OPINION

on a competition for the academic position of Professor

Field 4 Natural Sciences Mathematics and Informatics
Professional field 4.6 Informatics and Computer Science
Scientific specialty Informatics
Open Science and Innovation in Digital Cultural Heritage

Candidate Assoc. Prof. Milena Petrova Dobreva PhD

Member of the Scientific Jury [name academic position degree]

Having examined the complete competition file and assessed the candidate's research, applied research and academic record individually, I issue a positive opinion and recommend that Assoc. Prof. Milena Petrova Dobreva, PhD, be appointed to the academic position of Professor. The submitted work forms a coherent profile at the intersection of informatics, open science, digital infrastructures and digital cultural heritage. The candidate satisfies the statutory thresholds and the additional requirements of IMI–BAS, while the qualitative review identifies a distinctive contribution, international visibility and clear capacity to develop the advertised field.

1. Basis and scope of the assessment

The competition is for the Software Technologies and Information Systems Department of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences and was announced in State Gazette No. 63 of 10 July 2026. Assoc. Prof. Milena Petrova Dobreva is the sole candidate. The Scientific Jury was appointed by Order No. 87 of 8 September 2026 of the Director of IMI–BAS.

This opinion applies the Development of Academic Staff in the Republic of Bulgaria Act, its Implementing Regulations, the BAS regulations governing scientific degrees and academic positions, and the IMI–BAS regulations. I reviewed the application and administrative records; degree certificates and employment evidence; curriculum vitae; publication and abstract lists; the full texts of all 18 competition publications; the statement of original contributions; minimum-requirement tables; citation evidence; documentation of projects, textbooks and teaching aids; authorship and data-accuracy declarations; and all regulatory documents supplied in the two archives.

2. Candidate profile and eligibility

Milena Petrova Dobreva holds an MSc in Informatics from Sofia University St Kliment Ohridski and a PhD in Informatics. Her doctoral research addressed the modelling of variation in medieval Bulgarian texts; the official records confirm that the degree was awarded in 1999. In 2001 she obtained the Bulgarian habilitated rank of Senior Research Associate Second Degree in Informatics. An IMI–BAS certificate confirms full-time employment as Associate Professor from 22 June 2001 to 26 November 2009, amounting to seven years and two months. The educational, doctoral and academic-experience eligibility conditions are therefore met.

Her career spans IMI–BAS, the University of Strathclyde, University College London Qatar, the University of Malta, Sofia University and the GATE Institute. In the submitted CV she combines a research role at IMI–BAS with a teaching position at the University of Strathclyde. The record includes research, academic leadership, curriculum development, teaching and participation in international consortia.

3. Compliance with quantitative requirements

The candidate reports the following points. Compliance must be established for each group independently; a high overall total cannot compensate for a shortfall in a mandatory group.

Indicator group	Minimum	Candidate	Margin
A doctoral dissertation	50	50	0
B habilitation work or equivalent publications	100	130	30
C publications outside the habilitation work	220	248	28
D citations	140	282	142
E academic and applied activities	150	550	400
Total for orientation	660	1260	600

Every group is satisfied separately. The submitted list comprises 18 publications dated 2010–2026, and the point table identifies at least 12 publications with an impact factor or SJR, thereby meeting the additional IMI–BAS requirement. All competition publications post-date the candidate's 2001 habilitation, so the requirement that the work be new in relation to the earlier procedure is also met. The file contains declarations that the works do not duplicate outputs used in previous procedures and that the reported data are accurate. I found no indication of plagiarism or unreliable data in the submitted materials; this statement reflects documentary review and is not a substitute for a specialist forensic screening.

4. Research output and principal contributions

The competition output consists of eight journal articles, nine papers in international conference proceedings and one book chapter. Together they address how digital cultural resources can be processed, discovered, interpreted, reused and opened to different communities. The contributions fall into five connected areas.

4.1 Computational processing and access

The studies on automatic categorisation, retrieval in historical documents and post-OCR correction provide the strongest direct computer-science component. They develop wavelet-based features and machine-learning approaches, the DuoSearch concept for combined retrieval, and datasets for correcting OCR in historical Bulgarian texts. The reported results improve on earlier performance for the ICDAR 2019 Bulgarian dataset, while the release of data and code supports reproducibility and reuse. This work is relevant to language technology, information retrieval and digital archives.

4.2 User models and evaluation

A second strand comprises empirical user studies, eye tracking, scenarios and use cases. Research around Europeana and DiSCmap connects interface design with observed information practices and institutional priorities. The combination of qualitative and quantitative evidence and the inclusion of different user groups are particularly valuable. These publications make a durable contribution to human-centred design for scholarly and cultural information systems.

4.3 Data infrastructures and semantic connectivity

Work on data spaces, Wikidata and Collections as Data offers methodological frameworks for turning collections into computable, reusable resources. The systematic review of Wikidata in the GLAM sector and the readiness checklists for collections are practically useful to institutions planning open, interoperable services. The contribution in this strand is primarily architectural, methodological and organisational rather than uniformly algorithmic.

4.4 Open science citizen participation and co-creation

The publications on citizen science, user engagement and open reuse examine how cultural institutions can involve communities in producing and validating knowledge. The proposed models are relevant to open science and sustainable stewardship of digital resources. Their strength lies in integrating technological, institutional and societal perspectives.

4.5 Education and capacity building

Studies of digital-curation education, the relationship between digital libraries and e-learning, Collections as Data instruction and the use of digitised heritage in school computer-science education translate research into learning settings. This is a timely strand with potential for authentic data-driven assignments. Some of the newest proposals remain programmatic or conceptual, however, and their effect on learning should be established through larger comparative evaluations.

5. Impact academic work and projects

The competition file reports 47 independent citations indexed in Scopus, yielding 282 points. They show continuing influence from the earlier work on digital libraries and users to recent research on open data and cultural heritage. The profile is internationally visible, although citation impact is concentrated in part of the publication set and should be interpreted in the context of an interdisciplinary field.

The documents evidence participation and leadership in national and European projects involving digitisation, infrastructures, citizen science, skills and innovation laboratories. The CV shows engagement with broad international networks and membership of governance and editorial bodies. The candidate has substantial teaching and curriculum-development experience and has co-authored five school textbooks and four teachers' guides or teaching aids. These activities support her ability to develop a research community and connect fundamental, applied and educational work. Doctoral-supervision activity is described in the CV but was not claimed as a separate component in the minimum-requirement table; I therefore do not use it as a decisive quantitative ground.

6. Critical assessment

The principal strengths are the sustained thematic trajectory, international experience, integration of computational methods with user and institutional analysis, commitment to open data and infrastructures, and a demonstrated ability to build partnerships. Publications from 2022–2026 confirm current activity and close alignment with the competition topic. The profile is well suited to strengthening IMI–BAS participation in European data and cultural-heritage initiatives.

Three reservations should be recorded. First, many publications are co-authored, including several with large author teams; attribution of the individual contribution consequently relies substantially on the candidate's contribution statement, although that statement provides a credible account of conceptual, methodological and organisational roles. Second, the portfolio is interdisciplinary and its technical depth is not uniform: some works sit closer to information science, policy and digital humanities. This is compatible with the advertised specialty, but it matters when comparing the record with a purely algorithmic profile. Third, some recent educational and infrastructure proposals do not

yet have longitudinal empirical evaluation. These limitations do not alter my overall conclusion because the competition explicitly targets open science and innovation in digital cultural heritage, an area in which integrative competence is central.

7. Conclusion and recommendation

On the basis of the complete assessment, I find that Assoc. Prof. Milena Petrova Dobreva, PhD, satisfies the statutory requirements, the BAS and IMI–BAS regulations, and the scientific profile of the competition. Her research contains original and applicable results, has international visibility and is supported by substantial project, teaching and organisational experience. The quantitative thresholds are met in every group, and the qualitative merits extend beyond formal compliance.

I therefore issue a POSITIVE ASSESSMENT and recommend that the Scientific Jury propose to the Scientific Council of IMI–BAS that Assoc. Prof. Milena Petrova Dobreva, PhD, be elected to the academic position of Professor in professional field 4.6 Informatics and Computer Science, scientific specialty Informatics — Open Science and Innovation in Digital Cultural Heritage.

November 1, 2026
Sofia

prof. Eliza Stefanova, PhD