

R E V I E W

Related to the Procedure for holding the academic position of “Associate Professor” in professional division 7.1. “Medicine”, scientific speciality “Cardiology”, opened for the needs of the First Department in Internal Diseases, Educational Sector “Cardiology”, Faculty of “Medicine”, Medical University “Prof. Dr. Paraskev Stoyanov” – Varna, and the Clinic Cardiac Surgery at “St. Marina” University Hospital – Varna, published in the State Gazette № 102/23.12.2022.

There is only one candidate: Yavor Peychev, MD, PhD, Principal Assistant Professor at the First Department of Internal Diseases, Educational Sector Cardiology, and physician–cardiologist at the Clinic of Cardiac Surgery at “St. Marina” University Hospital – Varna.

Reviewer: Prof. Nikolay Yordanov Penkov, MD, PhD, DSc, Head of Cardiology Clinic, UMBAL “Deva Mariya”, Burgas

Dr. Peychev is born on July 23rd 1961 in Ruse. He completed his secondary education in 1980 at the English Language High School “Geo Milev” – Ruse. In 1988, he graduated as a “Master of Medicine” from the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna. Professional career profile of the candidate: 1988–1990 – physician at III Polyclinic of the Primary District General Hospital – Ruse; 1990–2005 – physician “assistant professor”, physician “senior assistant professor”, physician-cardiologist “principal assistant professor” at the Cardiology Clinic of “St. Marina” University Hospital – Varna; 2005–2023 – physician-cardiologist “principal assistant professor” at the Clinic of Cardiac Surgery of “St. Marina” University Hospital – Varna.

Academic profile: From 1990 to 1997, Dr. Peychev was an “assistant professor”. After meeting all the requirements, he was appointed as “senior assistant professor”, and since 1998 he acquired the position of “principal assistant professor” at the First Department of Internal Diseases, educational sector Cardiology, Medical University – Varna. His overall professional medical experience is 34 years and 5 months, of which 32 years, 5 months and 21 days as “assistant”

and “principal assistant professor” at the Cardiology Clinic of MU-Varna, calculated as of 11.01.2023.

Certificates of Completion of Special Training (CCST). Dr. Peychev has two CCSTs – in Internal Diseases (since 1994) and in Cardiology (since 1988).

Postgraduate training and specialisations: In 1992 – Specialization in “Treatment of Cardiac Arrhythmias” at the Medical University of Freiburg, Germany. In 1993 – Specialization in “Cardiopulmonary Resuscitation”, Michigan State University, Lansing, MI, USA. In 2013 – Professional qualification with recognised legal capacity in “Echocardiography – expert level, Transthoracic echocardiography, Transesophageal echocardiography, and Stress-echocardiography”.

Educational and Scientific Degree. From 2014 to 2017, Dr. Yavor Dimitrov Peychev used to work as an independent graduate on his doctoral thesis. In 2018, he acquired the educational and scientific degree “Philosophy Doctor” (PhD) in the speciality of “Cardiology”. His PhD doctoral thesis was on the subject of “*Prognosis and Prognostic Factors in Aortic Valve Replacement for Aortic Stenosis*”, Diploma № 283/21.05.2018.

Membership in professional and scientific organisations. Dr. Peychev is a member of the Bulgarian Medical Association, Bulgarian Society of Cardiology, Association of Specialists in Echocardiography – “Varna-Echo”, “Heart-Lung” Association, American Heart Association and International Society of Electrocardiology.

Dr. Peychev is fluent in two foreign languages: English and Russian.

Research activity. Dr. Peychev participates in the competition for acquirement of the academic position “**ASSOCIATE PROFESSOR IN CARDIOLOGY**” with the following scientific works.

Scientific works meeting the minimum scientometric requirements:

1. Doctoral thesis for acquirement of educational and scientific degree “PHILOSOPHY DOCTOR” – 1 50.00 pts.

2. Habilitation thesis (Monograph) – 1 100.00 pts.

3. Papers published in scientific journals, refereed and indexed in the world academic research databases – 2 90.00 pts.

4. Papers in peer-reviewed journals not refereed in the world academic research databases, or in **edited collective volumes** – 10 112.50 pts.

Publications exceeding the minimum scientometric requirements:

1. Publications in scientific journals and proceedings – 2 30.00 pts.

2. Publications submitted for obtaining the education and scientific degree Philosophy Doctor – 8 93.16 pts.

Dr. Peychev's overall research output is considerably more extensive and includes: doctoral and habilitation theses; publications in refereed and non-refereed scientific journals – 61; publications in **IF** journals – 4; published book chapter – 1; participation in national and international scientific events – 53.

The research output presented for the minimum scientometric requirements for acquirement of the position of "ASSOCIATE PROFESSOR" accounts for 352.5 pts. This exceeds the required minimum by a significant margin. If the candidate's publications exceeding the required minimum and those presented for doctoral thesis defence would have been added, the score reaches 475.66 points.

Dr. Peychev's papers published in **IF** journals aggregate to **38.202 IF**.

Dr. Peychev is the first or second author in most of the publications presented for the competition. This confirms his contribution to the conduct and completion of research and his proficiency in interpreting and presenting scientific research.

Dr. Peychev's report, presented at the American Heart Association's Annual Scientific Session in 2019 and registered under № IA-10 in the list for "Participation in International and National Scientific Events", was awarded first prize.

The candidate's areas of research and scientific contributions are summarised into the following **4 clinical areas**:

1. Modern pharmacotherapy of heart diseases. Novel antiarrhythmic medications with a focus on atrial fibrillation are reviewed. Antithrombotic therapy receives distinct attention, focusing on new developments and perspectives in thrombolytic and antiplatelet therapy in acute myocardial infarction. Angiotensin-converting enzyme inhibitors and the role of the endothelium, as well as nitrate treatment and nitrate tolerance, occupy an essential place in the candidate's research pursuits.

2. Non-invasive electrocardiography. The candidate's research focuses on the intimate mechanisms of ventricular arrhythmias in patients with IHD, using non-invasive ECG methods. The aim is to discover non-invasive and clinically accessible markers of increased risk of severe ventricular ectopic activity. The following methods were used: 1. Dipyridamole – ECG stress test (inducible myocardial ischemia) in combination with signal-averaged ECG (ventricular late potentials); 2. Dipyridamole – ECG stress test (inducible myocardial ischemia) in combination with analysis of the QT interval dispersion from the standard ECG; 3. Analysis of QT interval dispersion from the standard ECG in female patients with acute coronary syndrome.

Signal-averaged ECG (ventricular late potentials) combined with analysis of QT interval dispersion from standard ECG was used in search of non-invasive markers for changes in ventricular excitation and repolarisation in an isolated, "pure" model of left ventricular hypertrophy.

The current information on the neurohormonal preconditioning and autonomic imbalance, now identified as integral elements of the pathogenetic pathways of heart failure, gave rise to a hypothesis that some non-invasive ECG parameters – the recovery of heart rate after stress (heart rate recovery – HRR), (Holter ECG monitoring in combination with six-minute walk test) and the signal-averaged ECG indices (ventricular late potentials), even in patients with bundle branch block, could be useful for the assessment of the risk of sudden death, as well as for some therapeutic decision making in this category of patients

3. Diagnosis and treatment of operated heart disease with a focus on calcific aortic stenosis. Calcific aortic stenosis holds a significant position in the candidate's

research. All investigated patients are evaluated during the perioperative period and some of the, when indicated – during the intraoperative period. For the purposes of clinical evaluation of the cardiac surgical patient, the entire diagnostic spectrum of cardiology is used, with the echocardiography occupying the central place. Comorbidity profile, sex-specific differences in patients with calcific aortic stenosis, prognosis after surgical aortic valve replacement and factors determining the postoperative prognosis represent some areas of special clinical interest. The author also focuses his interests on the left ventricular hypertrophy in patients with aortic stenosis, with its inseparable “anatomical” and “electrical” aspects, probably modulated by comorbidities and sex-specific differences.

4. Sudden cardiac death. The publications submitted for the competition constitute merely a part of the applicant's publication and teaching activity. The problem of sudden cardiac death is closely related to some of the research areas presented above.

Citations. Dr. Peychev's research works have been cited many times in various scientific publications. As evidence, meeting the minimum scientometric requirements for the position of “Associate Professor”, the candidate presents 4 citations – 3 in science journals refereed and indexed in the world academic research databases and 1 citation in a monograph.

Participation in research projects. Dr. Peychev has repeatedly participated in various international multicentre clinical research trials. He has also been an academic mentor in the project BG05M2OP001-2.002-0001, Student Practices – Phase 1.

The candidate has research profiles in Google Scholar, Scopus, Web of Science, Research Gate, ORCID, ResearcherID, and eLibrary.

Teaching activity. For the last 5 academic years, Dr. Peychev has had an average annual workload of 221 hours, which is testified by Certificate № 112-11/12.01.2023. Of these, 8.4 hours were lectures, and the rest were clinical exercises. The exercise courses were only with English-speaking students. Additionally, Dr. Peychev lectured postgraduate students specializing in cardiology

and trained physicians in echocardiography – expert level, for a professional qualification.

CONCLUSION. Dr. Peychev is an exceptionally proficient physician with two specialities – internal diseases and cardiology. His total work experience amounts to 34 years and 5 months, of which 32 years and 5 months at MU – Varna. This is backed up by significant clinical and teaching experience. He has the necessary qualifications and routinely uses all non-invasive methods in cardiology in his daily practice. Dr. Peychev has expert-level proficiency in echocardiography with excellent theoretical and practical training. Much of his daily medical activity is closely associated with his research in patients with aortic stenosis. This qualifies him as a physician with special training and practical experience in that particularly prevalent and disabling heart disease, requiring special theoretical preparation and practical experience. In the current competition, the candidate contributed research publications ranking well above the minimum requirements for the “Associate Professor” position. Dr Peychev's publications in Impact Factor journals account for 38.202 IF. He is a member of the most prominent Bulgarian and international scientific societies in the field of cardiology. He is a frequent contributor to international and national scientific forums and is renowned within the professional community. He has been involved in a number of multicentre international clinical trials. Dr. Peychev has also been an academic mentor in the Student Practices Project - Phase 1. He is fluent in written and spoken English and Russian. His teaching workload for the last 5 academic years is sufficient in volume. My personal impressions of Dr. Peychev as a physician, academic professor and researcher are excellent. I believe he can lead a scientific team and fully meets the requirements for holding the academic position of “**ASSOCIATE PROFESSOR IN CARDIOLOGY**”. I will therefore vote in the affirmative and recommend to the rest of the Scientific Jury members to cast a positive vote.

20/04/2023

Varna

Reviewer:.....

(Prof. Nikolay Penkov, MD, PhD, DSc)