ИР - БАН
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STATEMENT

on the competition for the academic position of Associate Professor in
5.2 Electrical Engineering, Electronics and Automation (Magnetic Field Sensing)
announced in the *State Gazette*, No. 51 of 5 June 2026
with candidate: Dr. Svetoslav Atanasov Noykov, Chief Assistant Professor
Member of the Scientific Jury: Petko Hristov Petkov, D.Sc., Professor

1. General Assessment of the Candidate's Research and Applied Research Activities

The sole candidate in the competition for the academic position of Associate Professor in 5.2 Electrical Engineering, Electronics and Automation (Magnetic Field Sensing) at the Institute of Robotics of the Bulgarian Academy of Sciences (BAS), Sofia, is Dr. Eng. Svetoslav Atanasov Noykov, Chief Assistant Professor in the SITRM Section at the Institute of Robotics. The candidate participates in the competition with 37 works, of which 10 are submitted as equivalent to a monograph, 9 are scientific publications in journals and/or proceedings that are refereed and indexed in internationally recognized databases, and 18 are papers presented at scientific conferences. The title of the monograph is "New Structural and Circuit Solutions in the Field of Two-Dimensional and Three-Dimensional Vector Hall Magnetometers", and it is directly related to the subject of the competition. The topic of the dissertation for the acquisition of the scientific and educational degree "Doctor" is also within the field of the competition. The content of the submitted works demonstrates that the candidate is highly qualified and works successfully in the fields of sensor technology, automatic control, and electronics. Most of the publications are related to the development of specific electronic devices, demonstrating his capacity for applied research and development activities. The candidate is a co-inventor of 19 patents and has received three certificates of recognition for inventive achievements and results. Chief Assistant Professor Noykov has participated in the preparation, management, coordination, and implementation of a number of research and applied projects and tasks, 30 of which are related to the activities of the Institute of Robotics of the BAS and its predecessor organizations. He has also supervised one doctoral student through to the successful completion of the doctoral degree.

2. Main Scientific and Scientific-Applied Contributions

The candidate's contributions may be divided into contributions contained in the publications submitted as equivalent to a monographic work and contributions outside the habilitation report on scientific contributions. The contributions related to the monographic work are scientific, scientific-applied, and applied in nature and concern the development of 2D and 3D magnetometers based on the Hall effect. The proposed methods and circuit solutions have been developed into fully operational devices that can be applied to the measurement of magnetic

fields and temperature. The contributions outside the habilitation report are related to the development of a control system for a three-wheeled robot, as well as to the development of algorithms for controlling the motion of a mobile robot when investigating environments containing unknown objects. Several modules intended for an experimental setup for the investigation of magnetic materials have also been developed and experimentally tested. Circuit solutions have additionally been proposed for processing the acquired signals in the presence of drift and noise. I consider the candidate's contributions to be fully sufficient for appointment to the academic position of Associate Professor.

3. Significance of the Contributions to Science and Practice

The research and development of magnetometers based on the Hall effect are of significant importance for the development of robots for various applications. The candidate's contributions in this field characterize him as an accomplished researcher who strives to obtain new scientific results and implement them in specific products and devices. A sufficient number of publications with scientific, scientific-applied, and applied contributions are available. The candidate has also participated in the development of a number of research and applied projects and tasks. Information has been provided on 22 citations of the candidate's publications by foreign authors.All requirements under the criteria for holding the academic position of Associate Professor have been met, with the quantitative requirements exceeded.

4. Critical Remarks and Recommendations

None.

CONCLUSION

Based on the contributions presented in the candidate's scientific works, as well as his successful research and applied activities, I strongly recommend that Chief Assistant Professor Svetoslav Atanasov Noykov be appointed to the academic position of Associate Professor in the professional field Electrical Engineering, Electronics and Automation, in the area of Magnetic Field Sensing.

28 September 2026

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/Prof. Petko Petkov, D.Sc./