/BG_U_2014_2914*				*25*
33.	*Г10.23*	*Публикувана заявка за Международна патентна заявка (PCT) ; World Intellectual Property Organization (WIPO)* ***International Patent Application (PCT) № WO 2009/042134 A3*** ***Изобретатели****: Fiebig, Torsten (US/US);* ***Buchvarov, Ivan (BG/BG)****; Trifonov, Anton Aleksandrov (BG/US).* *https://patentimages.storage.googleapis.com/97/16/40/e5809192b29549/WO2009042134A3.pdf*				*15*
					Общ брой точки за показател Г:	***390***

ИФТТ правила за водещ принос:
2) кореспондиращ автор и 3) ръководител докторант

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Бел. Със ** са отбелязани броя на цитиранията без автоцитати, забелязани на авторския профил на страницата на Scopus: https://www.scopus.com/pages/citationOverview?authorsIds=12755591400&origin=AuthorProfile

Водещ принос - „се доказва чрез някой от следните критерии: 1) първо място в списъка на авторите; 2) кореспондиращ автор или 3) ръководител на дипломант или докторант, когато дипломантът или докторантът е първи автор“

Списък на цитатиранията

B 1. Chuchumishev, D., Trifonov, A., Oreshkov, B., Xu, X., **Buchvarov, I.**, „High-energy picosecond kHz optical parametric oscillator/amplifier tunable between 3 and 3.5 μm”, Applied Physics B: Lasers and Optics, vol 124, issue 7, 2018, DOI: 10.1007/s00340-018-7009-7, **Q1**, водещ принос

1. Zhao, Chenjie and Yu, Yu and Yu, Hengzhe and Liu, Liping and Yin, Jian and Cao, Chen and Dang, Qifan and Yue, Jianfeng and Zhang, Yu and Li, Kai and Li, Yunfei and Wang, Yulei and Lü, Zhiwei,Short-Pulse 2 μm optical parametric oscillator based on stimulated Brillouin scattering technology,Infrared Physics and Technology,150, 2025, https://www.scopus.com/inward/record.uri?eid=2-s2.0-105011845060&doi=10.1016%2Fj.infrared.2025.106032&partnerID=40&md5=6de6782143b816b927b34d3faec3c422
2. Li, Zhenling and Zhang, Aonan and Wang, Yunping and Liu, Ke and Wang, Xiaojun,High brightness widely tunable, hundred picosecond mid-IR MgO:PPLN optical parametric oscillator with short cavity,Laser Physics,34, 2024, https://www.scopus.com/inward/record.uri?eid=2-s2.0-85188053310&doi=10.1088%2F1555-6611%2Fad30f7&partnerID=40&md5=8d3c3ff891d4e8d3eb0ef58c8810cda0
3. Palatnikov, Mikhail N. and Sidorov, Nikolay Vasilievich and Pyatyshev, Alexander Yu and Skrabatun, A. V.,Comparison of Raman Spectra of Optically Nonlinear LiTaO3:Cr3+ (0.005 wt%) Crystal Laser Excited in Visible (532 nm) and Near-IR (785 nm) Areas,Photonics,10, 2023, https://www.scopus.com/inward/record.uri?eid=2-s2.0-85153753786&doi=10.3390%2Fphotonics10040439&partnerID=40&md5=86c0046032184f9e41950217b42ac673
4. Kistenev, Yury V. and Cuisset, Arnaud and Romanovskii, Oleg A. and Zherdeva, Aleksandra V.,A Study of Trace Atmospheric Gases at the Water–Atmosphere Interface Using Remote and Local IR Laser Gas Analysis: A Review,Atmospheric and Oceanic Optics,35,S17 – S29, 2022, https://www.scopus.com/inward/record.uri?eid=2-s2.0-85149331824&doi=10.1134%2FS1024856023010074&partnerID=40&md5=02f1b188af1e4ea2a0602eacba859ccf
5. Yang, Jinfeng and Shang, Jifang and Li, Qinglian and Mao, Qianhui and Hao, Haoshan and Sun, Jun,Study on High Temperature Lithium-rich Diffusion Process of Lithium Tantalate Crystals; 钽酸锂晶体高温富锂扩散工艺的研究,Rengong Jingti Xuebao/Journal of Synthetic Crystals,49,1010 – 1015, 2020,

https://www.scopus.com/inward/record.uri?eid=2-s2.0-85088465351&partnerID=40&md5=d402743245241e6d70453264eae4f47f

6. Jobin, Fŕederic and Paradis, Pascal and Fortin, Vincent and Magnan-Saucier, Śebastien and Bernier, Martin and Valle´e, Re´al,1.4 W in-band pumped Dy3+-doped gain-switched fiber laser at 3.24 µm,Optics Letters,45,5028 – 5031, 2020, https://www.scopus.com/inward/record.uri?eid=2-s2.0-85091051467&doi=10.1364%2FOL.398425&partnerID=40&md5=ee9e481550c90dcaf197b3cafa420311
7. Xu, Liwei and Li, Yingyi and Ju, Youlun,91.1 kW, 5.3 ns compact mid-infrared optical parametric amplification based on PPMgLN,Results in Physics,15, 2019 https://www.scopus.com/inward/record.uri?eid=2-s2.0-85074490679&doi=10.1016%2Fj.rinp.2019.102783&partnerID=40&md5=0a942df4927401dce3985675cb4aa04d
8. Kolker, Dmitry B. and Sherstov, Igor V. and Kostyukova, Nadezhda Yu and Boyko, A. A. and Kistenev, Yury V. and Nyushkov, Boris N. and Zenov, Konstantin G. and Shadrintseva, A. G. and Tretyakova, N. N.,Broadband tunable source of mid-IR laser radiation for photoacoustic spectroscopy,Quantum Electronics,49,29 – 34, 2019, https://www.scopus.com/inward/record.uri?eid=2-s2.0-85062286495&doi=10.1070%2FQEL16932&partnerID=40&md5=187fc001031d99d676a085bed657b645

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