

**INSTITUTE OF ROBOTICS "ST. AP. AND GOSPELLER MATTHEW",
BULGARIAN ACADEMY OF SCIENCES,
LABORATORY OF UNMANNED ROBOTIC SYSTEMS (URSlab)**

PUBLICATIONS

(2022 – 2024)

Revision: 16.08.2025.

Monographs

Alexandrov, A. (2023). Wireless sensor systems. Architecture and Communication Protocols". Academic Publishing House "Za bukвите - O pismenih" of the University of Library Studies and Information Technologies - Sofia (UNIBIT), p. 270, ISBN:978-619-185-636-7 (In Bulgarian).

Chehlarova, N. (2023). Research of the e-business system in the context of increasing the digital competences of consumers. Tonediko. Sofia. p. 170. ISBN 978-619-91492-8-7 (In Bulgarian)

Madzharov A. Gyroscopes and Inertial Navigation Systems, D. Mitropolia: Georgi Benkovski Bulgarian Air Force Academy (2000), p. 422, ISBN 954-713-046-3 (in Bulgarian)

Books

Madzharov A. (2013). Structure and application of satellite navigation systems. V. Tarnovo: Vasil Levski National Military University, 177 p., ISBN 978-954-753-168-0 (in Bulgarian)

Indexed publications in Web of Science and Scopus

Indexed in Q1

1. Chavdarov, I., Yovchev, K., Miteva, L., Stefanov, A., Nedanovski, D. A strategy for controlling motions related to sensory information in a walking robot Big Foot. Sensors, 23, 3, MDPI, 2023, ISSN:1424-8220, DOI:10.3390/s23031506, 1506. SJR (Scopus):0.8, JCR-IF (Web of Science):3.847 **Q1, it does not top the rankings (Scopus)**

Indexed in Q2

1. Bogdanova, G, Todorov, T, Noev, N, Sabev, N, **Chehlarova, N**, Todorova-Ekmekci, M, Krastev, A. An ecosystem for the provision of digital accessibility for people with special needs. Information, 15, 6, Multidisciplinary Digital Publishing Institute (MDPI), 2024,

- ISSN:2078-2489, DOI:10.3390/info15060315, 1-11. SJR (Scopus):0.703, JCR-IF (Web of Science):2.4 **Q2 (Web of Science)** [Link](#)
2. **Chehlarova, N.** Didactic materials for counting isosceles trapezoids by visually impaired people. *Symmetry: Culture and Science*, 35, 4, Symmetrion, 2024, ISSN:0865-4824, 2226-1877, DOI:https://doi.org/10.26830/symmetry_2024_4_407, 407-416. SJR (Scopus):0.189, JCR-IF (Web of Science):0.2 **Q2 (Scopus)** [Link](#)
 3. Dimitrova, M., **Chehlarova, N., Madzharov, A.**, Krastev, A., Chavdarov, I. Psychophysics of user acceptance of social cyber-physical systems. *Frontiers in Robotics and AI, Section Human-Robot Interaction*, 11, Frontiers Media S.A., 2024, ISSN:2296-9144, DOI:10.3389/frobt.2024.1414853, 1-8. SJR (Scopus):0.809, JCR-IF (Web of Science):3 **Q2 (Scopus)** [Link](#)
 4. **Chehlarova, N.**, Gachev, G. Figures with an axis of symmetry with Photon Robot. *Symmetry: Culture and Science*, 34, 3, Symmetrion, 2023, ISSN:2226-1877, DOI:https://doi.org/10.26830/symmetry_2023_3_333, 333-346. SJR (Scopus):0.193, JCR-IF (Web of Science):0.1 **Q2 (Scopus)** [Link](#)

Indexed in Q3

1. del Estad Herrero, A., Apter, N., **Hristozov, S.** A Parametric Comparison of JARUS SORA 2.0 and 2.5 Ground Risk Models. 14th EASN International Conference on "Innovation in Aviation and Space towards sustainability today & tomorrow", 90, 1, Engineering Proceedings, 2025, ISSN:2673-4591, DOI:<https://doi.org/10.3390/engproc2025090047>, SJR (Scopus):0.205 **Q3 (Scopus)** [Link](#)

Indexed in Q4

1. Dimitrova, M., **Chehlarova, N.**, Bogdanova, G., Krastev, A., Sabev, N., Noev, N. Math Lesson on Counting 3D Printed Geometric Shapes in an Inclusive Class. In: Auer, M.E., Rüütman, T. (eds) *Futureproofing Engineering Education for Global Responsibility. ICL 2024. Lecture Notes in Networks and Systems*, 1281, Springer, Cham, 2025, ISBN:978-3-031-83519-3, DOI:10.1007/978-3-031-83520-9_32, 335-344. SJR (Scopus):0.166 **Q4 (Scopus)** [Link](#)
5. Dimitrova, M., Kostova, S., Chavdarov, I., Krastev, A., **Chehlarova, N., Madzharov, A.** Psychosocial and Psychophysical Aspects of the Interaction with Humanoid Robots: Implications for Education. *ACM International Conference Proceeding Series*, 25th International Conference on Computer Systems and Technologies, CompSysTech 2024, ACM, 2024, ISBN:979-8-4007-1684-3/24/06, DOI:10.1145/3674912.3674951, 1-9. SJR (Scopus):0.253 **Q4 (Scopus)** [Link](#)
2. **Chehlarova, N.**, Bogdanova, G., Noev, N., Dimitrova, M.. Counting Triangles with 3D Printed Didactic Materials for People with Visual Impairment. *Lecture Notes in Networks and Systems (LNNS), Methodologies and Intelligent Systems for Technology Enhanced Learning*, 14th International Conference, 1171, Springer, Cham, 2024, ISSN:978-3-031-73538-7, DOI:https://doi.org/10.1007/978-3-031-73538-7_20, 221-230. SJR (Scopus):0.171 **Q4 (Scopus)** [Link](#)

3. **Yovchev, K**, Miteva, L. Real-time Trajectory Replanning for Dynamic Obstacles Avoidance for Robotics Manipulators. 23rd International Conference on Computer Systems and Technologies, CompSysTech 2022, ACM International Conference Proceeding Series, 2022, ISBN:978-1-4503-9644-8, DOI:<https://doi.org/10.1145/3546118.3546135>, 45-50. SJR (Scopus):0.232 **Q4 (Scopus)** [Link](#) \
4. **Gaidarski I.**, Kutinchev P.. An approach for constructing a simulation model for dynamic analysis of Information Security System. Lecture Notes in Networks and Systems,, 418, vol.418, Springer, 2022, ISBN:978-3-030-96308-8, ISSN:2367-3370, DOI:<https://doi.org/10.1007/978-3-030-96308-8>, 518-526. SJR (Scopus):0.15 **Q4 (Scopus)** [Link](#)
5. **Alexandrov, A.** Implementation of Fuzzy Logic Neural Networks in QBER Optimization Process". Lecture Notes in Networks and Systems. Q4, 2, 1529, Springer International Publishing AG, 2025, ISBN:978-3-031-97992-7, ISSN:2367-3370, DOI:doi.org/10.1007/978-3-031-97992-7, 279-287. SJR (Scopus):0.166 **Q4 (Scopus)** [Линк](#)
6. Miteva, L, **Yovchev, K, Chavdarov, I.** Planning Orientation Change of the End-effector of State Space Constrained Redundant Robotic Manipulators. Computer Systems and Technologies, CompSysTech 2022 Proceedings, ACM International Conference Proceeding Series, Association for Computing Machinery (ACM,) New York, NY 10019-7434, USA, 2022, ISBN:978-1-4503-9644-8, DOI:<https://doi.org/10.1145/3546118.3546136>, 51-56. SJR (Scopus):0.232 **Q4 (Scopus)**
7. **Alexandrov, A.** Multicriteria Optimization Based on the Fuzzy Sugeno Logic Method. Lecture Notes in Networks and Systems, Q4, 1, 1528, Springer International Publishing AG, 2025, ISBN:978-3-031-97984-2, ISSN:2367-3370, DOI:doi.org/10.1007/978-3-031-97985-9, 707-714. SJR (Scopus):0.166 **Q4 (Scopus)** [Линк](#)
8. Stanev, H., **Hristozov, S.** Applicability of JARUS SORA to State UAS Operations in Disaster Relief. Proceedings of the 15th International Scientific and Practical Conference., 4, Environment. Technology. Resources., 2024, ISBN:978-171389957-0, ISSN:Print 1691-5402, Online 2256-070X, DOI:10.17770/etr2024vol4.8195, 244-250 SJR (Scopus): **0.167 Q4 (Scopus)** [Линк](#)
9. **Gaidarski, I, Chehlarova, N.** Management approaches and application areas of information security in organizations. Proceedings of the 15th International Scientific and Practical Conference on June 27th–28th, 2024. Volume II, II, Vol 2 (2024), Rezekne Academy of Technologies, Rezekne, Latvia, 2024, ISSN:1691-5402, 2256-070X, 110-113 SJR (Scopus): **0.167 Q4 (Scopus)** [Линк](#)
10. Yoshinov, R, Kotseva, M, **Madzharov, A, Chehlarova, N.** Implying cybersecurity skills for public administration employees. 15th International Scientific and Practical Conference on Environment. Technology. Resources, ETR 2024, Rezekne, 4, Rezekne Higher Education Institution, 2024, ISBN:978-171389957-0, ISSN:Print 1691-5402, Online 2256-070X, DOI:<https://doi.org/10.17770/etr2024vol4.8238>, 300-304 SJR (Scopus): **0.167 Q4 (Scopus)** [Линк](#)
11. Yoshinov, R, Kotseva, M, **Madzharov, A, Chehlarova, N.** Skills and attitudes towards using AI based chatbots. 15th International Scientific and Practical Conference on Environment. Technology. Resources, ETR 2024, Rezekne, 2, Rezekne Higher Education

Institution, 2024, ISBN:978-171389957-0, ISSN:Print 1691-5402, Online 2256-070X, DOI:<https://doi.org/10.17770/etr2024vol2.8064>, 138-142 SJR (Scopus): **0.167 Q4 (Scopus)** [Линк](#)

12. **Alexandrov, A.** Reducing the WSN's communication overhead by the SD-SPDZ encryption protocol. BISEC 2023 The Fourteenth International Conference on Business Information Security (BISEC'2023), Vol-3676, <http://CEUR-WS.org>, 2024, ISSN:1613-0073, DOI:<https://doi.org/10.5281/zenodo.11196843>, 50-57. SJR (Scopus): **0.166 Q4 (Scopus)** [Линк](#)
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15. **Alexandrov, A.** LSTM-RNN method for Anomaly-Based Intrusion Detection Systems. Vol-3971, CEUR-WS, 2025, ISSN:1613-0073, 17-33. SJR (Scopus): **0.166 Q4 (Scopus)** [Линк](#)
16. **Yovchev, K.** Miteva, L, Chikurtev, D. Algorithm for Assigning a Robot to Capture an Object From a Production Pipeline. AIP Conference Proceedings, 2980, 1, 2024, ISSN:0094-243X, DOI:10.1063/5.0184210, 020006. SJR (Scopus): **0.153 Q4 (Scopus)** [Линк](#)

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1. **Yovchev, K.** Miteva, L. Approaches for Object Detection and Depth Estimation in Digital Images. ACM International Conference Proceeding Series, ACM, New York, NY, USA, 2024, ISBN:979-8-4007-1684-3, DOI:<https://doi.org/10.1145/3674912.3674932>, SJR (Scopus):0.25 **SJR, non-Q category (Scopus)** [Линк](#)

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1. Bogdanova, G, Todorov, T, Noev, N, Tomov, Zh, **Chehlarova, N.** Model of computer game at education of visually impaired people. IEEE 21st International Conference on Information Technology Based Higher Education and Training (ITHET 2024). Special Theme: The Future of Education, Powered by IT and AI, IEEE, 2024, DOI:doi:10.1109/ITHET61869.2024.10837626., 1-7 **Without JCR or SJR – indexed in WoS or Scopus (Scopus)** [Линк](#)
2. **Gaidarski, I.** Djambazova, E., Terzieva, V. Ilchev. S. Aspects of Dependability and Security in Integrated Intelligent Educational Environments. 2024 IEEE 12th International Conference on Intelligent Systems (IS) proceedings, IEEE, 2024, ISBN:979-8-3503-5099-

- 9, DOI:10.1109/IS61756.2024.10705223., 1-6 **Without JCR or SJR – indexed in WoS or Scopus (Scopus)** [Link](#)
3. Chavdarov, I., **Yovchev, K.**, Naydenov, B., Hrosinkov, V. 3D Printed DELTA Robot for Educational Purposes. 2024 International Conference on Software, Telecommunications and Computer Networks (SoftCOM), Croatia, IEEE, 2024, ISSN:1847-358X, DOI:10.23919/SoftCOM62040.2024.10721779, 1-6 **Without JCR or SJR – indexed in WoS or Scopus (IEEE Xplore)** [Link](#)
4. Dimitrova, M., **Chehlarova, N.**, **Madzharov, A.**, Krastev, A.. A Psychophysical View on User Acceptance of Robotic Systems for Social Applications. IEEE 21st International Conference on Information Technology Based Higher Education and Training (ITHET 2024). Special Theme: The Future of Education, Powered by IT and AIProc. IEETeL 2024: 15th International Workshop on Interactive Environments and Emerging Technologies for eLearning, IEEE, IEEE, 2024, DOI:10.1109/ITHET61869.2024.10837594, 1-6 **Without JCR or SJR – indexed in WoS or Scopus (Scopus)** [Link](#)
5. **Gaidarski I.** Application of UML descriptive modeling techniques in Model Driven Engineering of Information Security System. Proceedings of The International Conference “Big Data, Knowledge and Control Systems Engineering” (BdKCSE’2023)), IEEE Digital Library, 2023, ISBN:979-8-3503-1325-3, DOI:10.1109/BdKCSE59280.2023.10339781, 1-5 **Without JCR or SJR – indexed in WoS or Scopus (Scopus)** [Link](#)
6. Chavdarov, I, Naydenov, B, **Yovchev, K.**, Miteva, L. Topology optimization of an assembled 3D printed robot. 30th International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2022), 2022, ISSN:ISSN: 1847-358X, DOI:DOI: 10.23919/SoftCOM55329.2022.9911410 **Without JCR or SJR – indexed in WoS or Scopus (IEEE Xplore)** [Link](#)
7. Miteva, L, **Yovchev, K.**, Chikurtev, D. Software and Hardware Infrastructure for Research and Development of Intelligent Control for Robotic Manipulators. 2022 XXXI International Scientific Conference Electronics (ET), IEEE, 2022, ISBN:978-1-6654-9878-4, DOI:10.1109/ET55967.2022.9920270 **Without JCR or SJR – indexed in WoS or Scopus (IEEE Xplore)** [Link](#)

Publications in other databases

1. **Alexandrov, A.** Design and Architecture of wireless ECG monitoring system. 2024-th International Conference "ROBOTICS & MEHATRONICS" 29 – 30 October, 2024, Sofia, Bulgaria, 2024, ISSN:2603-469, DOI:https://doi.org/10.5281/zenodo.14074924 [Link](#)
2. **Alexandrov, A.** Mathematical Model and Kinematic Analysis of Rocker-Bogie Suspension Design for UGV Applications. Complex Control Systems, 9, Bulgarian Academy of Sciences-Institute of Robotics, 2025, ISSN:2603-4697(Online), DOI:https://doi.org/10.5281/zenodo.15090498, 1-6 [Link](#)
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4. **Chehlarova, N**, Gachev, G. Application of 3D printed models for counting prisms in solids. ARTTE. Applied Researches in Technics, Technologies and Education, 12, 3, Journal of the Faculty of Technics and Technologies, Trakia University, 2024, ISSN:1314-8788 (print), 1314-8796 (online), DOI:10.15547/artte.2024.03.006, 169-175 [Link](#)
5. **Chehlarova, N**, Gecheva, N, Chehlarova, K. Construction of types of quadrilaterals with a six-legged educational robot. Science Series "Innovative STEM Education", 6, Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, 2024, ISSN:2683-1333, DOI:https://doi.org/10.55630/STEM.2024.0607, 76-84 [Link](#)
6. Chehlarova, K, **Chehlarova, N**, Gachev, G. 360-degree photos in the Virtual Mathematics Laboratory. ARTTE. Applied Researches in Technics, Technologies and Education, 12, 3, Journal of the Faculty of Technics and Technologies, Trakia University, 2024, ISSN:1314-8788 (print), 1314-8796 (online), DOI:10.15547/artte.2024.03.005, 163-168 [Link](#)
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11. **Madzharov, A., Hristozov, S., Chehlarova, N., Georgiev, R., Gaidarski, I., Alexandrov, A.** Design of an Unmanned Helicopter System for Collecting and Processing of Geographical Information. Complex Control Systems, Volume 7, Bulgarian Academy of Sciences - Institute of Robotics, 2024, ISSN:2603-4697 [Link](#)
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25. **Chehlarova, N.** Short training for working with electronic signature. Bulgarian electronic scientific journal “Business Management“. 1, 2022, ISSN 2738-7399, 35-45 (In Bugarian) [Link](#)