

**REVIEW**  
on a competition for the academic position of "**Associate  
Professor**"

Field of higher education: **5. Technical sciences,**  
**Professional field: 5.7. Architecture, construction and geodesy,**  
**Building constructions (Reinforced concrete**  
**constructions)**

Reviewer: **Prof. Dr. Eng. Svetlana Lilkova-**  
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This review was assigned on April 23, 2021 by the Scientific Jury, approved by Order No. 121 / March 12, 2021 of the Rector of the Higher School of Civil Engineering "Lyuben Karavelov". It has been prepared in accordance with the requirements of the Law for the development of the academic staff in the Republic of Bulgaria, with the Regulations for its application, with the Regulations for the development of the academic staff in the Higher School of Civil Engineering "Lyuben Karavelov".

The competition for the position of "Associate Professor" was announced in the "State Gazette" issue 15 / 19.02.2021. In accordance with the term of the application for participation was presented Chief Assistant. Dr. Eng. Stanislav Tsvetkov. He was admitted to the competition.

**1. Brief biographical data**

Stanislav Tsvetkov graduated from VFU "Lyuben Karavelov" in 2009 as a bachelor, and in 2011 - as a master in Construction of buildings and facilities - specialization in Building Constructions. In 2018 at VFU "Lyuben Karavelov" he defended his doctoral dissertation (thesis) on "Antiseismic provision of special reinforced concrete structures."

From 2010 to 2014, Eng. Stanislav Tsvetkov was a full-time assistant at the Department of Civil Engineering at VFU "Lyuben Karavelov". From 2014 to 2019 he was a part-time assistant (on a fee), and from 2019 to the present he is a Chief assistant in the department.

Eng. Stanislav Tsvetkov is a member of the Chamber of Engineers in Investment Design - Full design with capacity for preparation of investment projects in parts: "Constructive" and "Organization and execution of construction".

Chief Assistant Stanislav Tsvetkov is Secretary of the Academic Council of VFU "Lyuben Karavelov".

## **2. General description of submitted materials**

The candidate chief assistant Stanislav Tsvetkov participated in the competition with 4 articles in a magazine, 20 published papers from scientific conferences, one article in print, one monograph (habilitation thesis) and two other monographs. One of the articles is the publication, which is referenced and indexed in world-famous databases of scientific information. Twenty-four of the articles are in unrefereed scientific evaluation lists or in edited collective volumes.

The monograph (habilitation thesis) is entitled "The Reinforced concrete structural walls - antiseismic discs", published by VSU "Lyuben Karavelov", ISBN 978-954-331-115-6, 398 pages, 2020.

The other independent monograph "Constructors for civil engineers - the prefabricated one-storey buildings of reinforced concrete elements", published by VSU "Lyuben Karavelov", ISBN 978-954-331-103-3, 388 pages, 2019.

The monograph with one co-author is "Innovation in Industrial Architecture", published by VSU "Lyuben Karavelov", ISBN 978-954-392-634-3, 183 pages, 2020.

One of the publications is in English and the rest in Bulgarian.

Eight publications of Chief Assistant Stanislav Tsvetkov with independent, 16 - with one co-author, and one - with two co-authors.

Scientific works of Chief Assistant Stanislav Tsvetkov is in the field of computer modeling and simulation in the study of building structures, mainly reinforced concrete structures.

## **3. Reflection of scientific publications in the literature (known citations)**

### **a) Citations in scientific journals, referenced and indexed in world-famous databases of scientific information**

The methodical manual Tsvetkov St., Georgiev G., Methodical manual for developing a course project reinforced concrete according to Eurocode 2, VSU Publishing House, Sofia, 2012, ISBN: 978-954-331-037-1 is cited 2 times.

The publication Tsvetkov St., Lengths of anchoring of the load-bearing reinforcement in reinforced concrete beams, In Proceedings: XIII International Scientific Conference VSU 2013, ISSN 1314-071X, pp. II-108-II-111 is cited 1 time.

The publication Tsvetkov St., Constructors for Civil Engineers - the prefabricated One-Storey Buildings of Reinforced Concrete Elements, VSU Publishing House, ISBN: 978-954-331-103-3 is cited 1 time.

Methodical guide Georgiev G., Tsvetkov St., Methodical guide for developing a course project on reinforced concrete structures according to Eurocode, part one, chapter one: Beamless slabs and stairs, VSU publishing house, Sofia, 2013 is cited 1 time.

The publication Georgiev and St. Tsvetkov, Guide for design of special reinforced concrete structures according to Eurocodes, part 1, chapter 1, General information for analysis and construction of special reinforced concrete structures, USEA (VSU), Sofia, Bulgaria is cited 1 time.

The publication Tsvetkov St., Design of steel arched roofs and implementation of the connection "steel-concrete (reinforced concrete)" in the foundations, In Proc. IX International Scientific Conference on Architecture and Construction ArCivE 2019, Section II, Report № 9 ISSN: 2535-078 is cited 1 time.

The publication Tsvetkov St., Reinforced concrete structural shear walls - antiseismic "discs", VSU Publishing House, Sofia, 2020, ISBN: 978-954-331-115-6, p.78 is cited 1 time.

#### **b) Citations in unreferred journals with scientific reviewing**

The monograph Tsvetkov St., Constructors for Civil Engineers - the prefabricated One-Storey Buildings of Reinforced Concrete Elements, VSU, Sofia, 2019 is cited three times.

Publications:

Tsvetkov St., Bayraktarov S., Constructions of reinforced concrete buildings and facilities for agricultural complexes, MNK XVII VSU'2017, S., 2017 - cited 1 time;

Mancheva-Velkova B., Tsvetkov St., Current architectural and structural problems in agricultural buildings, Sofia, 2017 (ISBN: 978-954-392-475-2) - cited 4 times;

Vlasarev D., Tsvetkov St., Multi-storey car parks and garages, IX International Scientific Conference on Architecture and Construction ArCivE 2019 May 31 - June 2, 2019, Varna Free University "Chernorizets Hrabar", Varna - cited 2 times;

Hrishev L., Tsvetkov St., Nedelchev N., Calculations for early de-formwork of reinforced concrete slabs according to the requirements of Eurocode 2, VII International Scientific Conference "Architecture, Construction - Modernity", 28 - 30 May 2015. Varna, Bulgaria, p. 364-373 (ISSN: 2367-7252), ch. editor P. Pavlov-quoted 1 time;

Tsvetkov St., Determination of load areas of reinforced concrete vertical load-bearing elements, XIV International Scientific Conference VSU'2014 June 5-6, Sofia, 2014, Volume IV, pp. 82-86 (ISSN: 1314-071X), ed. of V. Stoyanov, D. Partov-quoted 1 time;

Tsvetkov St., Constructive study of the building of an Orthodox church, Annual University Scientific Conference, June 27-28, 2019 Vasil Levski National High School ISSN: 2367-7481 (edited by V. Madanski and team), pp. 1767-1776 - cited 1 time;

Tsvetkov St., Length of anchoring of the load-bearing reinforcement in reinforced concrete beams, XIII International Scientific Conference VSU'2013 6-7 June, Sofia, 2013, Volume II, pp. II-108-111, (ISSN: 1314-071X) ed. of V. Stoyanov, M. Hamova, D. Partov-quoted 1 time;

Tsvetkov St., Tateva Sv., Reporting of random eccentricities in seismic analysis of buildings, Scientific Journal "Mechanics, Transport, Communications" (MTC AJ), article № 1236, volume 13, issue 3/3, 2015 (ISSN 1312 -3823 - print; ISSN 2367-6620 - online), ch. ed. P. Kolev-quoted 1 time;

Yanchev G., Tsvetkov St., A Decision dealing with the determination of Effective (contributing) Widths and Reinforcements in Reinforced Concrete Beams, Annual University Scientific Conference, Vasil Levski National - Veliko Tarnovo, May 28-29, 2020, ed. of St. Evtimov et al., Pp. 1759-1769 (electronic edition - ISSN: 2367-7481), report 189 - cited 3 times;

Tsvetkov St., Accounting the impact from ground pressure in the design of buildings, n.sp. "Mechanics, Transport, Communications", Volume 12, Issue 3/3, 2014, Article no. 1093 - cited 1 time;

Mancheva-Velkova B., St. Tsvetkov, Contemporary Pharmaceutical Enterprises, X Jubilee International Scientific Conference "Design and Construction of Buildings and Facilities" - "Theory and Practice for a Sustainable Future", Varna, 2018, 664-674 - cited 1 time;

Mancheva-Velkova B., St. Tsvetkov, Design of fruit storage facilities, X Jubilee International Scientific Conference "Design and Construction of Buildings and Facilities", Varna, 2018, pp. 675-687 - cited 1 time;

Tsvetkov St., H. Ahmed, Interactive diagrams of reinforced concrete cores, Scientific Journal "Mechanics, Transport, Communications", Volume 16, no. 1, 2018, ISSN 1312-3823 (print), ISSN 2367-6620 (online), XIV-24 –XIV-31. -quoted 1 time.

There are also citations of the methodological guides, in which Chief Assistant Stanislav Tsvetkov is a co-author.

#### **4. General characteristics of the candidate's activity**

##### **a) Educational and pedagogical activity (work with students and doctoral students)**

Chief Assistant Stanislav Tsvetkov conduct lectures at the disciplines Reinforced concrete structures, Masonry structures, restoration and strengthening of building structures of reinforced concrete / building structures, Modern computer calculation methods in building design / Computer methods for building construction design, Automation of building design. Conducts exercises in Reinforced Concrete, Reinforced, Special reinforced concrete structures, Modern computer calculation methods in building and structural design / Computer methods for designing building structures, Automation of building and structural design / Modeling of building structures, Bridges, Steel structures, Wooden structures.

Chief Assistant Stanislav Tsvetkov is the leader of 154 graduates and the scientific leader of 5 research diploma projects. He also works with distinguished students and presents joint publications with them. He is a reviewer of over 20 diploma projects.

Chief Assistant Stanislav Tsvetkov participates in the development of curricula in the disciplines of the Department of Building Structures, methodological materials and manuals for course design.

From 2016 until now, Chief Assistant Stanislav Tsvetkov is an Academic Mentor of more than 50 students in the "Student Internships" program at the Ministry of Education and Science.

In 2019, he was the technical editor of two Course Design Guides for Industrial Buildings for Architects.

From January 2020 until now, Chief Assistant Stanislav Tsvetkov is a lecturer at the Center for Vocational Training at VSU "Lyuben Karavelov".

## **b) Scientific and scientific-applied activity**

The publications of Chief Assistant Stanislav Tsvetkov are in the following areas:

- Research of reinforced concrete beams

Article 1 of the recommended lists proposes different models for the study of antiseismic behavior of concrete walls.

In this regard is the following publication from unrefereed journals:

18 - The authors' approach in calculating the reinforcement in reinforced concrete beams is shown and the results are compared with those obtained under Eurocode 2.

Studies of reinforced concrete walls as structural elements

This articles from unrefereed journals, are contact this topic:

1 - An approach is proposed for the study of reinforced concrete walls subjected to non-centric compression.

2 - Eurocode 8 is applied, the influence of soil is taken into account and an analysis of reinforced concrete shear walls as structural elements is performed.

21 and 22 - Are considered different models of reinforced concrete shear walls - with different dense cross sections and with holes (on different positions). Determined by internal forces under seismic loading.

Investigation of various reinforced concrete structures

This articles from unrefereed journals, are contact this topic:

3 - Reinforced concrete silo and a group of silos performed with static-dynamic studies are considered.

4 - For reinforced concrete water towers, checks have been carried out for total stability and second order effects. They are determined by water filling conditions in determining the maximum internal forces.

5 - Presentation of calculation procedures by ultimate limit state and serviceability limit state in case of early de-formwork of reinforced concrete slabs.

6 - For reinforced concrete tanks (overground and underground) the procedure of Eurocode 8-4 is applied and the internal forces are determined.

7 - The research is related to the design of reinforced concrete poles supporting electrical conductors.

8 - A static-dynamic study of a reinforced concrete cooling tower in the form of a hyperboloid and supported by columns was performed.

9 - Review article are related to the design of fruit storage facilities.

10 - Reinforced concrete columns with inclined parts as well as a variable cross section are considered. A way of connecting between the reinforcing bars is proposed.

11 - The results of a constructive study of an Orthodox church are reflected.

12 - Possible structural systems for the construction of furniture factories are summarized.

13 - Are considered different design solutions for wine cellars on sloping terrain.

14 - Structural systems of multi-storey car parks and garages are shown.

15 - Examples of design of structures are presented - steel arched roofs and foundation slabs or walls under them.

16 - A design solution of a project on reinforced concrete bunker (silo) for storage of flour in a bakery is presented.

17 - The article is related to the design of a specific reinforced concrete lighthouse.

19 - A cylindrical reinforced concrete tank (water column) was examined for seismic impacts.

20 - A solution for the construction of a reinforced concrete water tower from different loads is presented.

23 - A reinforced concrete bio-basin was studied and a static-dynamic analysis was performed.

24 - Determined are internal forces of reinforced concrete radial precipitator under different loads.

The monograph (habilitation thesis) of Chief Assistant Stanislav Tsvetkov is entitled "Reinforced concrete structural shear walls - anti-seismic discs", Publishing House of VFU "Lyuben Karavelov", ISBN 978-954-331-115-6, 398 pages, 2020.

The monograph consists of an Introduction and seven chapters. Earthquake loading studies are considered. Different types of reinforced concrete walls were modeled and parametric numerical experiments for seismic loads were performed. The results are well analyzed and conclusions are drawn.

Chief Assistant Stanislav Tsvetkov enters the competition with another monograph "Constructors for civil engineers - the prefabricated one-storey buildings of reinforced concrete elements", VSU Publishing House "Lyuben Karavelov", ISBN 978-954-331-103-3, 388 pages, 2019.

This monograph consists of seven chapters. Presented are some topics, connected to the design of reinforced concrete structures. The main elements of prefabricated buildings are described and their modeling is commented.

In the documents for the competition, Chief Assistant Stanislav Tsvetkov also presents the monograph "Innovations in industrial Architecture", Publishing House of VFU "Lyuben Karavelov", ISBN 978-954-392-634-3, 183 pages, 2020. There is a co-author - Borislava A. Mancheva-Velkova. Enterprises in different fields of industry are described and the possible structural systems in their buildings are commented.

Chief Assistant Stanislav Tsvetkov participates in the competition with four research projects funded by VFU "Lyuben Karavelov" (Ministry of Education and Science).

Chief Assistant Stanislav Tsvetkov applies specialized software for construction design: Gala Reinforcement; Design expert; Tower; SAP2000; ANSYS; CIVIL FEM.

## **5. Contributions**

Monographs and publications of Chief Assistant Stanislav Tsvetkov are connected with the analysis of different types of building structures. Modeling, numerical experiments and in-depth analysis of the results were performed.

The things presented enrich existing knowledge in the study of building structures. Many of the conclusions drawn are useful for engineers in investment design, as well as for training students.

#### **6. Evaluation of the personal contribution of the candidate**

Of the presented for reviewing materials the personal contribution of the candidate Chief Assistant Stanislav Tsvetkov is visible.

#### **7. Critical remarks and recommendations**

I recommend to Chief Assistant Stanislav Tsvetkov to continue publishing in publications that are referenced and indexed in world-famous databases of scientific information.

#### **8. Personal impressions**

I know the chief assistant Stanislav Tsvetkov from his internal defense of his doctoral dissertation (thesis). I was a member of the scientific jury and wrote a review. It impressed me with a clear presentation of the material. He radiated respect for the audience. Then I communicated with Stanislav Tsvetkov and at scientific conferences. I have a good impression of him.

#### **Conclusion**

With the presented materials of Chief Assistant Stanislav Petrov Tsvetkov are fulfilled scientific and scientometric criteria and requirements for the evaluation of candidates for scientific degrees and academic positions at VSU "Lyuben Karavelov" of the Regulations for the development of academic staff at the University of Structural Engineering and Architecture (VSU) „L. Karavelov - Sofia.

**Based on the above, I confidently suggest Chief Assistant. Dr. Eng. Stanislav Tsvetkov to be elected Associate Professor in the field of higher education 5. Technical sciences, Professional field 5.7. Architecture, construction and geodesy, Building structures (Reinforced concrete structures).**

May 10, 2021  
Sofia

Reviewer: .....  
/ Prof. Dr. Eng. Svetlana Lilkova-Markova /