

REVIEW

by **Acad. Prof. Dr. Ivan Gospodinov Milanov MD, PhD, DSc**

for holding an academic position "Associate professor"
professional field 7.1. "Medicine", scientific specialty "Ophthalmology"
in Medical faculty, Sofia University "St. Kliment Ohridski"
the competition was published in State Gazette № 59/26.07.2019
the only participant being Dr. Elena Atanasova Mermeklieva – Haralanova, MD, PhD.

The Review is prepared in accordance with the Law for the development of the academic staff and the Regulation for the conditions and the procedure for acquiring of academic degrees and appointment of academic positions in Sofia University "St. Kliment Ohridski"

Biographical data and professional realization

Dr. Elena Mermeklieva was born in the town of Kazanlak. Upon her graduation from the English Language High School she was awarded a gold medal for outstanding academic performance. In 1997 she graduated with honors from the Medical University - Sofia – "master" degree of medicine. In 2002 she acquired an "ophthalmology" specialty. In the period between 2003 and 2004 she completed a full course in Health Management in the Medical University of Sofia. Dr. Elena Mermeklieva has 20 years of experience as an ophthalmologist. In the period between 2002 and 2006 she worked in the out-patient care institutions in Sofia and since 2007 she has been an ophthalmologist in "Alexandrovska" University hospital, Clinic of ophthalmology, Unit of vitreoretinal surgery and eye trauma. Since May 2019 she has also worked as an ophthalmologist in the ophthalmology department of "Lozenetz" University hospital

In 2007 Dr. Elena Mermeklieva specialized in „Moorfields Eye Hospital“– London – oculoplastic surgery, cornea, cataract, vitreoretinal surgery. In 2008 she specialized with one of the best oculoplastic surgeons in New York, USA - oculoplastic and reconstructive surgery of the eyelids, orbit and lacrimal system. In the next several years she acquired numerous specializations

abroad: Slovenia - OCT, Fluorescein angiography, laser-therapy, electrophysiology, neuro-ophthalmology. In Austria and India – cataract surgery, in the Czech Republic – retinal diseases and in Berlin - electrophysiology.

Dr. Mermeklieva was awarded many international educational grants by reputable international organizations, such as: SOE Educational grant - 2007, IFOS/ICO International Fellowship – 2008, EBO grant for teachers – 2008, AAF/OMI grant – 2012, LIONS Club International Grant – 2013. She has also attended an impressive number (39) of specialized courses in ophthalmology and aesthetic medicine. She has certificates for highly specialized activity in ophthalmology - laser - therapy and fluorescein angiography

Since 2017 Dr. Elena Mermeklieva has been teaching doctors specializing in ophthalmology in the Medical University - Sofia and since 2018 she has been lecturing students nurses and midwives in Veliko Tarnovo branch of the Medical University - Varna.

In 2018 she acquired her PhD degree after defending her dissertation "Changes in the values of the electrophysiological studies of visual analyzer in patients with diabetes mellitus"

In 2018 she published her monograph "Electrophysiology of vision basic principles and clinical application" and the practical guide „ Electrophysiological methods in ophthalmological and ophthalmoneurological practice”

She is a member of the Bulgarian Ophthalmology Society, the Union of the Eye Doctors in Bulgaria, Bulgarian Glaucoma Association, Bulgarian Association of clinical electromyography and evoked potentials and also a member of the Federation of the Healthcare Unions of the Confederation of the Independent Trade Unions in Bulgaria.

She is a member of the Editorial board of several medical scientific journals - “International Journal of Ophthalmology & Visual Science, “The Clinical Ophthalmologist Journal”, “Diabetes and Islet Biology” as well as the Bulgarian specialized medical journal „Medicart”. In 2016 Dr. Mermeklieva was an abstract reviewer at the World Congress of Ophthalmology in Guadalajara-Mexico. She has also reviewed 7 articles in some referent journals in the world database Scopus, Web of science with ISI Impact factor

In 1997 Dr. Elena Mermeklieva’s scientific work at the Student Scientific Session - Medical University - Sofia was awarded a certificate and in 2017 she received the First Prize for the Best poster at the 12th National Congress of the Bulgarian Ophthalmology Society with international

representation. She speaks fluently three foreign languages – English, Greek and Russian and has excellent computer literacy.

Scientometric data

Dr. Elena Mermeklieva has provided the following scientific works for participation in the competition:

Dissertation

Monograph

Practical Guide

42 real publications, including:

- 3 connected with her dissertation, one of which was published in a journal with ISI impact factor
- 39 not referring to the dissertation, of which:
 - 6 in international journals referred in the world database Scopus, Web of science with ISI impact factor – first and only author, total ISI impact factor – 5.943, personal ISI factor – 5,94
 - 2 in international journals referred in the world database Scopus, Web of science with SJR impact factor – first author
 - 4 in Bulgarian journals referred in the world database Scopus, Web of science – first author of all 4 publications
 - 1 in an international journal with scientific reviewing - third author
 - 26 in national medical journals with scientific reviewing – she is the first author of 13 of them
- 3 participations in scientific forums abroad, apart from the ones for acquiring a PhD – she is the first author of two of them
- 23 participations in national scientific forums (21 of them do not refer to acquiring of PhD degree) – she is the first author of 6 of them.

According to the reference concerning the fulfillment of the minimum national requirements for the relevant scientific research area, the real points of Dr. Elena Mermeklieva are 1502,38.

From the 42 real publications (3 of which before acquiring of PhD degree) the distribution is as follows:

First author - 28 (67%).

Second author - 2 (5%).

Third and subsequent author - 12 (28%).

From the 26 published abstracts (2 of which before acquiring of PhD degree), the distribution is as follows:

First author - 8 (31%).

Second author - 3 (12%).

Third and subsequent author - 15 (57%).

According to the reference provided by CML, MU – Sofia, 4 Bulgarian citations were found, 4 citations were found in the database Scopus and 4 citations were found in the data base Web of Knowledge.

According to the reference provided by NCID 6 citations were found in the database Scopus, Web of science and other databases. The IF of the journals in which the citations are, is 0,453, SJR – 0,267

According to the reference provided by CML, MU – Sofia and NCID the total impact factor of Dr. Elena Mermeklieva's publications, excluding her dissertation, is 5,943 and her personal impact factor is 5,94. A fact worth noting are her publications in reputable international medical journals with high impact factor such as European Journal of Ophthalmology, Neurophysiologie Clinique, Biotechnology & Biotechnological Equipment.

The main fields of scientific researches of Dr. Mermeklieva are connected with the electrophysiology, ophthalmo-neurology, retinal diseases, inflammatory and tumor diseases of the eyes, traumas

The dissertation of Dr. Elena Mermeklieva - "Changes in the values of the electrophysiological studies of visual analyzer in patients with diabetes mellitus" is dedicated to a significant problem in the area of ophthalmology – visual analyzer impairment as a complication of diabetes mellitus and the role and importance of some electrophysiological methods for the early pre-clinical detection of impaired visual analyzer function. Diabetes mellitus is a socially significant disease, which affects a large percentage of the active population in the world and in many cases causes blindness. Due to that fact the discovery of new methods for the early detection of the pre-clinical damage is of crucial importance for the prophylactics and prevention of the complications caused by diabetes mellitus.

The dissertation of Dr. Mermeklieva is presented on 205 standard typewritten pages and the illustration materials include 124 tables and 60 figures. The reference includes 24 pages and contains 312 literary sources, out of which 17 are in Cyrillic script and 295 are in Latin script.

The monograph "Electrophysiology of vision basic principles and clinical application" was published in 2018. All the electrophysiological methods (EF) are studied competently and in details – electroretinography (ERG), electrooculography (EOG) and visual evoked potentials (VEPs). ERG and EOG are used to diagnose and monitor a number of retinal diseases, and VEPs depend on the functional integrity of the entire visual pathway from photoreceptors in the retina, through the optic nerve, the optic tract, optical radiation to the optical cortex. EF methods are widely used in the study of the visual analyzer function in a number of diseases in the ophthalmological and neurological practice, for objective measurement of the visual acuity and the visual field in non-cooperative patients, young children and in simulation. Another important application of the EF methods is connected with the establishment of the drug and some other substances toxicity

The monograph of Dr. Elena Mermeklieva is the only publication in Bulgarian language which describes the nature, formation and development of the electrophysiology of vision. The different electrophysiological techniques and their application in a different ophthalmological and ophthalmo-neurological diseases are studied in great details. The author has presented her own experience along with some interesting clinical cases. The large number of graphics and illustrations give the doctors at whom it is targeted the opportunity to get a quick and easy insight into the depths of electrophysiology. The complicated subject matter is skillfully presented in a more comprehensive way, so that it is accessible and interesting for a wider group of specialists – ophthalmologists, neurologists and electrophysiologists, because it is invaluable in the diagnosis and monitoring of many congenital and acquired diseases and is also a useful expert tool in the medical activity. It is structured into three separate chapters, each of which has its own bibliography.

The Practical guide for specialists ophthalmologists, neurologists and physiologists - "Electrophysiological methods in ophthalmological and ophthalmoneurological practice" studies in details the mechanism of execution of the different electrophysiological methods and provides recommendations which diseases the concrete study is most relevant to.

Most of the publications (33) are dedicated to the electrophysiological methods of research in different diseases. The interest of Dr. Mermeklieva to this field of research dates back to her student years. Her first study on the topic was presented at the Students scientific session in 1997, where she reported the results of the experimental study on the impact of nerve growth factor on the regeneration of traumatically damaged optic nerves of rabbits by monitoring their electrophysiological activity. The report was awarded with a certificate for its contribution to the scientific development.

During the years that followed she remained interested in the field of visual evoked potentials as an objective method for examining the visual analyzer function in a number of ophthalmological, neurological and some systemic diseases. Dr. Elena Mermeklieva took part in 4 studies which apply also other uses of the electrophysiological methods like auditory evoked potentials and intraoperative monitoring of the brain function, which until then had not been performed in Bulgaria.

Dr. Elena Mermeklieva has also 7 researches in the field of neuro-ophthalmology – in opticomyelitis, antiphospholipid syndrome with ocular involvement, multiple sclerosis, and rare diseases with ophthalmic-neurological involvement.

During her specialization in the USA she also took part in an international scientific research which presents a rare case of orbital shwannoma.

Dr. Elena Mermeklieva has 6 scientific researches in the field of retinal detachment, inflammatory diseases and eye traumas, which were presented at scientific forums and enrich the knowledge of the ophthalmological community.

The main contribution of Dr. Elena Mermeklieva is connected with the development of a number of electrophysiological methods in Bulgaria – pattern electroretinography, full-field retinography and also with the creation of an original method for simultaneous registration of pattern electroretinography and visual evoked potentials in ophthalmological, neurological and some systemic diseases. She also has researches in the field of multifocal EF methods in retinal dystrophies. She has developed reference values for this research data for the Bulgarian population. She is one of the few opthalmologists – electrophysiologists in Bulgaria.

Academic teaching activity

Dr. Elena Mermeklieva has provided a reference from the Department of Ophthalmology, Medical University - Sofia, which states that since 2017 she has been a lecturer of a basic course for specializing doctors in ophthalmology. Since 2018 she has been a lecturer of students, nurses and midwives in the Veliko Tarnovo branch of Varna Medical University

In 2018 she published the Practical guide for specialists ophthalmologists, neurologists and physiologists „Electrophysiological methods in ophthalmological and ophthalmological practice”, where the technique of performing all electrophysiological studies is discussed in great detail.

Since 2007 Dr. Mermeklieva has worked in Clinic of ophthalmology “Alexandrovska” University hospital, where her everyday work is connected with the practical training of specializing doctors from the front - office through the hospital unit to the operating room, helping them to master up all the practical skills connected with the diagnostic and therapeutic work plan.

Scientific research activity

Dr. Elena Mermeklieva has taken part in two scientific research projects – one of them is “InterCriteria Analysis – A new approach to decisions making” financed by the National Fund for scientific research, 2016-2017, DFNI-I-02-5, the other one is “Model for analysis of brainstem auditor - evoked potentials in patients with acute disorders of the cerebral circulation” – in the contests of Medical University of Sofia for financial support in 1996-1997.

Dr. Elena Mermeklieva is a co-researcher in 7 clinical trials phase III and is a holder of a certificate for good clinical practice in clinical research in Bulgaria.

In conclusion, the professional and personal qualities of Dr. Elena Mermeklieva are undeniable. She has excellent qualifications and expert knowledge in the field of ophthalmology, electrophysiology and neuro-ophthalmology. In the medical circles Dr. Elena Mermeklieva has the reputation of an excellent diagnosticist and ophthalmologist. She is an established and reputable expert with significant contribution to the scientific, practical, diagnostic, therapeutic and surgical activity.

The candidate complies with the quantitative and qualitative criteria for scientific research, academic lecturing and medical and diagnostic activities of Sofia University "St. Kliment Ohridski" for the academic position "Associate professor".

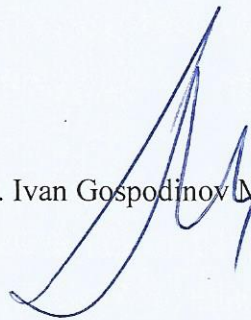
Based on the analyses of her scientific works, lecturing and extensive clinical experience in the field of ophthalmology, electrophysiology and neurophysiology, I recommend Dr. Elena Mermeklieva MD, PhD, to be elected to the academic position "Associate professor" for the needs of the Medical faculty, Sofia University "St. Kliment Ohridski".

30.11.2019 г.

Sofia

Reviewer:

Acad. Prof. Dr. Ivan Gospodinov Milanov MD, PhD, DSc

A handwritten signature in blue ink, consisting of a large, stylized initial 'M' followed by a smaller 'I' and a final flourish.