

## Attitude of Reviewer

on competition for occupation of the academic position "Assistant Professor" in the professional field in the professional field 4.2. Chemical Sciences (Solid State Chemistry) for the needs of the Laboratory "Crystal Chemistry of Composite Materials" at IGIC -BAS, announced in the State Gazette no. 36 / 03.05.2019

Candidate: Assistant Dr. Peter Tsvetkov - IGIC-BAS

Member of the Scientific Jury: Assoc. Prof. Vladislav Kostov, PhD – IMC-BAS

The only candidate for the competition is Assistant Dr. Peter Tsvetanov Tsvetkov from the Laboratory "Crystal Chemistry of Composite Materials" at IGIC-BAS.

To participate in the competition, Dr. P. Tsvetkov has submitted 23 scientific publications, which do not repeat the ones submitted for the doctoral degree, 19 of which are in the journals included in the Scopus database. Among the renowned international journals in which the candidate published are: *Journal of Alloys and Compounds*; *Journal of Crystal Growth*, *Journal of Non-Crystalline Solids*, *Physics and Chemistry of Minerals*, *Fuel Processing Technology*, *Carbon* etc. The quotes on the entries in the competition are 153. The candidate's Hirsch index is 8 based on all publications. In the presented set of articles assistant P. Tsvetkov is the first or corresponding author in two of them. The personal contributions to the submitted publications are correctly stated in the copyright report. The candidate's scientometric indicators meet and exceed the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and of the effective regulations for its implementation, including the additional requirements laid down in the Regulations of the IGIC-BAS for occupying the academic position of "Assistant Professor".

An essential part of the research of Dr. P. Tsvetkov fall into several main directions, as follows: X-ray studies of materials with promising functionality for laser technologies (objects: aluminum-indium tungstates; germanates of olivine type and other structures; transparent glass ceramics containing germanate phase); X-ray studies of fat hydration catalyst systems and other catalytic reactions (objects: layered double hydroxides of hydrotalcite type structure; modified diatomite or silica gel; multicomponent Mo and W containing catalysts); Structural characterization of synthetic perovskites with interesting electrical, magnetic and catalytic properties; X-ray characterization of carbon materials. According to the submitted author's reports, his participation in these studies has a clearly defined area, which deals with X-ray studies and not so well defined profile of synthetic skills and practices. I have preliminary information solely on his activities related to obtaining perovskite type compounds. In general, however, there is a clear understanding of the nature and importance of all the studies carried out.

The documents attached to the competition reveal Assistant Dr. Peter Tsvetanov Tsvetkov as a team scientist with a keen interest in powder X-ray diffraction as a technique for obtaining a wide range of data on the objects studied. He has mastered highly the analytical apparatus which serves it, namely: X-ray phase analysis; phase transitions; Rietveld's method for structural characterization and quantitative analysis; dimension of crystallites; calculation of various crystal-chemical parameters related to microstrains in structures such as deformation of the unit cell, deformation of the bond length, angles and inclination of coordination polyhedra, sum of valence bonds (Bond valence method), global instability index, etc. This will always make him a desirable partner in research teams dedicated to material science. My recommendation to him is in his future activity to find his own field of expression with recognizable, his own, objects of study, so that he can generate

his own scientific topics, able to gather teams for their performance. I cannot fail to note some frugality and some insignificant omissions and gaps in the collection of documents, which prompts me to remark about more self-righteousness and responsibility, both to himself and to others in the future.

In conclusion, I express my conviction that the level of scientific and research activity and scientometric indicators of Assistant Dr. Peter Tsvetanov Tsvetkov fully meet the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and all legal regulations for its application for the academic Associate Professor position. I recommend that the members of the Scientific Council of IGIC-BAS vote for the award of the academic position of Assistant Professor in the professional field 4.2. Chemical Sciences (Solid State Chemistry) for the needs of the Laboratory "Crystal Chemistry of Composite Materials" at IGIC-BAS of Assistant Dr. Peter Tsvetanov Tsvetkov.

Member of the Scientific Jury:

/ Assoc. Prof. Vladislav Kostov /