

To the Chairperson
of the Academic Jury,
Faculty of Medicine
Medical University
"Prof. Dr. Paraskev Stoyanov"
Varna

Review

By Prof. Zhaneta Georgieva, MD, PhD, Medical University – Varna,

Member of the Academic Jury of the competition (Order of the Rector of the Medical University – Varna, No. P-109-288/26 May 2023) regarding a procedure for the acquisition of the academic position "Professor" within the higher education field of 7. "Healthcare and sport", professional subfield 7.1. "Medicine" and the scientific speciality of "Pneumology and Phthysiatry", for the needs of the First Department of Internal Diseases, ES "Pulmonary Diseases and Allergology" at Medical University – Varna and the Clinic for Pulmonary Diseases
UMHAT "St. Marina" Ltd., Varna.

Documents for the competition have been submitted by a single applicant:

Assoc. Prof. Diana Petkova Gospodinova-Valkova, MD, PhD, Medical University – Varna
The announcement procedure for the competition was compliant with the legal requirements and no procedural violations were established.

Brief biographical data: Assoc. Prof. Diana Petkova was born on 28 March 1965 in Novi Pazar. She graduated with a gold medal from First Language School – Varna in 1984. She was a student of "Medicine" at Medical University – Varna from 1984 to 1990. She graduated as the valedictorian of the class of 1990 from Medical University – Varna. Until 1994, Assoc. Prof. Petkova worked as a resident doctor at the Internal Department of the United Regional Clinical Hospital in Shumen and Provadia, and between 1994 and 2017 she worked consecutively as an assistant professor, senior assistant professor and chief assistant professor at the Department of Pulmonary Diseases at Medical University – Varna, as the Head of the "Sleep Medicine and Non-Invasive Ventilation" sector at UMHAT "St. Marina" – Varna, and as the Head of the First Department with the activity of "Sleep Medicine and NIV". In 2001, she acquired a specialist degree in "Internal Diseases", and in 2003 – a specialist degree in "Pulmonary Diseases". In 2009, she defended successfully her dissertation for conferment of the academic degree of "Doctor of Science" on the topic: "Breathing disorders during sleep: assessment of the risk and clinical effectiveness of the application of non-invasive ventilation nCPAP, BIPAP, VPAP in home settings". In December 2011, she was elected to hold the academic position of "Associate Professor" at the Clinic for Pulmonary Diseases at Medical University – Varna. Since 2019, she has been the Head of ES Pulmonary Diseases and Allergology at Medical University – Varna.
Assoc. Prof. Petkova has completed a specialisation in Salzburg – Austria; in 1997, she completed a specialisation in

St. Gallen – Switzerland, and in 2004, she conducted an ERS course in the fields of sleep medicine and non-invasive ventilation in Glasgow. In 2015, she completed a training as an EFQM auditor in Bern, Switzerland.

She acquired a diploma for Auditor in Quality Management from EFQM, Zurich, Switzerland, and a Certificate from the EFQM Foundation – Brussels.

She has the certification to perform the highly specialised activity of “Polysomnography in sleep and wakefulness disorders”. Assoc. Prof. Petkova is the Chairperson of the commission for the acquisition of the certification to perform the highly specialised activity of “Polysomnography in sleep and wakefulness disorders” at Medical University – Varna.

In 2012, she graduated from the speciality of “Social Medicine and Health Management”. She is the Chairperson of the Organisational and Scientific Committees of National Congresses,

of the Bulgarian Society of Pulmonary Diseases with an international participation, she is the organiser and speaker of Summer Schools and courses in Pulmonary Diseases with an international participation, and she is the moderator and speaker of National, International and Regional Scientific Meetings. She was the Chief Editor of the “Heart – Lung” Journal until 2022,

and she is a member of the editorial board of the “ASKLEPIOS international annual of history and philosophy of the medicine” Journal; she is also a member of the editorial board of the “GP Medic” Journal and the “Medic Plus” Journal.

Assoc. Prof. Diana Petkova has been a member of the Management Board of the Bulgarian Society of Pulmonary Diseases since 2010, and she was the Chairperson of the Management Board of the Bulgarian Society of Pulmonary Diseases from 2014 to 2022. She is a member of the National Expert Board on Pulmonary Diseases of the Ministry of Health.

She is an expert of the National Health Insurance Fund (NHIF).

The scientometric indicators for holding the academic position “Professor” with the obligatory minimum of 200 points are fulfilled by Assoc. Prof. Diana Petkova with a total of 304.7 points, and she has 52 citations reflecting the scientific activity of the applicant. 780 points. She has been the scientific supervisor of 1 PhD student who has defended their dissertation successfully – 40 points, and she is the scientific supervisor of 6 PhD students.

Assoc. Prof. Petkova has presented papers and scientific reports in international forums with printed abstracts in foreign periodical scientific journals – 19; Papers and scientific reports presented in national forums – 41

She has provided methodological assistance for the development of 2 scientific reports by students and their presentation in national student forums with international participation.

Monographs and textbooks: Dissertation: **Petkova, D.** “Breathing disorders during sleep: assessment of the risk and clinical effectiveness of the application of non-invasive ventilation nCPAP, BIPAP, VPAP in home settings”. **Petkova, D.**; Dyspnoea – In: Handbook of Palliative Care in Patients with Advanced Cancer, Varna 2003; 33 – 38; **Petkova, D.**; Hypercalcaemia – In: Handbook of Palliative Care in Patients with Advanced Cancer, Varna 2003; 86 – 89; **Petkova, D.**; Cough – In: Handbook of Palliative Care in Patients with Advanced Cancer, Varna 2003; 90 – 94; **Petkova, D.**; Pulmonary Hypertension – In “Internal Diseases” I, edited by Assoc. Prof. Tisheva, MD; **Petkova, D.**; Aetiology and Pathogenesis of Sleep Disorders – In “Pathological Physiology” – A Textbook for Students of Dentistry, Pharmacy and the Medical Colleges.

Main directions of the scientific works:

Breathing disorders during sleep

For the first time in Bulgaria, a study was conducted on the excessive daytime sleepiness and arterial hypertension in healthy adults as the main risk factors for the presence of a breathing disorder during sleep. For the first time in the country, the validated sleepiness scale Epworth Sleepiness Scale was used as a tool for screening and pre-selection of patients with breathing disorders during sleep (A1,D7 – 10;D8 – 1,2,10). Assoc. Prof. Petkova was sponsored with a bronze grant for her participation in an ERS congress in Berlin. For the first time in our country, data has been published regarding patients with breathing disorders during sleep for a Bulgarian group of patients with various breathing disorders during sleep. (A1, D7 – 10; D8 – 1,2,10,15);

A prospective cohort study has assessed the short-term (12 months) and long-term (132 months) compliance to the treatment with non-invasive ventilation in home settings and the success factors of the treatment have been defined from the obtained results. (A1) For the first time in our country, a prospective study on the quality of life has been performed in patients with breathing disorders during sleep. A statistically reliable improvement has been established in the dominant part of the domains characterizing the quality of life 12 months after the start of a treatment with positive pressure. (Dissertation).The connection between the breathing disorders during sleep and the vascular risk factors has been investigated in a study of the ECG characteristics, the clinical manifestations of the disorder in different groups, and the risk factors for a cardiovascular disease. (D8 – 10; 17,28,29,)

A significant methodological contribution for Bulgaria has been the analysis of data regarding the quality of life using the organ-non-specific quality of life questionnaire SF 36. An algorithm for the diagnosis of breathing disorders during sleep has been suggested with a definition of the levels of competence of different structural units of the healthcare system in Bulgaria. (A1) For the first time in our country, a study has been conducted on the disorders of sexuality in patients with breathing disorders during sleep. A comparative study has been conducted in patients from Bulgaria and Switzerland. A prospective study has been conducted regarding the effects of the treatment (A1 1, 7, 43,115) Results have been reported regarding the serum total testosterone levels and the sex hormone binding protein levels in patients with obstructive sleep apnoea syndrome. (6) A publication and a participation in a scientific forum review the characteristics and give methodological guidelines for behaviour regarding the patients with breathing disorders during sleep and a Sars-Cov-2 infection, breathing disorders during sleep and the treatment of COVID-19 in home and hospital settings, the principles of behaviour and restructuring of the work processes at the centres of sleep medicine, the processes of diagnosis and introduction of ventilation in the conditions of a pandemic (An academic reference regarding publications outside the scientometric requirements for holding the academic position "Professor" No. 16; A list of participations in national and international scientific forums: No. 29) A study has been conducted regarding the circadianity of the cortisol rhythm and sleep in a period of remission in patients with schizophrenia. This study is the first of its kind in our country, providing data regarding the disturbances in the circadian rhythms of cortisol secretion and the architectonics of sleep in patients with schizophrenia, a key point in the pathogenesis of mental illnesses. (An academic reference. Publications and papers published in reviewed and edited journals 1). A structural-functional scheme has been developed and the first interdisciplinary centre of sleep medicine based at the University Clinic of Pulmonary Diseases has been established in our country. The work was carried out in a joint project with the Clinic of Pulmonary Diseases and the Centre of Sleep Medicine at the St.Gallen Cantonal Hospital, Switzerland. The accumulated clinical experience has a scientific and practical contribution.

Two publications are related to an evaluation of the effectiveness of pitolisant on excessive daytime sleepiness. The conclusions drawn confirm that the administration of pitolisant significantly reduces the self-assessed daytime sleepiness and fatigue and improves the patient-reported outcomes. (D7: 20,23).

The publications: "Some indicators and biomarkers in breathing disorders during sleep", "Clinical significance of the abdominal visceral adipose tissue in patients with breathing disorders during sleep", which are funded by the "Science" fund of the Medical University – Varna, are a continuation of the scientific research related to the epidemiology, phenotypic characteristics and risk factors among the Bulgarian cohort of patients with breathing disorders during sleep. (D8 – 1, 2, 10, 14, 15, 22; forums: No. 2, 3, 6, 17, 27, 28, 29, 30) A prospective study of patients with breathing disorders during sleep with a view to the determination of the cardiovascular risk has been aimed at the creation of an algorithm for monitoring variables associated with the higher risk of CVD.(19). A methodology for assessment of the visceral adipose tissue has been approbated and introduced as part of the tools for phenotyping the patients with breathing disorders during sleep. Preliminary data have been presented at national and regional forums. (D8 – 14); (22). (A list of participations in national and international scientific forums: No. 35, 36, 43, 46). A study of the coronary artery calcium (CAC) as a marker of coronary atherosclerosis and the biological age of the vessels present the quantitative assessment of the coronary artery calcium score (CACS) in patients with OSA without a known cardiovascular disease (CVD). The 10-year risk of ischaemic heart disease has been determined using the Framingham risk score (FRS). The first interdisciplinary centre of sleep medicine based at the University Clinic of Pulmonary Diseases has been established in our country. The work was carried out in a joint project with the Clinic of Pulmonary Diseases and the Centre of Sleep Medicine at the St.Gallen Cantonal Hospital, Switzerland. The accumulated clinical experience has a scientific and practical contribution to the diagnostic and therapeutic activity.

Non-invasive ventilation

A prospective observation of patients undergoing non-invasive ventilation in different modes (A1) and monitoring of the treatment has been carried out, and the short-term and long-term compliance to the treatment has been tracked and analysed. An algorithm has been introduced for the training and control of the non-invasive ventilation treatment in patients with breathing disorders during sleep (A1, participations in international scientific forums 11)

Oxygen treatment in home settings

The monographic habilitation thesis by Assoc. Prof. Diana Petkova: „**Oxygen therapy in home settings: conditio sine qua non**“ (Academic reference regarding publications B1) summarizes the knowledge and experience gathered so far in the country and offers a comprehensive review of the science-based strategy for introducing, implementing and monitoring the effects of long-term oxygen therapy in home settings, as well as the relevant devices, modalities, indications, contraindications and application models. The monograph increases and deepens the knowledge about the principles of action and the goals of the long-term oxygen therapy in home settings, the effect of the long-term oxygen therapy in COPD and other pulmonary diseases, the international guidelines for conducting long-term oxygen therapy. Key studies and the diagnostic evaluation of the long-term oxygen therapy have been presented, as well as the advantages and disadvantages of the different systems for long-term oxygen supply. The content of the monographic thesis includes 20 chapters that summarise the scientific knowledge, the definitions, the indications and the contraindications,

the prescription rules and the algorithms for introducing and controlling the oxygen treatment in home settings.

The author presents us with a modern analysis of the short-term oxygen therapy (SBOT) and the long-term oxygen therapy (LTOT): nocturnal oxygen therapy (NOT) and palliative oxygen therapy (POT). The selection of the therapeutic device required for the individual patient is also discussed in addition to the economic factors to ensure the suitability for the provision of a sufficient oxygen flow. The results of the Pulmonary League, Varna, are reported, as well as their 13 years of experience working with patients on oxygen therapy in home settings and their relatives. (C1) A group of scientific reports summarises the experience and presents the work of the team in the direction of oxygen therapy in home settings at national scientific meetings of the Bulgarian Society of Pulmonary Diseases (national and international scientific forums (5,8,19).

For the first time in the country, the monograph provides scientifically-based modern knowledge and paves the way for an affordable oxygen therapy in home settings funded by the state for all who need it.

Pulmonary hypertension

Pulmonary arterial hypertension has a significant place in the scientific publications presented for participation in the competition. The application of targeted treatment to patients with pulmonary arterial hypertension has been documented for the first time in our country (AP 13,95, 30,94); the survival rate, quality of life and clinical effectiveness of the applied targeted treatment have been investigated. An article giving an account of methodological guidelines and different tools for researching the quality of life in patients with idiopathic and postthromboembolic pulmonary hypertension has been presented in a referenced and indexed journal. (D7 – 2; D8 – 4; national and international scientific forums 4, 12, 14,)

Pulmonary thromboembolism (PTE), epidemiological data, modern methods for diagnosis and treatment, postthromboembolic pulmonary hypertension

The group of publications in this direction are related to a large-scale retrospective study on PTE and postthromboembolic pulmonary hypertension in our country –

In the conducted retrospective analysis, the prevalence of postthromboembolic pulmonary hypertension after an acute and recurrent PTE has been established. 493 patients with an acute PTE have been followed. The prevalence of postthromboembolic pulmonary hypertension and the prevalence of comorbidity have been established using the Charlson Index. The publications outline the clinical characteristics and problems related to the diagnosis and treatment of patients with a pulmonary vascular pathology. The innovations in the diagnosis and treatment of PAH, PTE and postthromboembolic pulmonary hypertension have been summarised. (D7 – 7, 11; D8 – 19; 7, 9, 20, 21, 22, 24, 25,)

Pulmonary tuberculosis, epidemiology, risk factors, resistance

Original investigations regarding the epidemiology and clinical course of tuberculosis in patients with systemic diseases undergoing a targeted treatment have been presented. Biological therapy has been presented as a new medicinal approach in the treatment of a number of serious diseases D 8 – 5, 9, 12; A list of participations in international scientific forums 15).

Idiopathic pulmonary fibrosis. Several articles and scientific reports summarise the contemporary knowledge of interstitial pulmonary diseases, and the research findings have been presented at national forums with international participation. Other –

Bronchoobstructive diseases, COPD and bronchial asthma – epidemiology, clinical features and treatment – Screening for the incidence of COPD in high-risk groups. (A 12, 20, 15, 40, 19, 42, 47);

Infectious pulmonary diseases: Pneumonias – epidemiological data and clinical characteristics. The publications in this direction include participation in international projects related to the epidemiology, course and characteristics of the bacterial infections of community-acquired pneumonias, nosocomial pneumonias (D7 6, 13, 14, 16, 18, 21, 22, 24). For participation in the competition, a group of publications in referenced periodicals have been submitted, which discuss the problems of the treatment of respiratory tract infections as part of the pre-hospital and hospital care. D 8 – 16, 17, 18; 4, 7, 9, 23).

COVID-19 – clinical characteristics and features of the course, treatment of the pulmonary manifestations. The publications present severe clinical cases of patients with pulmonary cavitations and transplant patients with COVID-19 pneumonia, and they report data from autopsy protocols. The current scientific knowledge has been summarised and methodological guidelines for behaviour regarding the diagnosis and treatment have been given. (16, 17, 19, 20, 23; 31, 32, 33, 34, 37, 38, 44, 45, 48, and international scientific forums: 17, 18)

Teaching activity

Assoc. Prof. Petkova has 32 years of teaching experience at Medical University – Varna with an average annual academic workload of 198 to 223 hours at a standard of 99 hours /Academic Council, Protocol 30/11/.

Assoc. Prof. Petkova, MD, PhD, has been the supervisor of 1 doctor who has defended their dissertation successfully for conferment of the academic degree of “Doctor of Medicine” and the supervisor of 6 doctors currently studying in doctoral programs.

She has been successful as the Head of ES Pulmonary Diseases and Allergology at Medical University – Varna.

She has made a significant contribution to the popularisation of the knowledge of pulmonary diseases as the Chairperson of the Organisational and Scientific Committees of National Congresses

of the Bulgarian Society of Pulmonary Diseases with an international participation, as the organiser and speaker of Summer Schools and courses in Pulmonary Diseases with an international participation, and as the moderator and speaker of National, International and Regional Scientific Meetings.

Clinical activity

Assoc. Prof. Petkova has created and equipped via donations the “Sleep Medicine and Non-Invasive Ventilation” sector, and she has established herself as a successful Head of the First Department with the activity of “Sleep Medicine” at the Clinic for Pulmonary Diseases at UMHAT “St. Marina”. She has made an outstanding contribution to the creation of the direction of “Sleep Medicine” in the country.

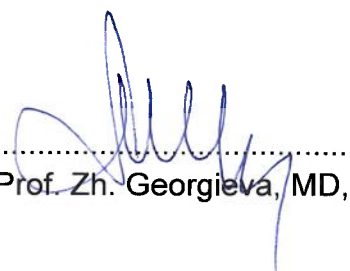
Assoc. Prof. Petkova has made a marked contribution to the creation of lasting connections with leading university clinics in Switzerland, where dozens of our specialists have been trained in a variety of high-end and innovative methodologies. She has made a significant contribution to the introduction of an EFQM model for management and quality management, as well as certificate acquisition at UMHAT “St. Marina” and Medical University – Varna.

In conclusion:

Assoc. Prof. Petkova stands out for her marked professionalism, creativity and introduction of innovative methodologies. She has earned to be regarded with trust and authority among her colleagues at the hospital and throughout the country. From 2014 to 2018 and from 2022 to the present, she has been the Chairperson of the Management Board of the Bulgarian Society of Pulmonary Diseases, a member of the Expert Board on Pulmonary Diseases of the Ministry of Health and an expert of the National Health Insurance Fund (NHIF), which is an outstanding recognition. Assoc. Prof. Diana Petkova is an established specialist with extensive knowledge in the fields of pneumology, sleep medicine and internal medicine. She has an excellent professional training and proven teaching skills. The submitted scientific works are of a marked scientific and practical nature. The publications and reports presented at international scientific forums contribute to the prestige of the speciality of pneumology in our country and abroad. Her scientific production is sufficient in volume, it fulfils the state requirements and it demonstrates profound interests. Assoc. Prof. Petkova is a successful and erudite doctor, an outstanding lecturer, and an excellent teacher. As per the requirements of NACID, she fulfils all criteria for holding the academic position “Professor”.

The scientific contributions and the teaching, clinical and administrative experience of Assoc. Prof. Petkova fulfil the requirements of the Act for the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of Medical University – Varna, which provides me with the grounds to recommend warmly to the esteemed members of the Academic Jury to vote for the conferment of the academic position “Professor” to Assoc. Prof. Diana Petkova Gospodinova-Valkova, MD, PhD.

18 July 2023
Varna


.....
(Prof. Zh. Georgieva, MD, PhD)