

## SHORT REVIEW

for a competition for an academic position “Associate professor”, professional field 7.1. “Medicine”, (“Ophthalmology”-one) for the needs of Medical faculty, Sofia University “St. Kliment Ohridski”; the competition was published in State Gazette N 59 from 26.07.2019 and according to the Order of the Rector of Sofia University “St. Kliment Ohridski”, Sofia – RD 38-634/31.10.2019

**By: Prof. Dr. Silviya Zdravkova Cherninkova-Gopina, MD, PhD, DSc**

At the competition “Associate Professor”, professional field 7.1. “Medicine”, (“Ophthalmology”-one) for the needs of Medical faculty, Sofia University “St. Kliment Ohridski”; published in State Gazette, issue 59 from 26.07.2019, there is one (and only) participant **Dr. Elena Atanasova Mermeklieva – Haralanova, MD.**

**Education and professional experience:** Dr. Elena Mermeklieva graduated in a high English school in Kazanlak in 1991 and was awarded a gold medal. She graduated with great success from the Medical University – Sofia in 1997. From 1998 to 2002 she is a resident in ophthalmology and in 2002, after passing the state exams, she acquires a specialty in ophthalmology. From 2007 to 2009 she has been an ophthalmologist in “Alexandrovska” University Hospital, Clinic of Ophthalmology, Unit of vitreoretinal surgery and eye trauma.

Dr. Elena Mermeklieva has specialized in many prestigious ophthalmology clinics abroad. In 2007 she specialized in „Moorfields Eye Hospital“, London, England – oculoplastics, cornea, cataract, vitreoretinal surgery; in 2008 – she specializes in New York Eye & Ear Infirmary, New York, USA - plastic and reconstructive surgery of the eyelids, orbit and lacrimal system with a Certificate of Continuing Education from Healthcare Compliance Certification Board, USA and Certificate of Completion from Healthcare Compliance Strategies, USA; in 2008 – specialization in University Eye Clinic, Ljubljana, Slovenia in OCT, FA, laser-therapy, electrophysiology, neuro-ophthalmology; as well as some short termed specializations in

Salzburg, Austria in 2012; in Nagpur, India in 2013; in Prague, Czech Republic in 2013; in Berlin, Germany in 2017 and more.

**Scientific activity:** In 2018, Dr. Elena Mermeklieva acquired an academic and scientific degree "Doctor" after a dissertation thesis on a topic "Changes in the values of the electrophysiological studies of visual analyzer in patients with diabetes mellitus". In her dissertation, Dr. Mermeklieva developed a methodology that incorporates modern, non-invasive and highly informative electrophysiological methods such as pattern electroretinography and pattern visual evoked potentials. With the help of these diagnostic methods, the author established the earliest and preclinical changes of the retina and visual pathway in patients with diabetes mellitus, which enriches the literature and supports the practice.

Besides the dissertation, for the current competition Dr. Elena Mermeklieva has presented herself with a total of 42 real publications in specialized scientific journals (39 of which are outside the dissertation), one author's monograph, one author's practical guide and 26 participations with abstracts in international and national medical congresses and symposia.

Dr. Elena Mermeklieva has 7 publications in international journals, referenced in worldwide databases, with ISI impact factor (6 of which are outside the dissertation); 6 publications in international or Bulgarian journals, referenced in worldwide databases; 1 publication in an international journal with a scientific review and 26 publications in national journals with a scientific review. In the 6 publications with impact factor, besides the dissertation, she is the only author; in the 6 publications in journals, referenced in worldwide databases, Dr. Mermeklieva is the lead author and from the 26 publications in Bulgarian medical journals with a scientific review, she is the lead author in 13 of them.

The main areas of Dr. Elena Mermeklieva's scientific interest are electrophysiology, neuro-ophthalmology, retinal diseases, inflammatory and tumor diseases of the eyes, eye trauma.

Her monographic study "Electrophysiology of Vision – basic principles and clinical application" is written in an exhaustive and competent manner. The author examines in detail all the electrophysiological methods used in the diagnosis of diseases of the visual analyzer since the emergence of electrophysiology to the present moment. The extensively illustrated clinical case reports are very indicative of the importance of this type of research for the diagnosis and prognosis of many inherited and acquired ocular, neurological and some systemic diseases.

Dr. Elena Mermeklieva's monograph is the only edition of its kind in Bulgarian, dedicated to the electrophysiology of vision. This is a complex matter that the author skillfully manages to present in a clearer form to make it accessible to a larger number of specialists - ophthalmologists, electrophysiologists and neurologists. It is structured in three separate chapters, each with its own bibliography.

The practical guide by Dr. Elena Mermeklieva „Electrophysiological methods in ophthalmological and ophthalmo-neurological practice” is a valuable tool for ophthalmologists, neurologists and electrophysiologists. The author describes in detail the technique of the performance of each electrophysiological study and also gives guidance for which disease, which type of examination is most informative.

For the most part (33 issues) the publications of Dr. Elena Mermeklieva are devoted to the application of electrophysiological methods in the diagnosis of a number of diseases. Dr. Elena Mermeklieva's interest in this field dates back to her student years and her first publication on this topic was at a Student Scientific Session, where the results of an experimental study on the effect of nerve growth factor on the regeneration of traumatic visual nerves of rabbits were presented by monitoring their electrophysiological activity. The report was honored with a diploma for contribution to the development of science.

In the next years, her interest in the method of Visual-evoked Potentials (VEPs) remains, which is an extremely informative objective method for the study of the function of the visual afferent system in a number of neuro-ophthalmological, neurological and some systemic diseases (18 issues). Dr. Elena Mermeklieva is also involved in researches using other electrophysiological examinations such as auditory evoked potentials and intraoperative monitoring of brain function, which has not been conducted in Bulgaria before (4 issues).

Dr. Mermeklieva has studies of great interest in the sphere of neuro-ophthalmology – opticomyelitis, antiphospholipid syndrome with ocular involvement, multiple sclerosis and rare diseases with ophthalmo-neurological involvement (7 issues). In two articles, the author analyzes the informative nature of the different electrophysiological methods - multifocal ERG, full-field EF, pattern ERG and Visual-evoked potentials in retinal dystrophies. She has also scientific works in the field of retinal detachment, diabetic retinopathy, inflammatory diseases and eye traumas, presented at scientific forums (6 issues).

**The major contributions** of Dr. Mermeklieva's work are related to the introduction of many electrophysiological methods in Bulgaria – pattern electroretinography, full-field electroretinography, together with the establishment of an original methodology for simultaneous registration of pattern electroretinography and visual evoked potentials in ophthalmological, neuro-ophthalmological and some systemic diseases. Reference values have been made for these tests for the Bulgarian population, which contribute to the statistical reliability of her studies.

**The total ISI impact factor** of Dr. Elena Mermeklieva's publications is **5,943**; **her personal impact factor is 5.94.**

Dr. Elena Mermeklieva is a participant in 2 approved scientific projects in a co-authorship, one of which was funded by Medical University - Sofia, 1996-1997, dedicated to the study of brainstem auditory evoked potentials in acute cerebral circulation disorders and a second, funded by the National Research Fund, 2016-2017, dedicated to the establishment of a new approach in decision making. She is a member of the Editorial board of 2 international and one national journals, an abstract reviewer of 5 international journals, referent in the world database Scopus, Web of science, as well as an abstract reviewer at the World Congress of Ophthalmology, 2016, Mexico.

Apart from the scientific and diagnostic-therapeutic activity, Dr. Mermeklieva is also involved in **academic teaching activities**. She is a lecturer of the basic ophthalmology course for residents, Medical faculty, Medical University-Sofia from 2016 to the present moment (2019). She delivers lectures to nurses and midwives in Medical University, Varna, Veliko Tarnovo branch. For the 2018-2019 academic year, her teaching activity includes **3 hours of lectures and 20 hours of exercises**. Furthermore, since 2007 Dr. Mermeklieva works in the Clinic of ophthalmology “Alexandrovska” University hospital, Sofia, where she participates in practical training (diagnostic-therapeutic activity) of residents in ophthalmology in the same clinic.

Dr. Elena Mermeklieva's professional qualities are indisputable. She is one of the well-trained ophthalmologists, with a qualification and competence in the diagnosis and surgery of eye diseases, profiled in the field of electrophysiology of the afferent visual system.

**In conclusion**, Dr. Elena Atanasova Mermeklieva-Haralanova, MD, PhD has all the qualities and meets all the criteria of Sofia University "St. Kliment Ohridski", Sofia, to be elected “Associate Professor” for the needs of the Medical Faculty, Sofia University “St. Kliment

Ohridski”, Sofia. I am confidently giving a positive vote – “YES”, for the election of Dr. Elena Atanasova Mermeklieva-Haralanova, MD, PhD for “Associate professor in ophthalmology”.

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