

# **R E V I E W**

by

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member of the scientific jury (№ ПД 38-266 / 10.07.2020 г.)

Regarding the applications for an academic position “Associate Professor”  
in the professional field 4.5. Mathematics (Geometry)

Only one candidate has applied for the position---chief assistant professor Aleksander Vladimirov Petkov, PhD, Faculty of Mathematics and Informatics, Sofia University “St. Kliment Ohridski”

## **I. General description**

The presented documents for participation in the competition are in full accordance with the requirements of the Bulgarian law and the internal regulations of the Sofia University.

### **1. Biographical notes**

According to his CV, the applicant studied Mathematics at the Sofia University; received his Bachelor degree in 2008 and Master degree in 2010. In 2014 the applicant obtains PhD in Mathematic from the Sofia University with doctoral thesis “Riemannian and sun-Riemannian manifolds with structures”. He is employed by the Sofia University as a chief assistant professor since July 2014 and keeps this position until now. The applicant has accumulated some academic experience also abroad; he was a postdoc at the University of Wien and at the University of Miami. In the period April—December 2019, the applicant participated at the program “Jung researchers and postdoctoral students” of the Ministry of Education and Science of Bulgaria.

## **2. Overview of the scientific activities**

The candidate's application contains 6 papers, 5 of which are published in journals with impact factor and one in the Annual of Sofia University "St. Kliment Ohridski". All this paper have been published in the period 2013-2020. The full list of papers of the candidate contains 8 titles, i.e., two more titles than in the list of the application form. One of this two additional papers is used by the candidate for his PhD in 2014. So far the results of all 8 papers have been cited more than 24 times.

The papers of the candidate included in his application form have not been used in any preceding procedures of this type and to the best of my knowledge there are no copyrights violations.

I believe that all the requirement of the Bulgarian law are satisfied including the so called minimal national requirements:

- Concerning criteria „B“, the application contains two papers published in journals with impact factor, which amounts to the totality of 111 points (100 required).
- Concerning criteria „Г“, the application contains 4 papers, three of which are published in journals with impact factor and one in the Annual of Sofia University "St. Kliment Ohridski". This give 204 points in total (200 required).
- Concerning criteria „Д“, the application contains a list of 8 citations which amounts to 64 points (50 required).

## **3. Teaching experience**

The candidate has been working as a chief assistant professor at the Faculty of Mathematics and Informatics of the Sofia University since July 2014 and as such he has held tutorials in Analytic geometry, Linear Algebra, Differential geometry and etc. He has been giving lectures in Mathematics for students from the Faculty of Geology and Geography. He is well liked by the students and his classes are well attended.

## **4. Scientific contributions**

The research interests of the candidate match perfectly the profile of the position in the application. All the results of the applicant are related to the geometry and analysis of quaternionic contact manifolds. Especially significant is the result concerning a version of the Lichnerowicz's theorem giving a lower bound for the eigenvalues of the sub-Laplacian on compact quaternionic contact manifolds. Another very interesting result of the applicant is the proof of existence of solutions to the Yamabe equation on compact quaternionic-contact manifolds which are not locally spherical. This is an important step towards obtaining a complete solution of the quaternionic contact Yamabe problem in general.

The significance of the applicant's results is emphasized also by the rank of the scientific journals in which this result are published and by the large number of citations accumulated so far.

## 5. Conclusion

The evidence presented and the evaluations made of the applicant's scientific, teaching and research activities prove that he meets the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the criteria of the Faculty of Mathematics and Informatics for the occupation of the academic position of "Associate Professor". All this allows me completely convinced to suggest to the honorable scientific jury to give a **positive assessment** and propose to the Faculty Council of the Faculty of Mathematics and Informatics of the Sofia University "Kliment Ohridski" **to select** Ch. Assist. Prof. Aleksander Vladimirov Petkov for the academic position "Associate Professor" in the professional field 4.5. Mathematics (Geometry).

07.09 2020 г.

Signature:

(Assoc. Prof. Ivan Minchev)