

REVIEW

**in a competition for the academic position of "Associate Professor"
in professional field 4.6 Informatics and computer sciences / Informatics /,
for the needs of Sofia University "St. Kliment Ohridski " (SU),
Faculty of Mathematics and Informatics (FMI),
announced in SG, no. 32 dated 16.04.2021 and on the websites of FMI and SU**

The review was prepared by Assoc. Prof. Eugenia Kovatcheva, PhD - University of Library Studies and Information Technologies, PF 4.6 Informatics and computer sciences, in my capacity as a member of the scientific jury of the competition according to Order № RD 38-267 / 14.06.2021 of the Sofia University Rector.

Only a candidate has submitted documents for participation in the announced competition: Ch. Assistant Professor Mariana Ilieva Atanasova, PhD, FMI at SU.

I. General description of the presented materials

1. Details of the application

The documents submitted by the competition by the candidate comply with the requirements of the Law on the Protection of Scientific and Technological Research, the Rules of Procedure and the Regulations on the Terms and Conditions for Acquisition of Scientific Degrees and Academic Positions at Sofia University "St. Kliment Ohridski".

For participation in the competition, the candidate Mariana Atanasova (Pencheva) has submitted a list of 9 articles in national and foreign scientific journals. They are cited 28 times. Three letters of support and three official notes were presented (Certificate 129 /

28.05.2021 for held academic positions, Information from FMI at Sofia University 38 /

02.06.2021 for classroom employment). Additionally, Dr. Mariana Atanasova has presented:

- Diplomas from:

- o The Faculty of Physics of Sofia University for Master of Physics including its application

- o Doctoral degree diploma from the Free University of Brussels and Certificate of its recognition at Sofia University.

- List of **original scientific contributions**
 - o Scientific contributions - 5 models in the field of Physics
 - o Scientific and applied contributions - 6 in the field of physics
- List of **scientific projects** in which she has participated:
 - o International - COST - 1 in Physics, 2013-2017
 - o NSF of MES - 3 in Physics 2016
 - o Science and Education For Smart Growth Operational Programme - 1 - Center of Excellence
 - o NSF at Sofia University:
 - 5 - 2014 - 2017 in Physics
 - 2 - 2018 - 2019 Application of high technologies and research approach in education
- Information for **teaching and learning activities**
 - o Learning material development in the last 5 years - 5 subjects in information technologies
 - o Conducting classes - in the last 5 years between 5 and 7 disciplines - with attached Report on general study and classroom employment for the last 5 years
 - o Mentor of three successfully defended master's theses at FMI in the last four years. Attached is a reference from FMI
- Academic Positions Certificate held at Sofia University from 2007 until now
- Additional reports for publishing activity from Google Scholar and Scopus.

Notes and comment on the documents.

The scientific developments indicated by the candidate on all indicators cover the required minimum. It is noteworthy that Dr. Atanasova presents impressive achievements from her work in another PF 4.1, where she worked for a long time. She has been upgrading her professional skills over the last four years and is moving towards MO 4.6. Her well-established research approach is a guarantee that Dr. Atanasova will continue in the new direction in the same way.

2. Details of the candidate

Dr. Mariana Atanasova holds a Master's degree in Physics, specializing in Optics and Spectroscopy from the Faculty of Physics at Sofia University (1998) and a Doctor of Physical Sciences - Plasma Physics from the Free University of Brussels (2013).

Dr. Atanasova's career began as a specialist in the Optics Laboratory in 1998.

He worked at the Department of Language Training at Sofia University from 2003 to 2007 as an Information Services specialist and part-time lecturer, and from 2013 to 2017 as a senior assistant.

From 2007 until now he has held academic positions as an assistant and chief assistant at Sofia University. For the period 2009-2012 he is a researcher at the Faculty of Applied Sciences of the Free University of Brussels.

Since 2017 he has been a senior assistant at the FMI at Sofia University.

3. General characteristics of the scientific works and achievements

Dr. Atanasova presents to the attention of the commission for participation in the competition for the academic position of associate professor 9 articles: three of them are divided into a *group of indicators B*: scientific publications in publications that are referenced and indexed in world-famous databases with scientific information, and the remaining 6 are for group of *indicators I*: scientific publication in publications that are referenced and indexed in world-famous databases with scientific information, *outside group B*.

All submitted articles were co-authored by a team of an average of 4 people. Dr. Atanasova is the first author of 6 of the articles.

The candidate's research was highly rated judging by the place where it was published and the number of citations. Dr. Atanasova makes both purely theoretical and experimental studies of plasmas. As a result of her research, theoretical models have been created for:

- electrodynamic description of the propagation of a surface wave in inhomogeneous plasma
- description of the kinetics of argon plasma
- description of the plasma dynamics in a radio frequency plasma shower with flow reading
- complete description of the radio frequency plasma shower
- Model connecting the plasma and wave description in a coordinated way

as well as a theoretical description of:

- low temperature argon plasma
- surface wave discharge
- radio frequency plasma shower

theoretical and applied achievements:

- A methodology for theoretical description of nonequilibrium plasmas is proposed
- A biomedical study and a plasma-water interaction study were performed

Съдържателен анализ на научните и научно-приложните постижения

The scientific papers presented at the competition are in the field of physics. The candidate has developed modern theoretical descriptions, models and methodologies and experimental formulations are presented. From the submitted references, the articles participating in the competition are cited a total of 37 times without auto-citations and all citations are in Scopus or WoS.

In conclusion:

- the scientific works meet the minimum national requirements and respectively the additional requirements of Sofia University “St. Kliment Ohridski ”for holding the academic position of“ Associate Professor”in the scientific field and professional field 4.6 of the competition;
- the scientific papers submitted by the candidate do not repeat those of previous procedures for acquiring a scientific title and academic position;
- there is no plagiarism proven in the statutory order in the scientific papers submitted at the competition.

4. Characteristics and evaluation of the teaching activity of the candidate

Dr. Atanasova began her teaching career in 2003 on a part-time basis at the Department of Language Teaching at Sofia University, developing teaching materials and teaching computer skills (Word, Excel, Access, Basics of C ++) and physics in parallel with the maintenance and servicing of control systems. of access and statistical processing of information. Subsequently, he became an assistant in the same department, and later a senior assistant - he taught Physics to foreign students, development of teaching materials and specialized courses in master's programs at the Faculty of Physics at Sofia University.

In the last 5 years, as a chief assistant at the FMI at Sofia University, he has an average of over 300 hours of classroom employment per year. She leads 5 compulsory courses for bachelors and 1 compulsory for masters. The list of courses is as for:

- Bachelor's degree leads exercises and lectures in Information Systems and Technologies, Computer Networks (Cisco) - Workshop, Fundamentals of Computer Networks, Operating Systems and Computer Networks in School, Operating Systems and Office Applications, Office Technologies, Computer Systems and Technologies, Information Systems and Technology, Mathematics and Informatics

- For Master's degree - Methods for planning, conducting and documenting research and projects; Data processing and analysis; Internet business; Business telecommunications

It is noteworthy that the disciplines in which Ch. Assistant Professor Atanasova teaches cover a significant range of the professional field in which the competition is. From the opinions presented to her colleagues, it is evident the commitment with which the candidate in this competition treats his teaching duties and has three defended the graduate for the last 4 years. Her colleagues describe her as a good teacher.

5. Critical remarks and recommendations

There are no developments from the last 5 years in the field of informatics and information technologies. My recommendation is to pay more attention to research developments in professional field 4.6, for which Ch. Assistant Professor Dr. Mariana Atanasova.

6. Лични впечатления за кандидата

I have no direct impressions.

From the letters of support received from her colleagues from the country and abroad, she was identified as an active scientist and a colleague who can be relied on.

7. Conclusion on the application

After getting acquainted with the materials and scientific works presented in the competition and on the basis of the analysis of their significance and the scientific and scientific-applied contributions contained in them, I confirm that the scientific achievements meet the requirements of ЗРАСПБ, the Regulations for its application and the respective Regulations of Sofia University "St. Kliment Ohridski" for holding the candidate for the academic position "Associate Professor" in the scientific field and professional direction of the competition. In particular, the candidate satisfies the minimum national requirements in the professional field and no plagiarism has been established in the scientific papers submitted at the competition.

I give my **positive assessment** of the candidacy of Ch. Assistant Professor Dr. Mariana Ilieva Atanasova.

II. General Conclusion

Based on the above, I recommend the scientific jury to propose to the competent authority for

the selection of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski" to approve Ch. Assistant Professor Dr. Mariana Atanasova to take the academic position of "Associate Professor" in the professional field 4.6 Informatics and Computer Science / Informatics /.

10.08.2021

Reviewer:

Assoc. Prof. Eugenia Kovatcheva, PhD