

## **BRIEF HISTORICAL OVERVIEW OF THE INTERNATIONAL CONFERENCES ON MEDICAL PHYSICS (ICMP) 1965-2024**

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### **Abstract**

The paper gives a brief historical overview of the beginning and development of the International Conferences on Medical Physics (ICMP) in the period 1965-2023 - a very important activity of the International Organization for Medical Physics (IOMP), related to the global development of medical physics. It further describes the beginning and development of the World Congresses (WC) on Medical Physics and Biomedical Engineering in the period 1979 – 2022. The paper also briefly mentions the International Conferences on Medical Physics Education, which further supported the international development of the profession. Finally the paper emphasizes the need of close cooperation of the Regional Conferences and Congresses with the ICMP and WC.

### **The beginning of the International Conferences on Medical Physics**

International Conferences on Medical Physics (ICMP) are very important meetings in the profession and since the formation of IOMP in 1963 one of the powers of the Organisation was “To organize international meetings and conferences”. The first ICMP was organised in Harrogate, UK (8-10 September 1965). This first ICMP was a great success, gathering over 500 medical physicists from 24 countries. Patron of the Conference was Sir John Cockcroft (laureate of Nobel Prize in Physics, 1951), President of the Conference was Prof. W Mayneord (IOMP President at the time), Chair of Scientific Com was Prof. J Rotblat and Secretary was Mr G Innes. In an Annex to this MPI-HE issue we present the Book with Abstracts from this 1<sup>st</sup> ICMP, in order to show to the readers the state of art of the scientific development in the profession in mid-1960s as a basis for assessing the progress in medical physics in the following 60 years.

Four years later the 2<sup>nd</sup> ICMP was organised in in the USA (Boston, USA, 10-14 August, 1969) with Organisers E. W. Webster, John Laughlin and Lauriston Taylor.

The venues of the next ICMPs continued to be associated with the Founding Societies of IOMP (from UK, USA, Sweden and Canada). The 3<sup>rd</sup> ICMP was in Goteborg, Sweden (30 July – 4 August 1972) with Organisers: Roland Kardefors, Ingemar Petersen, and Robert Magnusson. The 4<sup>th</sup> ICMP was in Ottawa, Canada (25-30 July, 1976), organised by Paul Phalzner from Ottawa Cancer Clinic. This ICMP has specific importance, as at that Conference a decision was taken the next 5<sup>th</sup> ICMP (planned to be in Jerusalem) to be made to coincide with the International Conference of Biomedical Engineering, thus forming the basis of future World Congresses of Medical Physics and Biomedical Engineering (and basis for the formation of the Union between medical physics and biomedical engineering organisations – the International Union for Physical and Engineering Sciences in Medicine (IUPESM).

Thus the 5th ICMP took place in Jerusalem, 19-24 August 1979, organised by the Israeli Association of Physicists in Medicine and International Federation for Medical and Biomedical Engineering. Indeed this joint International meeting (the 5th for the medical physicists and the 12th for the biomedical engineers) was accepted as the 1<sup>st</sup> World Congress for both professions.

### **ICMP and World Congresses in Medical Physics and Biomedical Engineering**

Following the joint international meetings of medical physicists and biomedical engineers in Jerusalem 1979, for about 25 years the ICMPs were coinciding with the World Congress (WC):

-6<sup>th</sup> ICMP and 2<sup>nd</sup> WC in Hamburg, Federal Republic of Germany (5-11 September 1982) with Organizer: Universität Hamburg, D. Harder (German Society for Medical Physics - DGMP) and W. Bleifeld (German Society for Biomedical Technology).

-7<sup>th</sup> ICMP and 3<sup>rd</sup> WC in Espoo, Finland (11-16 August 1985); Organizer: Finnish Society for Medical Physics and Medical Engineering.

-8<sup>th</sup> ICMP and 4<sup>th</sup> WC in San Antonio, USA (6-13 August, 1988); Organizers: Gary Fullerton, Robert Nerem, and David Kopp. At this event was inaugurated the IUPESM Award of Merit.

-9<sup>th</sup> ICMP and 5<sup>th</sup> WC in Kyoto, Japan (7-12 July, 1991); Organizers: Hiroshi Abe, WC President and F. Kajiyu, Secretary General.

-10<sup>th</sup> ICMP and 6<sup>th</sup> WC in Rio de Janeiro, Brazil (21-26 August 1994); Organizers: Carlos Eduardo de Almeida and Ronney Panerai (Co-Presidents).

-11<sup>th</sup> ICMP and 7<sup>th</sup> WC in Nice, France (14-19 September 1997); Organizers: Pierre Aletti, J-P Moucucci, and Rigaud (Co-Presidents).

-12<sup>th</sup> ICMP and 8<sup>th</sup> WC in Chicago, USA (25-28 July 2000); Organizers: William Hendee and Al Potvin (Co-Presidents). At this event was inaugurated the IOMP Marie Curie Award.

-13<sup>th</sup> ICMP and 9<sup>th</sup> WC in Sydney, Australia (19-24 August, 2003); Organizers: Barry Allen and Nigel Lovell (Co-Presidents). At this WC and ICMP the IOMP President A Niroomand-Rad and the ExCom decided to have additional ICMPs in the period between World Congresses. This was related to the fact, that the IOMP Regional Organisations (Federations: EFOMP in Europe; AFOMP in Asia; SEAFOMP in South-East Asia; MEFOMP in the Middle East; ALFIM in Latin America and the Carribean; later FAMPO in Africa) had already started to have their own Regional Medical Physics Conferences and IOMP wanted to merge its ICMP with some of these. This way the 14<sup>th</sup> ICMP was held together with EFOMP in Nuremberg, Germany (14 – 17 September 2005, together with EFOMP); Organizer: Willi Kalender.

Thus the following 10<sup>th</sup> WC was associated with the 15<sup>th</sup> ICMP (together with the Conferences of AFOMP and SEAFOMP) in Seoul, South Korea (27 August 27 to 1 September 2006); Organizers: Kim Sung-Kyu and Tae-Suk Suh (Co-Presidents). At this event was inaugurated the IOMP Harold Johns Medal Award.

The 16<sup>th</sup> ICMP was organised together with MEFOMP in Dubai, United Arab Emirates (14-16 April 2008); Organizers: Jamila Salem Al Suwaidi, Emirates and Peter HS Smith, UK.

The 17<sup>th</sup> ICMP was held together with the 11<sup>th</sup> WC (and with EFOMP) in Munich, Germany (7-12 September 2009); Organizers: Wolfgang Schlegel and Olaf Dossel (Co-Presidents). At Munich the IOMP ExCom decided the next ICMP to be together with ALFIM in Brazil, while the following ICMP in 2013, celebrating the IOMP 50<sup>th</sup> Anniversary, to be in the UK (together with EFOMP).

The 18th ICMP was organised together with ALFIM in Porto Alegre, Brazil (17-20 April 2011); Organizer: Ana Maria Marques da Silva.

The 19th ICMP was associated with the 12<sup>th</sup> WC (together with the Conferences of AFOMP and SEAFOMP) in Beijing, China (26-31 May 2012); Organizers: Depei Liu, Yubo Fan, and Yimin Hu (Co-Presidents).

The 20<sup>th</sup> ICMP was in Brighton, UK (1-4 September 2013); Organizers: IOMP, IPEM (the UK society) and EFOMP, Peter Jarritt (UK), William Hendee (USA). At this event was inaugurated the IOMP Fellowship scheme.

The 21<sup>st</sup> ICMP was associated with the 13<sup>th</sup> WC (together with the Societies from North America – AAPM and CAMP) in Toronto, Canada (7-12 June 2015); Organizers: David Jaffray and Tony Easty (Co-Presidents).

The 22<sup>nd</sup> ICMP was organised together with SEAFOMP and AFOMP in Bangkok, Thailand (9-12 December, 2016); Organizer: Anchali Krisanachinda, Tae-Suk Suh and Slavik Tabakov (Co-Presidents). At this event were inaugurated the IOMP John Mallard Award and the IDMP Award. From this event the Abstracts of the ICMPs were published by the free online IOMP Journal Medical Physics International, thus keeping in one place a record of the constant progress of the profession.

The 23<sup>rd</sup> ICMP was associated with the 14<sup>th</sup> WC in Prague, Czech Republic (3-8 June 2018); Organizer: Jaromír Cmíral and Libor Judas (Co-Presidents).

The 24<sup>th</sup> ICMP was organised together with ALFIM in Santiago, Chile (9 – 12 September 2019); Organizer: Jose Luis Rodriguez, Rodolfo Alfonso and Madan Rehani (Co-Presidents).

The 25<sup>th</sup> ICMP was associated with the 15<sup>th</sup> WC in Singapore (12 – 17 June, 2022); Organizer: Lip Teck Chew (IOMP), Chwee Teck Lim (IFMBE), Co-Presidents. Due to the pandemic the planned WC for 2021 was postponed to 2022. Also due to the pandemic situation this was the first hybrid (in person and virtual) Congress (and ICMP) in the profession.

The 26<sup>th</sup> ICMP was organised together with AFOMP and SEAFOMP in Mumbai, India (6-9 December 2023); Organisers: D K Aswal, J Damilakis.

The 27<sup>th</sup> ICM is planned to be during the 16<sup>th</sup> WC in Adelaide, Australia (29 September – 4 October 2025); Organisers: Eva Bezak and Adrian Richards (Co-Presidents).

### **International Conference on Medical Physics Education and Training**

As seen from the 1<sup>st</sup> ICMP Book with Abstracts (1965), from the very beginning the Scientific Conferences included subjects related to organisation, professional development and later education.

The first International Conference dedicated to Medical Physics Education was organised in Budapest, Hungary, 12-14 November 1994; Organisers: C Roberts, S Tabakov, C Lewis and P Zarand, N Richter and I Polgar. The objectives of the Conference (supported by the EU) were to establish the status of medical physics education in Central/Eastern European countries, to increase East/West European cooperation on the subjects and to formulate proposals for the advancement of medical physics education in Eastern Europe. This International Conference attracted participants from 23 countries and triggered the development of medical physics university courses in many of the Eastern European countries. After the Conference reports with the status of medical physics education in Europe were published in a book, which is included in an Annex to this MPI-HE issue. The book presents a broad picture of the status of medical physics education in Europe in mid-1990s.

Following this Conference three other International Conferences were organised by members of the above team:

-The International Conference on Medical Physics Training in ICTP, Trieste, Italy (24-26 September 1998); Organisers: S Tabakov, C Roberts, A Benini, L Bertocchi;

-The International Conference on Medical Physics e-Learning in ICTP, Trieste, Italy (9-11 October 2003); Organisers: S Tabakov and V Tabakova;

-The International Conference on Medical Physics e-Encyclopaedia in ICTP, Trieste, Italy (23-26 October 2008); Organisers: S Tabakov and V Tabakova. This Conference included 21 Presidents (past and current) of Medical Physics National Societies and International Federations/Organisations.

These pioneering Educational Conferences boosted significantly the interest and development of activities related to professional education and training. This can be seen in the significant increase of new medical physics University programmes as well as in the increase of educational sessions at ICMPs and WCs. For example the WC2003 included 6 sessions and one workshop on MP Education; WC2006 included a dedicated Track with 9 sessions and one Workshop on Education, WC2009 included a Track with 7 sessions and two Workshops on Education; WC2012 included 6 sessions and 3 Mini-Symposia, etc. These activities were also related to the initiation of other international activities on medical physics education/training:

-The transformation of the International College on Medical Physics at ICTP Trieste into a “Train-the-Trainer” activity in 2002, what continues successfully now over 20 years;

-The IOMP Project “Model Curricula in Medical Physics” (2006-2009), led by P Sprawls and S Tabkov, which later triggered the IAEA project (and related Guide) TCS 56 “Postgraduate Medical Physics Academic Programmes”;

-The book Medical Physics and Engineering Education and Training, 2011, Edited by S Tabakov, P Sprawls, A Krisanachinda, C Lewis, (2011), ISBN 92-95003-44-6, ICTP, Trieste, Italy

-The formation of the IOMP Journal Medical Physics International in 2013, dedicated to educational and professional development (Founding Editors S Tabakov and P Sprawls), which quickly established itself as one of the well respected journals in the profession.

## Conclusion

This brief overview is based on the IOMP History Tables and presents additional information about the International Conferences and World Congresses, based on the authors participation in all ICMPs and WCs after 1982 (in most of these as member of the Organising Committee or the Advisory Board). These Conferences and Congresses provided an excellent support for the progress of the profession and its global spread. Together with these, the IOMP Regional Organisations (Federations) initiated from around 2000 its Regional Conferences (some later named Congresses), which grew and provided further support for the professional development, associated with the specificities of the Region/Continent. The largest and most important one currently being the Annual Conferences of the American Association of Physicists in Medicine (AAPM), which some times surpass the World Congresses in size and importance. Some Asian and European Congresses also became very large and important activities. It will be important for the ICMPs and the World Congresses to combine with these Regional Congresses in order to reflect not only the Regional development of the profession, but also its global growth and importance for the global healthcare.

## Acknowledgements

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The book with Abstracts of the International Conference of Education (Budapest, 1994) was distributed free all over the world and I am grateful to my Co-Editors and all who contributed to it.

## Additional Reading:

1. Journal Medical Physics International – History Editions No.7 (2022), available free from: <http://www.mpjournal.org/pdf/2022-SI-07/MPI-2022-SI-07.pdf>

2. [www.iomp.org/iomp-history](http://www.iomp.org/iomp-history)

3. Niroomand-Rad A, Orton C, Smith P, Tabakov S (2013), A History of the International Organisation for Medical Physics – 50 Years Anniversary – Part I, Journal Medical Physics International, v.1, n.2 p 113-115, available free from: <http://www.mpijournal.org/pdf/2013-02/MPI-2013-02-p113.pdf>
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8. Tabakov S, Sprawls P, Krisanachinda A, Lewis C, (2011), Medical Physics and Engineering Education and Training – part I, ISBN 92-95003-44-6, ICTP, Trieste, Italy, available free from: [http://www.emerald2.eu/mep/e-book11/ETC\\_BOOK\\_2011\\_ebook\\_s.pdf](http://www.emerald2.eu/mep/e-book11/ETC_BOOK_2011_ebook_s.pdf)