## ATTITUDE OF REVIEWER

for Assist. Prof. Dr. Stoil Ivanov Ivanov in the competition for acquiring the academic position "Associate Professor" at the Faculty of Mathematics and Informatics at University of Plovdiv Paisii Hilendarski in area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.5. Mathematics (Mathematical analysis), published in Newspaper of State, issue 40, May 14, 2021

Prepared by: Prof. Dr. Anton Iliev Iliev

By order №P33-3130/12.07.2021 of the Rector of the University of Plovdiv Paisii Hilendarski I was appointed as a member of the Scientific Jury in area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.5. Mathematics (Mathematical analysis).

For the participation in the announced competition for "associate professor" the documents of Assist. Prof. Dr. Stoil Ivanov Ivanov were submitted.

I have received all the required documents for participation in the competition in electronic format.

The candidate has grouped the scientific papers presented in the competition into two thematic areas, structured in the annotation of materials.

## Main Contributions:

The main contributions were synthesized by the candidate in two groups:

- Investigation of iterative methods with high order of convergence for individual approximation of prime and multiple zeros of polynomials;

- Investigation of iterative methods with high order of convergence for simultaneous approximation of all prime or multiple zeros of a given polynomial.

In particular, based on the general theory developed by Prof. Proinov, ScD, various theorems have been formulated and proved concerning estimates of errors and areas of convergence for the two separated by Assistant Professor Ivanov groups iterative processes.

Among the obtained results stand out both theoretical, in which the zeros of the respective polynomial participate, as well as theoretical-applied ones, which are closely related to the so-called computer-verifiable initial conditions.

The main focus of the research is the methods of Newton (article №4), Halley (articles with №№ 1 and 4), Chebyshov (articles with №№ 2 and 4), Schröder (articles with №№3 and 6), Dochev and Byrnev (article №5), Ehrlich (article №5), Gander (article with №10), Sakurai, Torii and Sugiura (articles with №№7-9). I will explicitly note that the candidate examines both classical and proposed by him modifications and generalizations of these methods. In my opinion, the research related to the improvement of all known estimates for the different types of convergence deserves the highest evaluation, namely accurate estimates of the areas of local and semi-local convergence, as well as a priori and a posteriori error estimates from the first iteration. The cases of search for both simple and multiple roots are considered.

## Reference for publications and citations:

The candidate submits 10 scientific publications and 1 guide for solving tasks in the "associate professor" competition.

In journals with Impact Factor (total IF more than 11 - WoS source) are published seven articles in journals with IF assessments - Q1 (5), Q2 (1) and Q3 (1), respectively, and 1 in edition with SJR.

The requirement for the necessary number of papers which are not submitted for the doctorate degree (2014) is fulfilled, which satisfies the requirements within the meaning of the ZRASRB, the Regulations for the implementation of the ZRASRB and the Rules of the "Paisii Hilendarski" for the implementation of the ZRASRB.

The candidate is submitted a list of 72 citations, 21 of which are in IF journals. Total IF more than 38 and grades from Q1 to Q4.

The minimal national requirements for required points by groups of indicators for the academic position of "associate professor" have been fulfilled.

The additional faculty requirements of the FMI at PII for PRAS in RB of FMI at PII for the position of "associate professor" have been fulfilled, namely - at least 8 publications, at least 5 publications in journals, at least 3 in journals with IF, at least 1 textbook and evidence of at least 5 citations.

I have not found any "plagiarism" in the candidate's work within the meaning of ZRAS in RB.

Assistant Professor S. Ivanov has submitted a report for participation in 6 research projects, one of which is national.

All told so far convinced me to give a positive mark of the candidate overall research.

## CONCLUSION

It is clear from the findings of the candidate works presented in the competition that in they are received sufficient scientific and applied contributions in the field of "Mathematical analysis".

From the reports presented, it is clear that the candidate has a very good teaching activity which adds to my conviction that Assistant Professor Stoil Ivanov meets the requirements of the ZRASRB, the Regulations for the implementation of the ZRASRB, the Rules of the PU "Paisii Hilendarski" for the implementation of the ZRASRB for the acquiring the academic position "Associate Professor".

My conclusion regarding the acquiring of the academic position "Associate Professor" by Assist. Prof. Dr. Stoil Ivanov Ivanov is POSITIVE.

I suggest to the Honorable Scientific Jury unanimously to propose the Faculty Council of the Faculty of Mathematics and Informatics at the University of Plovdiv "Paisii Hilendarski" to choose the candidate Assistant Professor Dr. Stoil Ivanov Ivanov for the academic position "Associate Professor" in the Physico-technological faculty at University of Plovdiv "Paisii Hilendarski" in the area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.5. Mathematics (Mathematical analysis).

September 2, 2021

Signature:....

/Prof. Dr. Anton Iliev/