

REVIEW

for Chief Assist. Kristina Ivanova Dineva, PhD

in a competition for the academic position of "Associate Professor"

by professional field 4.6 Informatics and Computer Science, speciality "Informatics".

Reviewer: Acad. Ivan Petkov Popchev

By order No. 9 Sofia, 10.01.2025 of corresponding – member Sv. Margenov in connection with the announced competition for the **academic position "Associate Professor"** in SG no. 97/15.11.2024 in the professional field 4.6 Informatics and Computer Science, speciality "Informatics" I have been appointed a Scientific jury member.

As a reviewer, I have received all included in the application 15 documents to the Director of ICT-BAS for admission to participate in the competition.

According to ADASRB, Regulation of application of the Regulatory of the specific conditions for academic scientific degree and holding academic positions at ICT, candidates for associate professor must meet certain conditions and requirements.

Art. 24 (1) The applicants to occupy the academic position of Associate Professor must meet the following conditions:

1. to have been awarded the educational and scientific degree of Doctor...;

2. for minimum two years:

a) to have occupies the academic position of Assistant, Chief Assistant.

3. to have presented a published monograph or equivalent publications in specialized scientific issued or ..., which do not reproduce those presented for awarding the educational and scientific degree of Doctor and for awarding of the scientific degree of Doctor of Science.

4. to meet the minimum national refinements under Art.2b, Para. 2 and 3, respectively the requirements under Art. 2b, Para. 5.

5. to have no plagiarism proven as per the legally established order in the scientific works.

(2) The academic position of Associate Professor shall be occupied on the basis of a competition and election.

(3) A competition for occupying the academic position of Associate Professor shall be opened, if it is possible the relevant teaching and research load to be provided, according to the relevant rules of procedure of the higher school or scientific organization.

Art. 26 (1) The candidates shall submit a reference on the fulfillment of the minimum national requirements under Art. 2b, Paras. 2 and 3, the requirements under Art. 2b, Para. 5, respectively, and a reference of the original scientific contributions to which shall be attached the relevant evidence laid down in this Act, in the Regulations for its implementation, and the Regulations of the higher schools and of the scientific organizations.

Ch. Assist. Kristina Dineva, PhD **meets the requirements of Art.24 (1).1** as she is a 'Doctor'. She holds Diploma No. 001323, issued January 05, 2021.

Ch. Assist. Kristina Dineva, PhD **meets the requirements of Art. 24 (1).2a**, as evidenced by an official letter from ICT certifying that Kristina Dineva, as a Ch. Assis has 3 years and 3 months of experience.

Ch. Assist. Kristina Ivanova Dineva, PhD **meets the requirements of Art. 24 (1).3** as she has presented 3 publications in specialized scientific issues (B-1, B-2, and W-3), which do not repeat those presented for obtaining the educational and scientific degree 'Doctor'.

In the documents for the competition there is a "**List of all citations**" (2017 – 2025) are included **258 citations of 22 publications**.

The reviewer considers that Ch. Assist Dr. Kristina Dineva **meets the requirements of Article 24(1).4**, as she fulfills **the minimum national requirements** under Article 2b, paragraphs 2 and 3, as well as the requirements under Article 2b, paragraph 5, and the **regulations of the specific conditions of IICT**. According to **Article 24(1).5**, **no plagiarism has been proven in her scientific works under the legally established procedure**.

Summaries of scientific publications (17 pcs) have been presented in Bulgarian and English.

In the '**Project Participation Report**' there are 3 projects, including a job description dated 30.08.2024 for Kristina Dineva as senior expert at the institute for the COALition project, funded by the European Commission under the 'Horizon Europe/Widening' program.

A '**List of publications for participation in the competition for the Academic Position of Associate Professor**' has been presented, which includes **17 publications**.

A brief analysis of the presented 17 publications in English shows the following:

- **4 publications** are in journals and series with an **IF** (No. B-1 - Q2, B-2 - Q1, B-3 - Q1, and G0 - Q1);
- **1 publication** is in a series with an **SJR** (No. Γ-1);
- **9 publications** are in conference proceedings with an **SJR** (No. Γ-2, Γ-3, Γ-4, Γ-5, Γ-6, Γ-7, Γ-8, Γ-9, and Γ-10);
- **3 publications** are in conference proceedings (No. Γ0-1, Γ0-2, and Γ0-3).

All publications are co-authored.

In 13 of the publications, Dr. K. Dineva is the first co-author.

In the competition documents, there is a "**Reference for the original scientific and applied scientific contributions**" in the works submitted for participation in the competition for the academic position of "Associate Professor".

According to the "Reference," the presented works contain research, results, and contributions in the following thematic areas:

1. **Cloud technologies and Infrastructures** – 3 publications (No. B-1, B-2, and Γ-2).
2. **Machine learning and artificial Intelligence** – 8 publications (No. Γ0, Γ-3, Γ-4, Γ-5, Γ-6, Γ-7, Γ-8, Γ-9, and Γ-10).
3. **Architecture and Information systems, and Internet of Things (IoT)** – 6 publications (Nos. B-3, Γ-1, Γ-5, Γ0-1, Γ0-2, and Γ0-3).

For each thematic area, key highlights and a summary are provided.

Five scientific contributions and six applied scientific contributions have been formulated with the corresponding publications, without being defined as **original**.

According to Article 26(1) of the Academic staff development, a "**reference for the original scientific contributions**" with the corresponding evidence has not been provided.

1. Architecture of an intelligent monitoring system for livestock farming with a mechanism for transmitting heterogeneous data from IoT devices to cloud services. **(№ B-1 - IF Q2, SJR/24)**
2. Model for machine learning in the AWS cloud platform for classifying the health status of dairy cows using data from IoT devices and the environment. **(№ Г-0 – IF Q1, SJR/5)**
3. Model of a scalable IoT architecture with various communication protocols, centralized device management, and big data processing. **(№ B-2 – IF Q1, SJR/29 ; Г-5 SJR/5)**
4. Methods for collecting, organizing, and clustering data from heterogeneous sources based on predefined rules and user requirements. **(№ Г-1 SJR/5, Г0-1/10, Г0-2/0)**
5. Analysis and machine learning algorithms with corresponding ensemble methods for boosting, stacking, and bagging. **(№ Г-3 SJR/26)**
6. Distributed platform for integrated machine self-learning models from real-time streaming data. **(№ Г-4 SJR/6)**

The contributions of Ch. Assist Dr. Kristina Dineva, assuming equal participation in the works, can be summarized with the corresponding publications and number of citations as follows:

Ch. Assist Dr. Kristina Dineva holds **two certificates** of significant relevance to her work:

- AWS Certified Cloud Practitioner – MBFM7FDLEY4EQ934;
- Microsoft Certified Professional – G217-5949.

A summarized "**scientometric profile**" of Ch. Assist Dr. Kristina Dineva is to be constructed from the respective scientific databases:

- Web of Science - 6 documents, 52 citations, h-index – 4;
- Scopus - 26 documents, 190 citations, h-index – 8;
- Google.scholar - 32 documents, 317 citations, h-index – 10;
- ACM Digital Library - 32 documents;
- IEEE Explore – 3 documents;
- Orcid.org. – 22 documents
- Researchgate.net. – 32 documents, 253 citations, h-index – 9, 484.7 research interest score, 25 693 reads, and 477 recommendations.

The "**scientometric profile**" demonstrates successful research activity and recognition within the scientific community, which should be the subject of **self-analysis** and a sufficient basis for further **publication efforts in journals with IF (Q1, Q2)**.

The candidate in the competition has received the following awards:

- A **Certificate** from IICT-BAS for outstanding scientific results in 2019 in the "PhD students" category.
- A **Certificate** from the general assembly of BAS for the BAS "Professor Marin Drinov" - award for young scientists under 35 in the 2021 competition.

As a reviewer for the educational and scientific degree "Doctor" and in the current competition, I have an **extremely positive assessment of Ch. Assist Dr. Kristina Dineva as a successful and productive researcher in development**.

I would like to suggest to Ch. Assist Dr. Kristina Dineva to present a **monograph** in English with the working title "**Cloud technologies and Infrastructures**" to a reputable publishers.

CONCLUSION

All requirements, conditions, and criteria according to ADASRB, RAADASRB and the Regulations of the specific conditions of IICT are fulfilled and I give a categorically **positive conclusion** for the election of Ch. Assist. Kristina Ivanova Dineva, PhD in a competition for the academic position of "Associate Professor" in the professional field 4.6 Informatics and Computer Science, speciality "Informatics".

I propose that the Scientific Jury unanimously vote on a proposal to the Scientific council of the IICT-BAS to elect Ch. Assist. Kristina Ivanova Dineva, PhD for the academic position of "Associate Professor" in the professional field 4.6 Informatics and Computer Science, speciality "Informatics".

28.01.2025 г.

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