

American University in Bulgaria

Opinion Template

Recommended length: two to three pages

OPINION

By: [Emil Horozov, professor, D.Sc., Corresponding member of Bulgarian Academy of Sciences]

Regarding: The application of the following candidates for the academic position of **FULL PROFESSOR OF MATHEMATICS** according to the Bulgarian legislation at the American University in Bulgaria in Area of Higher Education 4. Natural Sciences, Mathematics, and Informatics in Professional Field 4.5 Mathematics. The procedure has been announced in the State Gazette issue 69 dated September 8, 2015

Candidate 1: Assoc. Prof. Tatyana Gateva-Ivanova

I present the evaluation below in my capacity as a member of the Academic Jury appointed for the above mentioned procedure by a letter of the AUBG President dated November 6, 2015. This evaluation is based on the *Development of Academic Staff in the Republic of Bulgaria Act*, the Rules for its implementation, the internal AUBG rules, regulations, and policies, including the *Habilitation Procedure* and the advertisement on the AUBG website regarding the procedure.

Evaluation of the Applicants

*The evaluation is carried out according to the **Primary Indicators** and **Additional Indicators** included in the document **Guidelines for the Academic Jury**.*

I. Basis for Evaluation

The documents submitted by the Candidate, as articles in refereed journals specialized in the area, non-refereed publications, citations (abroad), a Summary of Contributions and Results (a 31 page document), a List of citations, a six page Description of her Teaching experience, List of Enrollment and courses taught at AUB, etc.

II. Eligibility

Dr T. Ivanova fulfills the eligibility conditions set forth in the Law and the University regulations. (Eligibility checklist is enclosed.)

III. Areas of Research of the Candidate. Evaluation of the Contributions of the Candidate.

Dr. T. Ivanova is working in the area of Algebra and its applications to physics. More specifically here work is concentrated in Noncommutative algebra, Artin-



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Schelter regular algebras, Quadratic algebras, Quantum algebra, Yang-Baxter equations. (Additional Requirements List is inclosed).

The papers, that Dr. T. Ivanova has presented for the habilitation are published in its majority in journals with high Impact Factor. In more details she has published in such prestigious journals in mathematics and mathematical physics as *Advances in Mathematics*, *Communication in Mathematical Physics*, *Journal of Mathematical Physics*, etc. 5 of her papers are in *Journal of Algebra*. As a whole Dr. Ivanova has an impressive record of publication activity in high ranking journals. For me this is more important than the number (16) of the papers she has included in her list for the procedure of full professor. Only for the present procedure Dr. Ivanova has presented 12 with impact factor which complies with the (non-official) recommendations of the Ministry of Education and Science of 10 papers.

The research of Dr. Ivanova has received a very high estimate by a large number of citations – more than 300. I recall that the same instruction suggests 30 citations in Impact factor journals. But again my opinion is that even this big number does not say enough. The point is that several leading scientists refer to her work. Here I will mention A. Berenstein, P. Dehornoy, P. Etingof, etc. In particular in a very influential paper, published in *Duke Math. J.*, the authors P. Etingof, T. Schedler and A. Soloviev acknowledge that a considerable part of their work on quantum Yang-Baxter equation has been obtained earlier by T. Ivanova and M. Van der Berg.

In addition to that Dr. Ivanova has visited several leading mathematical centers as MIT, Isaac Newton institute, Max Planck Institute, etc. This is again a recognition for her scientific work.

I consider her work on set-theoretic solutions of quantum Yang-Baxter equation to be among the achievements of Bulgarian mathematics that are world recognised.

All this shows that Dr. Ivanova is a scientist with international reputation.

IV. Evaluation of the Candidate's teaching

1. I was impressed by the numerous mathematical courses and in particular with variety of different advanced ones. I am teaching in Sofia university, considered the



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best in mathematics in Bulgaria, but the courses Dr. Ivanova has taught still impress me and I acknowledge that some of them would be welcomed in Sofia to raise its scientific and educational level. In addition she has organized Students Math seminars. This is an extracurricular work but from my point of view these seminars do a very important - they teach the students how to work independently.

I think Dr. Ivanova's teaching record shows that she is a valuable member of a team, strongly concerned with the students achievements.

V. **Major critical notes and recommendations** - None

VI. **Conclusion:**

My opinion is that the high level scientific research of Tatyana Gateva-Ivanova and her excellent teaching experience are completely appropriate for the specific requirements of the American University in Bulgaria. I recommend FOR granting her the academic rank of Full Professor.

Signature and date:

27.01.2016

By signing here I also declare that writing this review does not represent conflict of interest.



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Additional Requirements

For Professor Academic Position in Professional Field 4.5 Mathematics

- ⊃ Additional specifications: algebra, noncommutative algebra, quantum algebra, Yang-Baxter equations and related algebraic objects, Artin-Schelter regular algebras, combinatorial methods in noncommutative algebra: finitely presented algebraic structures, quadratic algebras

Name of the Candidate: **Assoc. Prof. Dr. Tatyana Gateva-Ivanova**

Check below what applies. Sign and submit together with your review or opinion.

Research

The Candidate has conducted research in the following areas:

- ⊃ Algebra;
- ⊃ Noncommutative algebra;
- ⊃ Quantum algebra;
- ⊃ Yang-Baxter equations and related algebraic objects;
- ⊃ Artin-Schelter regular algebras;
- ⊃ Combinatorial methods in noncommutative algebra: finitely presented algebraic structures;
- ⊃ Quadratic algebras.

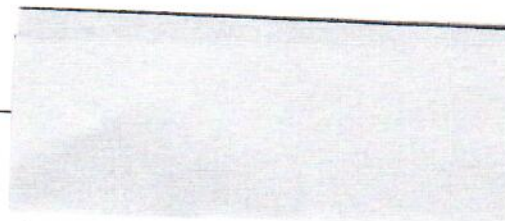
Teaching

The Candidate has teaching experience in the following areas:

- ⊃ Yang-Baxter equations and associated algebraic objects;
- ⊃ Abstract Algebra;
- ⊃ Group Theory;
- ⊃ Galois Theory;
- ⊃ Lie algebras;
- ⊃ Ideals, varieties, and algorithms;
- ⊃ Finite presentability, Groebner bases, normal forms (diamond lemma);
- ⊃ Linear algebra;
- ⊃ Multivariate Calculus and Geometry.

Signature and date:

27.01.2016



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Eligibility Checklist

Name of the Candidate: **Assoc. Prof. Dr. Tatyana Gateva-Ivanova**
Applying for: **Full Professor in Mathematics**
In the Professional Field: **4.5 Mathematics**

Check below what applies. Sign and submit together with your review or opinion.

- ⊖ The Candidate has Ph.D;
- ⊖ The Candidate has served five years as (Senior) Assistant Professor (for applicants for Associate Professor) or six years as Associate Professor (for applicants to Full Professor) at a recognized academic institution;
- ⊖ The Candidate has published a monograph or publications of equal standing in specialized journals. These should not repeat publications based on which Ph. D., or Doctor of Science degree, or Associate Professor Rank was granted;
- ⊖ For applicants for Full Professor: The Candidate has other original research works, publications, and other theoretical or applied-theoretical works;
- ⊖ The Candidate has experience from recognized academic liberal arts institution(s);
- ⊖ The Candidate has experience in student-centered teaching approach;
- ⊖ The Candidate has undergone at least one successful evaluation in teaching, research and service at a recognized academic liberal arts institution, including positive student evaluations of teaching.
- ⊖ The Candidate has experience in teaching in English at a higher education institution with instruction in English language.



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- ⊖ AUBG can ensure teaching and research load according to its internal rules and regulations.

Signature and date:

27.01.2016

