

2012 IFTOMM NEWSLETTER



International Federation for the Promotion of Mechanism and Machine Science
www.iftomm.org

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SCOPE OF THE NEWSLETTER

This Newsletter reports the most important facts and events of IFToMM activity during the year but with an eye to the future plans. Information is collected mainly from IFToMM bodies and its leadership. A special attention list is devoted to forthcoming conference as forum for meetings among the community and promotion of MMS.

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EDITORIAL BOARD FOR 2012 ISSUE

Shuo Hung Chang, Chair of editorial board, EC member
Yoshihiko Nakamura, IFToMM President
Marco Ceccarelli, previous IFToMM President
Jean Pierre Merlet, EC member
Veniamin I. Goldfarb, Chair of PC Communications & Publications & Archiving, IFToMM Vice President

MESSAGE OF THE IFTOMM PRESIDENT

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It is my greatest pleasure to write the first message in IFToMM News Letter as the president of IFToMM.

Since 1969 when IFToMM was founded as a true international academic society, it has grown its role in the field of mechanism and machine science (MMS). IFToMM started from thirteen member organizations and currently consists of forty-six member organizations. Thirteen technical committees, four permanent commissions, and five affiliate journals cover the wide spectrum of MMS.

IFToMM was born in the time of Cold War and in the move from the Prague Spring to the Détente in the history. The founders of IFToMM are those who understood the importance of international exchange and opened the door by their own. IFToMM is the United Nation of MMS with sharing an equal voting right among member organizations

and enjoying the traditional personal touch among active individuals.

While the demands in MMS of the society and industry diverse among countries, the demands today in the developing countries are not same as those demanded yesterday in the developed countries. IFToMM absorbs the diversity of contemporary demands in MMS of the whole world.

The strength is the weakness at the same time.

It is also true for IFToMM. The diplomatic courtesy in the style of the United Nation sometimes slows down the response to the change of environments and may be a bit too stiff in formalism to invite more ambitious scientists and engineers in the next generations. IFToMM may be a bit too slow in the use of Internet for communication. IFToMM has not paid much attention to archival and copyrights after patronage of conferences.

The weakness is the strength at the same time.

Although IFToMM needs to open the fields of activity for the ambitious scientists and engineers in the next generations, it has a lot of capacity to absorb them because it was not fully open. The discussion has been started on how to invite them in the activities of Technical Committees and Permanent Commissions.

The archival of IFToMM conference proceedings in the Internet makes a deep impact if it is organized. Because it has not been done in a systematic way and because many IFToMM conferences organized every year capture the contemporary demands and solutions in MMS of the whole world. The discussion has just been started in the Executive Council in 2011.

In the following decades many countries in Asia, South America, and North Africa will see the rapid growth of demography and economy. The change of constraints and demands in energy, resource, and food will diverse and develop new contemporary problems and solutions in the world. The academic activities in MMS will need pan-focus

in the scope. This is the scope that IFToMM is specialized to.

Though three years left in my term as the president is short, with the members of presidency desk, vice-president Prof. Veniamin Goldfarb, secretary-general Prof. Teresa Zeilinska, and treasurer Prof. Just Herder and the other colleagues of Executive Council, if I may, I would like to take a step forward to:



- (1) create the field of activity and invite ambitious scientists and engineers in the next generations to IFToMM
- (2) strengthen the value of IFToMM conferences by the strategic archival
- (3) enrich the network of IFToMM community using communication technology
- (4) make necessary change in the system of IFToMM for the above three goals

The questions, opinions, discussions, advices, and suggestions are most welcome from every colleague of the IFToMM community.

NEWS FROM EXECUTIVE COUNCIL

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Year 2012 is the first year when the Executive Council (EC) assumed its duty with the new set of members. The EC members are: Prof. Y. Nakamura (President), Prof. M. Ceccarelli (Past-President), Prof. V. Goldfarb (Vice-President), Prof. T. Zielińska (Secretary General), Prof. J.L. Herder (Treasurer), Prof. Shuo Hung Chang, Prof. J.P. Merlet, Prof. B. Corves, Prof. J.A. Carretero, Prof. V. Kumar, Prof. Datong Qin. As usually the transfer of responsibilities needed some time and learning. EC was glad that a new version of IFToMM web pages had been created, however some functions and information needed improvement. This is a still ongoing process. The web information about the TC and PC chairs and members was actualized. From the beginning of 2012 we have a new web administrator – Mrs. Nathalie Barmina (e-mail: barmina-nat@mail.ru).

In 2012 EC conducted its activities through tele-conferences and mutual visits. In June 2012 President and Secretary General had a short meeting in Tokyo discussing the current matters and the preparation of the EC Annual Meeting. The 45th Annual Meeting was held on November 6th and 7th in Tokyo and it was attended by 5 EC members, 3 others were remotely present through a tele-conference connection, 4 TC chairs attended the meeting personally. Important matters were discussed, including: activity reports, new membership in IFToMM Committees and Commissions, conference sponsorship, IFToMM awards, and preparations for the coming World Congress. The new IFToMM Secretary of Honors and Awards Commission – Prof. M. Wiercigroch was introduced. The date of the next 46th Annual Meeting was scheduled for October 31st, November 1st 2013. It will be held in Taipei, Taiwan and will be hosted by Prof. Shuo Hung Chang - member of the EC and the organizer of the IFToMM World Congress in the year 2015.

The EC would like to express its gratitude to the Technical Committees and Permanent Commissions chairs and to all

members as well as to the Member Organization representatives for their excellent work supporting IFToMM activities and development. We hope that this support will be sustained in the coming years, thus through working together we shall make our Federation continuously stronger, very professional and visible in the world of science and research. We must share also the sad news - in the year 2012 the distinguished professor in mechanics and robotics - Miomir K. Vukobratovic passed away on March 11th. Some prominent achievements of Prof. Vukobratovic are: introduction of the ZMP (zero moment point) concept, crucial to modeling and control of biped locomotion of robots, semi-inverse method for dynamically balanced gait synthesis, the first artificial exoskeleton for restoring basic locomotive activity of handicapped – paralyzed persons and active hand orthosis. His achievement made a significant footprint in the development of modern humanoid robots. He will stay in our memories for ever.

NEWS FROM MEMBER ORGANIZATIONS

[A total of 27 reports]

MO AUSTRIA

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1. There was only one main activity, namely the organisation of ARK 2012 in Innsbruck. For a detailed report on this event see the report of the TC-Computational Kinematics.

2. Co-Organisation of the summer school, “Models and Methods in Kinematics and Robotics 2012”, by Prof. M. Husty, see also the report of the TC Computational Kinematics

3. Continuing collaboration with University of Laval and University Innsbruck (H.-P. Schröcker- C. Gosselin- M. Husty-M. Weber)

MO BELARUS

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photo: Plenary Session-Belarus 2012

The International Scientific and Technical Conference "Innovations in Mechanical Engineering 2012" was held from the 17th-19th October 2012 in Minsk as the main event in a field of TMM in Belarus. The Joint Institute of Mechanical Engineering of National Academy of Science of Belarus

(NASB) which patronizes the Belarusian Committee of IFToMM, was a host of the Conference. The Conference was dedicated to the 55th anniversary of the Joint Institute of Mechanical Engineering of the National Academy of Sciences of Belarus.

The Conference has been organized under the support of the NASB, State Science and Technology Committee, Ministry of Industry, and Ministry of Education of Belarus.

More than 110 reports have been presented at the conference, whose authors were 3 academicians, 7 corresponding members, 46 doctors and 80 candidates of sciences - from Belarus, Russia, Ukraine, Poland, Canada, Singapore.

Among the plenary keynotes there were the following: "New Materials in Mechanical Engineering" presented by Academician P. Vityaz (Belarus), "Development of the technosphere: risk assessment and reliability of complex technical objects" presented by Professor V. Algin (Belarus), coauthors are N. Makhutov, V. Zatsarinnyi, N. Ishin, "Prospects of the modern laser technologies and wear-resistant coatings to improve an equipment life of petrochemical and gas industries" presented by Honored science worker of the Russian Federation in the field of science and technology, Professor E. Tesker (Russia).

The conference has been continued by thematic sections: "New methods of design of machines and their components" and "General problems of mechanical engineering". Reliability and safety of machines and their components, testing, calculations, certification"; "The new engineering materials and technology."

Conference was successful and became a promising platform for the international exchange of experiences and results of academic research and realizations in the field of mechanics and engineering currently carried out by Belarusian experts and their foreign colleagues.

MO BRAZIL

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Activities on the field of MMS and IFToMM in Brazil have been done under patronage of the Brazilian Society of Mechanical Sciences and Engineering – ABCM. The Brazil IFToMM TC and PC representatives are ABCM members.

Brazilian members of IFToMM TCs and PCs have taken part in several events and meetings during the analyzed period with IFToMM MO, principally Germany and Italy and, have collaborations in the educational area (undergraduate and postgraduate programs) and research activities with IFToMM and non IFToMM members.

Future planned activities: Promote co-sponsored events by IFToMM and ABCM, and increase the participation of Brazilian members on activities promoted by IFToMM.

On can note that participation of Brazil in the Technical Committees and Permanent Commissions of IFToMM have considerably increased during this period.

MO CANADA

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The 2012 CCToMM Symposium on Mechanisms, Machines, and Mechatronics (M³) was held at the University of Manitoba in Winnipeg, MB, on June 4 – 6, 2012. It was chaired by Professor M. John D. Hayes as one of the parallel sessions of the 2012 CSME International Congress. The CSME and CCToMM have a memorandum of understanding regarding shared risk and profit for CCToMM's continuing commitment to organize an M³ Symposium at the Congress, which is held every two years. In every odd year the M³ Symposium is a standalone two day single session symposium.

In addition to the technical meetings, the CCToMM Annual General Meeting (AGM) was held on June 6, 2012. At the AGM, Professor Roger Boudreau, from Université de Moncton, announced his retirement from his seat on the Executive Council as Secretary General. Professor Boudreau spent 14 years as the Secretary General, since 1998. His contributions to CCToMM have been invaluable. In addition to minute recording, translating, and archiving, he helped to organise every one of the five standalone CCToMM Symposia starting in 2001. Professor Marc Arsenault was unanimously elected as the new Secretary General. Other business included the announcement of the 2013 M³ Symposium which will be co-chaired by Professors M. John D. Hayes and Professor Illian Bonev and will be hosted at École de technologie supérieure (ETS), located in Montreal, QC, May 30-31, 2013.

Additionally, Professor Scott Nokelby, CCToMM Communication's Officer, completely revised our Canadian committee's website: www.cctomm.ca where many improvements have been implemented. This website is effectively used for communication of upcoming conferences affiliated to IFToMM of particular interest to members, member lists, the by-laws, the CCToMM Newsletter, an on-line due payment page, and a link to the IFToMM website.

MO CHINA-BEIJING

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1. The 2nd ASME/IFToMM International Conference on Reconfigurable Mechanisms and Robots (ReMAR 2012) was held on July 9-11, 2012 in Tianjin, China. Over 140 participants from more than 20 countries/regions joined in the event. Many experts and scholars in reconfigurable mechanisms and robots area including Prof. Kenneth J. Waldron, Prof. Gregory S. Chirikjian, Prof. Brian Davies, Prof. Hongsen Yan, Prof. Youlun Xiong, Prof. Jianrong Tan, Prof. Yongduan Song attended the conference. The President of Tianjin University Prof. Jiajun Li attended the opening ceremony. Ten experts including Prof. Kenneth J. Waldron, Prof. Hongsen Yan, Prof. Larry L. Howell, Prof. Gregory S. Chirikjian were invited as keynote speakers.



2. 2nd IFToMM Symposium on Mechanism Design for Robotics-MEDER2012 was held in Beijing University of Aeronautics and Astronautics on October 13-14, 2012 in China. Over 50 participants from different universities and institutes of R&D joined in this Symposium. Prof. Sunil K. Agrawal from University of Delaware, Prof. Jian S. Dai from Kings College London, Prof. Hanxu Sun from Beijing University of Posts and Telecommunications were invited as keynote speakers.

3. The competition in China for selecting delegates of the 2nd Students International Olympiad on Mechanism and Machine Science (SIOMMS 2013) was held on 13-15 July 2012 in Huangshan, China. 6 teams, including Shanghai Jiao Tong University, Fuzhou University, Yanshan University, Beijing University of Aeronautics and Astronautics, Tianjin University, and Wuhan University of Science and Technology, won the competition and they will join in the SIOMMS 2013 held on 19-21 April 2013 in Shanghai, China. The president of IFToMM Prof. Yoshihiko Nakamura attended this competition.

MO CHINA-TAIPEI

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The Chinese Society of Mechanism and Machine Theory (CSMMT) in Taiwan had been established since 1990. CSMMT has been maintaining approximately 160 members from both the academy and industry. Every year, CSMMT organizes annual domestic academic conference and General Assembly in November. The number of papers presented in the annual conference is approximately 110 that are mostly from universities. Several domestic research institutes, especially the Industrial Technology Research Institute (ITRI) constantly has contributions. The 2012 annual conference and General Assembly is held in the Southern Taiwan University of Science and Technology in Tainan, Nov. 2-3, 2012. Prof. B. Corves was the keynote speaker.

The CSMMT members are often actively involved in the IFToMM events, such as the 2012 IFToMM International Conference on Mechanism and Machine Science in HwanShan, China, July 13-17, 2012. For IFToMM 2012 Asian Conference on Mechanism and Machine Science on Nov. 7-10 in Tokyo, a total of 21 Taiwanese papers were presented. Prof. Shuo Hung Chang also attended the Executive Council meeting on Nov. 6-7 in Tokyo.



Annual MMS Conference, Tainan, Taiwan



Prof. B. Corves was giving Keynote speech at Annual MMS Conference, Tainan, Taiwan.

MO CROATIA

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The main activities in 2012 of Member Organization Croatia were monthly meetings held at Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, Croatia. Throughout the year, 9 meetings were held. Each meeting was accompanied with lectures related to MMS activities, and speakers were scientists from universities or experts from the industry. In July, we have organized a technical-scientific tour to Itaipu-Binacional, the second world's largest hydroelectric power plant (14 GW) located on the border between Brazil and Paraguay (see photos).



MO CZECH REPUBLIC

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1. Regular Conference Events organized under the auspices by the Committee:

- "Dynamics of Machines 2012" held in Prague from 7-8 February 2012 was organized by the Institute of Thermomechanics, Academy of Sciences of the Czech Republic, 40 participants/8 from abroad (the conference is organized every year)

- "Engineering Mechanics 2012" was held in Svratka from 14-17 May and organized by the Institute of Theoretical and Applied Mechanics, Academy of Sciences of the Czech Republic

Republic, 200 participants/20 from abroad (the conference is organized every year)

- “XI. International Conference on the Theory of Machines and Mechanisms TMM 2012” was held at the Technical University of Liberec from 4-6 September 2012 and organized by Textile Machines Research Institute Liberec, 80 participants/31 from abroad (the conference is organized every 4 years)

- “Computational Mechanics 2012” organized by the University of West Bohemia in Pilsen was held in Spicak from 12-14 November 2012, 80 participants/10 from abroad (the conference is organized every year)

2. In the year 2012, the Czech National Committee IFToMM had two regular sessions during the conferences in Svatka and Liberec. Main topics were the conclusions resulting from the IFToMM congress in Mexico and the nomination of new Czech members of the Technical Committees IFToMM. The session in Liberec in September 5, 2012 was participated by the IFToMM former president Prof. Marco Ceccarelli.

MO GEORGIA

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The Georgian Committee of IFToMM (GC of IFToMM) in Georgia had been established since 1998. GC of IFToMM has been maintaining approximately 65 members from both the Institute of “Machines Mechanics”, Georgian Technical University, Georgian Aviation University, Kutaisi State University, etc. The Georgian Committee of the IFToMM has established the reviewed and reported International Scientific Journal “Problems of Applied Mechanics” on June 23, 2000.

By decision of the Executive Council of IFToMM (Italy, July 6-7, 2001) the Journal “Problems of Applied Mechanics”, founded in June 23, 2000, is established as an official International Journal of IFToMM.

By decision of the Executive Council of IFToMM (August 30-31, 2003, Chicago) the journal has been named “Problems of Mechanics”.

According to the Memorandum of understanding among journal publisher, editor-in-Chief and IFToMM pertaining to journal “Problems of Mechanics” (December 22, 2008, Cassino, Italy) from the year 2009 which is an Official Journal of IFToMM.

The Scientific Journal of IFToMM “Problems of Mechanics” is being published in Georgia (Tbilisi), is periodical and published four times a year. The last period 48 Journals have been published. At present the No. 49 Journal is the process of publication.

Scientific fields of the Journal “Problems of Mechanics” is: history of Mechanics; Theoretical and Practical mechanics; Analysis, synthesis and design of mechanisms and machines, robots and manipulators, etc.

MO GERMANY

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1. Already since 2002 the IFToMM group Germany meets annually in a one day event to discuss IFToMM related matters such as IFToMM conferences and workshops but also commission and committee meetings. In 2012, the meeting was organized by Prof. Lena Zentner from Technical University Ilmenau on April 20th, 2012. The participants of the meeting stood up in minute's silence in commemoration of Prof. Gerhard Bögersack, who contributed substantial scientific work within the IFToMM frame, in particular in the IFToMM PC Standardization of Terminology. As a consequence of Prof. Corves being elected as member of the Executive Council of IFToMM, Prof. Kecskemethy is elected as new Chairman of IFToMM Germany.

2. Members of IFToMM Group Germany took part in a large variety of IFToMM sponsored events most of them connected to IFToMM PCs and TCs. In particular, several conferences were organized by German IFToMM members: the conference “Applied Mechanisms and Transmissions” was successfully organized by Prof. Lovacz, in Timișoara, Romania (<http://metrapp-2011.mec.upt.ro/>). Furthermore, the Second Joint International Conference on Multibody System Dynamics (IMSD 2012) in Stuttgart organized by Prof. Eberhard (<http://www.itm.uni-stuttgart.de/imsd2012/>). As well, the Ninth International Conference on Vibrations in Rotating Machines was organized in Darmstadt (<http://www.sdy.tu-darmstadt.de/fachgebietsdy/sirm2011/index.de.jsp>).

Finally, the First International Conference on Cable-Driven Parallel Robots from September 2 to 4, 2012, was successfully organized at the FHG IPA in Stuttgart by Dr. Andreas Pott and Dr. Tobias Bruckmann

(<http://www.ipa.fraunhofer.de/index.php?id=1606>).

3. The national German project DMG-lib about the preservation of knowledge and material in mechanism and machine science is continuing to be extended to a European FP7-project under the name “thinkMOTION” with European university project partners from Italy, Spain, Romania, and France. This collaboration was only possible through contacts initiated during IFToMM-events!

MO HUNGARY

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photo: Scientific Committee for Machine Design (SCMD) after the meeting

- Following the regular routine, SCMD and its Mechanisms Subcommittee organized Scientific Meetings in 2012 as well (on: 06 March, 24 April, 09 May, 24 October, and 21 November). The Agenda of these meetings contains always scientific lectures with discussion, affairs of Hungarian Academy of Sciences (HAS) and IFToMM affairs.

- Professor Adam Döbröczöni created a Memorial Terplan Exhibition (28 March – 27 June) at Miskolc University (ME). The Opening Ceremony contained several lectures devoted to the professional life of the late Academic Prof. Dr. Z. Terplan, who passed away on 18 Jan. 2002.

- SCMD organized a Conference, as part of series of HAS programs “Celebration of Hungarian Sciences” (on 14 November).

Reminder:

In 1952 the Theory of Machines and Mechanisms (TMM) as an independent subject had been introduced in the field of Hungarian higher technical education.

In 1967 a Kinematic-Kinetic Committee (KKC) was founded within the HAS, chaired by Professor Dr. Z. Terplan.

In 1969 in Zakopane, the Chief Delegate of Hungary was Prof. Dr. Z. Terplan, who signed the Foundation Document of IFToMM.

In 1970 the Academic Committee for Machine Design (SCDM now), at first chaired by Prof. Dr. Z Terplan, has been responsible for the Hungarian National Committee of IFToMM. The SCMD has been served for HMC of IFToMM up to present and so on.

In times to come, as earlier and today, SCMD with the 6 Subcommittee if it mobilize a large community of scientists, researchers and engineers from industry, having connection with TMM in some form or other.

From the very beginning, the subscription fee of IFToMM has been paid regularly by the Hungarian Academy of Sciences.

MO INDIA

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The major activity of the Association for Machines and Mechanisms (AMM) (the Indian MO of IFToMM) in the past year was the organization of the biennial event "National Conference on Machines and Mechanisms (NaCoMM 2011) during November 30-December 02, 2011. The conference was organized by the Indian Institute of Technology Madras under the aegis of AMM and IFToMM. A total of 63 papers were presented in the conference along with 20 posters. A one-day workshop on Computational Kinematics was conducted by Prof. Manfred Husty as a part of the conference. Also, a mechanism design contest for student participants was conducted on the sidelines of the conference. A report on this can be found in the April 2012 edition of the quarterly news bulletin of AMM.

NaCoMM has always attracted a lot of participants from outside India. NaCoMM 2011 has received international participation in all aspects of the conference -- contributory

papers, keynote lectures, review of papers, organization of workshop, evaluation of students' projects and so on. Encouraged by the trend, AMM has decided to officially declare NaCoMM as an international conference. Thus, the next NaCoMM has been named as the "1st International and 16th National Conference on Machines and Mechanisms (iNaCoMM 2013)", which would be organized by the Indian Institute of Technology Roorkee. AMM is happy to acknowledge IFToMM's continued support to this event, as iNaCoMM 2013 has also received IFToMM sponsorship very recently.

AMM's representation in the IFToMM TCs has undergone some changes in the past year. The following are the members from AMM on the Tcs:

Permanent Commission for the History of Mechanism and Machine Science: Shekher Narvekar and J S Rao

Technical Committee for Micromachines: G.K. Ananthasuresh

Technical Committee for Multi-body Dynamics, Subir Kumar SAHA, and Pushparaj M. Pathak

Technical Committee for Robotics and Mechatronics
Ashitava Ghosal, Subir Kumar Saha (both are newly nominated)

Technical Committee of Computational Kinematics
Sandipan Bandyopadhyay (new nomination)

Technical Committee for Rotordynamics JS Rao and K Gupta
Technical Committee for Transportation Machinery: Ashitava

Ghosal and Bhartendu Seth

AMM has been regularly publishing its quarterly News Bulletin since 2008. Each issue is available from <http://www.ammindia.org>.

Recently, AMM has decided to join hands with the Univ. of Aachen in the German DMG-Lib project where information on mechanisms, mechanisms models, etc. of Indian origin will be included in the DMG-Lib database.

MO JAPAN

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Japan IFToMM (Jc-IFToMM) had an annual Symposium on May 12, where 11 presentations were arranged covering Robotics, Dynamics, etc., and including a special lecture titled “The Great East Japan Earthquake and Robots - What the robots should be - ” by Professor Shigeo Hirose. The meeting encouraged a few young researchers by awarding for their Good Presentation. The best presentation among the finalist was to Dr. Daisuke Matsuura who presented “Noncontact Micro Probe Manipulation System Having 3D Magnetic Tweezer and 3-DOF Flexure Stage”.

The biggest news this year was the supporting passion expressed by Prof. Marco Ceccarelli, the former President of IFToMM, who visited Tokyo and completed the full Tokyo marathon last February (picture). His encouragement was not only to Japanese colleague but also to the all the IFToMM people who were anxious about the “Tsunami” disaster followed by the failure of the nuclear plant. The second news is that we became proud of the new President of the IFToMM, Yoshi Nakamura, Professor of Tokyo University.

In addition to the regular activities of Jc-IFToMM, we have just organized the 2nd IFToMM Asian Conference on MMS, at Tokyo Institute of Technology, O-okayama, on November 7-10, with 130 participants from 17 Asian nations and some European countries. The conference was preceded by the EC meeting hosted by the new president Yoshi Nakamura. We had finally 6 keynote speeches and 87 presentations after strict peer reviewing by program committee. The next 3rd conference will be held in 2014 and will be announced soon.



Young Investigator Award finalists with Jc-IFToMM Chair



Prof. Marco Ceccarelli after 11km run



With Professor Takanishi, after 4h55m36s accomplishment



Assembly photo at the 2nd IFToMM Asian conference on MMS



Keynote speech Lab tour Banquet
Some snap shots in the 2nd IFToMM Asian conference on MMS

MO KOREA

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This time we do not have anything particular to report on the IFToMM activities in Korea.

MO LITHUANIA

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The year 2012 was dedicated to the promotion of machines and mechanisms science to students in secondary schools and universities. Last year we actively collaborated with Lithuanian Engineering Industry Association (LINPRA), which has organized for students in secondary schools and universities several educational projects on the basis of “learning by doing”. One of these projects, called “Atverk” (“Open”), is close connected to machines, mechanisms and robotics. In our opinion this type of promotion is very important for focusing young people towards fields of engineering, mechanical engineering, mechatronics and robotics.

This year we started the organization of International Conference "Manufuture 2013", which will be related to the presidency of Lithuania for the European Union in 2013. Several international conferences were organized in 2012: 17th International Conference “Mechanics-2012”, 11th International Conference "Vibroengineering-2012" and 16th International Conference "Transport means-2012". We are representing Lithuania in "IDEA" committee of European Commission as well as in NATO SPS committee. There are 5 active IFToMM members in Lithuanian Academy of Sciences (photo).



IFTOMM activists members of Lithuanian Academy of Sciences. From left to right: Prof. M. Ragulskis (junior), Prof. R. Bansevicius (former chairman of IFToMM National committee), Prof. K. Ragulskis (author of 2500 inventions and patents, adviser of 300 doctoral dissertations in mechanics), Prof. V. Ostasevicius and Prof. A. Fedaravicius.

MO MEXICO

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Annual Congress of SOMIM, the Mexican Society of Mechanical Engineers

SOMIM's annual congress was held in the Engineering Campus of the University of Guanajuato at Salamanca on September 18-21, 2012. SOMIM is the sponsor of the Mexican IFToMM organization. The area of mechanism and machine science was strongly represented with 59 papers out of a total of 179. In addition to the simultaneous technical sessions, there were six keynote conferences by the following invited speakers: Prof. Yvan Houbaert, Gant University, Belgium; Prof. Jaime Cervantes, UNAM, Mexico; Prof. Carl D. Crane, University of Florida, USA; Prof. Victor Muciño, West Virginia University, USA; Prof. Saul Santillan, UNAM, Mexico; and Prof. J. N. Reddy, Texas A&M University, USA. Opening ceremony in the photo below:



Novel pump mechanism goes into production

A positive displacement “sprocket” type pump developed jointly by the Engineering Institute of UNAM (National University of Mexico) and the firm DYFIMSA has entered the production stage. The pump is a modified version of the concept described in the Proceedings of the IFToMM International Symposium on History of Machines and Mechanisms, Cassino, Italy, May, 2000 (Chicurel, R., Aguirre, M., Chicurel, E., “Some Developments of Machines and Mechanisms in Mexico”), and in the Proceedings of the 11th World Congress in Mechanism and Machine Science, IFToMM, Tianjin, China, April, 2004 (R. Chicurel, “Improved Design of sprocket Pump”). A patent application of the new version listing as inventors Ricardo Chicurel-Uziel, Jose Leon-Garza and Filiberto Gutierrez-Martinez has been filed.

MO NETHERLANDS

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HMM2012, the 4th International Symposium on the History of Mechanism and Machine Science was held at VU-University in Amsterdam, The Netherlands, from 7-11 May 2012. There were 60 participants and 40 papers were accepted for publication in the proceedings by Springer: Teun Koetsier & Marco Ceccarelli (eds), Explorations in the History of Machines and Mechanisms, Proceedings of HMM2012, Springer 2012. See: <http://rd.springer.com/book/10.1007/978-94-007-4132-4/page/1>



HMM2012 in Amsterdam

The EUROMECH Colloquium 524 on “Multibody system modelling, control and simulation for engineering design” took place from February 27 – 29, 2012, at the University of Twente, Enschede, Netherlands. The colloquium attracted about 40 participants from the EUROMECH as well as the IFToMM communities. The papers clearly demonstrated that multibody system modelling techniques can effectively support the different phases of the design process. Both detailed analyses using large-scale industrial models as well as high level analyses based on simple (prototype) models with a small number of degrees of freedom were presented. From all presentations a two-page abstract is included book of abstracts edited by Ben Jonker, Werner Schiehlen, Jaap Meijaard and Ronald Aarts, see the Colloquium's web site <http://www.utwente.nl/ctw/euromech524/>. Some selected full papers will appear in the journal Multibody System Dynamics.



Participants EUROMECH Colloquium 524 visiting the Twickel Castle near Enschede, Netherlands

- ~ Prof. Just Herder took office as EC member and Treasurer
- ~ Prof. Just Herder is associate editor of Mechanism and Machine Theory, in particular in the areas of static and dynamic balancing and grasping.
- ~ Prof. Just Herder was publicity chair and program committee member of the IFToMM/ASME conference on Reconfigurable Mechanisms and Robots, ReMAR2012, 9-11 July, 2012, Tianjin, China. He also delivered keynote talk at this conference.
- ~ The IFToMM affiliated open access journal Mechanical Sciences entered its third volume and has attracted several high quality special issues. The journal is receiving an increasing number of submissions, and keeps soliciting special issues

based on a selection of papers from IFToMM symposia and conferences.

If you are interested in becoming a guest editor of a special issue please contact the editors at: <http://www.mechanical-sciences.net/>

MO POLAND

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Polish Committee on Theory of Machines and Mechanism (PC TMM) has two affiliations to:

- (a) Polish Academy of Science (Polish abbrev.: PAN),
- (b) IFToMM – International Federation of Promotion of the Mechanism and Machine Science.

According to (a), we are a section of the PAN Committee on Machine Building. Professor Józef Wojnarowski (Silesian TU) is the President of PC TMM. Due to new regulations about the internal structure of the Polish Academy of Science's (e.g. restrictions on number of members), the Committee (PC TMM) consists of 19 members. Due to the fact that the "community" of scientists involved in the works of PC TMM has been broader for many years – a group of so called "PAN experts" could be appointed and the process of appointment is in progress. The approved list of experts will be established by the end of 2012.

According to (b), PC TMM is one of the national committees which created the Federation (IFToMM) in 1969 in Zakopane, Poland. Since its origin, Polish scientists have been actively involved in versatile IFToMM works, conferences, meetings, workshops etc. as well as they were part of IFToMM governance at all levels. At present, Professor Teresa Zielińska (Warsaw TU) is the Secretary General of IFToMM. The members of PAN Polish Committee on TMM and the candidates for PAN experts decided to create common group called "Committee IFToMM-Poland" – aiming at continuation of works previously performed solely by larger PC TMM as per previous law. The works will be continued when the candidates obtain formal letter of nomination for the PAN experts.

In year 2012, the following events took place:

- (i) plenary meeting no 1 (in Gliwice, Silesian TU);
- (ii) plenary meeting no 2 (in Kołobrzeg, during the TMM conference);
- (iii) conference on TMM in Kołobrzeg.

The plenary meeting No.1 took place at the Silesian TU in Gliwice on 18th May, 2012 chaired by Professor Józef Wojnarowski, and hosted by Professor Jerzy Świder, Dean of the Silesian TU. The main topics during the meeting were:

- New regulations about the internal structure of the Polish Academy of Science and their impact on PC TMM membership, rules and further activities.
- Preparations of the domestic conferences on TMM in 2012 and 2014. Domestic conferences are considered as international events with relatively low number of international participants.
- Organization of the IFToMM 2019 World Congress in Poland to celebrate the 50-ies anniversary of creation

IFToMM in Zakopane, Poland in 1969. Professor Tadeusz Uhl from the AGH Technical University from Cracow was nominated as the coordinator of this event.

- Report of Professor Teresa Zielińska – IFToMM Secretary General.

- Report of Professor Zbigniew Kęsy – Chair of IFToMM Technical Committee on Reliability.

- Plan of activities for year and the whole term of duties.

The plenary meeting No.2 took place, in Hotel Solny in Kołobrzeg on 20th September 2012 chaired by Professor Józef Wojnarowski and hosted by Professor Tadeusz Bil, the Chair of the organizing Committee of the TMM Conference. The main topics during the meeting were:

-The matter of appointment of the members of "PAN experts" group.

-The proposed list of members and proposal of additional members were presented and discussed. Professor Józef Wojnarowski is responsible for the list to the Polish Academy of Science.

-The Kołobrzeg conference was recognized as a very high quality event, and congratulations were presented to the conference Organizers.

-Restart of the PC TMM webpage was declared.

-The location of the 2014 conference was decided to be the Wrocław Technical University. Professors Marco Ceccarelli (TU Casino, Italy) and Burkhard Corves (RWTH Aachen, Germany) declared to be the keynote speakers during this future conference.

The 23rd National Conference on Theory of Machines, Mechanisms and Mechatronic Systems and its Third International Edition were organized by TU Koszalin and PC of IFToMM Poland in Kołobrzeg within the period 19-22 September 2012. There were approx. 80 participants and approx. 90 papers. The general lecture on "From Sciences of Mechanisms and Machines to Mechatronics" was delivered by Prof. Józef Wojnarowski. The level of papers was evaluated as high. The summaries of papers were printed in a proceeding book. The full papers were printed in Polish scientific magazines of international level (printed fully in English, having international Editorial Boards):

-Acta Mechanical et Automatica,

-International Journal of Applied Mechanics and Engineering.

The papers were deeply discussed but in friendly atmosphere. Professor Tadeusz Bil, the Chair of Organizing Committee, obtained a common appreciation and many thanks for an organization of the conference.

MO ROMANIA

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During 2012, ARoTMM - the Romanian branch of IFToMM, developed activities focusing on integrating R&D, with education and training:

- ☉ The National Seminar for Mechanisms, organized on May 3-5 2012, in Oradea was dedicated to harmonizing the use of software in academic teaching and in training the students through and for research. In the seminar the main academic

institutions in Romania were represented: Politehnica University of Bucharest, Technical Universities of Cluj, Iasi and Timisoara, Universities of Craiova, Suceava, Galati, Oradea, Tg.Jiu and Brasov.

- ⌚ The Summer School on Models and Methods in Kinematics and Robotics 2012, organized on July 1 – 8, 2012 in Cluj-Napoca with IFToMM support addressed to PhD, young researchers, or specialists working in robotics who want to broaden their methodological skills.

In November 2012 the 1st Call for the International Symposium on Science of Mechanisms and Machines, SYROM 2013 (November 11 – 12, 2013, Brasov) was launched and sent to the IFToMM community.



The 11th IFToMM International Symposium on Science of Mechanisms and Machines - SYROM'2013, is organized by the Romanian Association for the Science of Mechanisms and Machines (ARoTMM), in the Transilvania University of Braşov, Romania, during 11-12 November 2013. The SYROM'2013 is part of the International Federation for the Promotion of Mechanism and Machine Science (IFToMM) conferences agenda.

The general thematic of the symposium follows the mechanisms conception, modeling, analysis, synthesis, and command & control in advanced product design, applied to but not limited at:

1. Conceptual design (linkages, gears, cams, complex mechanisms)
2. Kinematic and dynamic modeling and simulation
3. Synthesis and optimization
4. Applications in high-tech products
5. Trends in mechanisms' education

MO RUSSIA

Acad., Prof. Vasily M. Fomin, Director of the Institute of Theoretical and Applied Mechanics, Deputy Chair of Siberian branch of Russia Academy of Sciences, Russia
Scientific Secretary: Prof. Victor A. Glazunov, IMASH RAN
E-mail: "Vasily M. Fomin" fomin@itam.nsc.ru, "Виктор Глазунов" vaglznv@mail.ru

The activity of mechanical engineering scientists of the Soviet Union and Russia has always been closely related to the activity of International Federation for the Promotion of Mechanism and Machine Science (IFToMM). One of initiators of creating this organization in 1969 and its first president during eight years was Academician I.I.

Artobolevsky. After him the USSR and Russia was represented in IFToMM by his follower Professor A.P. Bessonov, awarded at the XI World Congress on TMM in 2004 by the Medal of Honor of this organization. In 2011 at the IFToMM General Assembly, held within the World Congress, the Russian scientist DSc., Professor V.I. Goldfarb was elected the IFToMM Vice-President. In 2005 the Federal Budget-Funded Research Institute for Machine Science named after A.A. Blagonravov of the Russian Academy of Sciences (IMASH RAN) held the scientific conference, devoted to the centennial of Academician I.I. Artobolevsky. The IFToMM 2005 current President Professor Ken Waldron and the Secretary General Professor Marco Ceccarelli took part in this conference. After A.P. Bessonov the IFToMM MO Russia was headed by Professor N.V. Umnov. At present the IFToMM MO Russia is headed by Academician V.M. Fomin. Soviet and Russian scientists took an active part in many scientific activities of IFToMM, in all world congresses and many symposiums and conferences. Many Russian scientists are members of committees and editorial boards of journals and scientific proceedings of IFToMM.

On April 19-21, 2011, The IFToMM EC and MO Russia member Professor V.I. Goldfarb headed the First Student International Olympiad on MMS in Izhevsk, Russia. 14 teams from 9 countries took place in this event. The honored guests of the first SIO MMS were IFToMM President Professor M. Ceccarelli, The Executive Council member Professor J. Rooney and the world-known designer M.T. Kalashnikov.

In 2012 members of IFToMM MO Russia took part as speakers and reviewers in many scientific events of IFToMM: in Symposium on Robotics (ROMANSY), Europeans Conference on Mechanism Science (ECOMES), in the 2nd IFToMM International Workshop on Hybrids (IMASH RAN), in HMM2012: International Symposium on the History of Machines and Mechanisms (Amsterdam). In August 2012 the Chair of MO Russia Academician V.M. Fomin headed the scientific conference on Methods of aerophysical research – ICMAR 2012.

Many members of MO Russia are simultaneously the members of IFToMM Committees and Editorial Boards of its Journals and they participate actively in their functioning. These are, in particular, the Reliability Technical Committee (TC), Gearing and Transmissions TC, Robotics and Mechatronics TC, Permanent Commissions on MMS History, Terminology, Editorial Board of the Journal "Applied Mechanics" and other.

At the 19th Symposium on Robotics ROMANSY-2012 (Paris) the MO Russia presented the application for holding the International Symposium on Robotics ROMANSY-2014 in Russia. The Symposium should take place in Moscow at the Federal Budget-Funded Research Institute for Machine Science named after A.A. Blagonravov of the Russian Academy of Sciences.

Members of MO Russia work actively with the youth, taking an active part in preparation and holding various conferences of young scientists. Members of IFToMM MO Russia are professors of many leading higher educational institutions, such as Moscow State Technical University named after N.E.

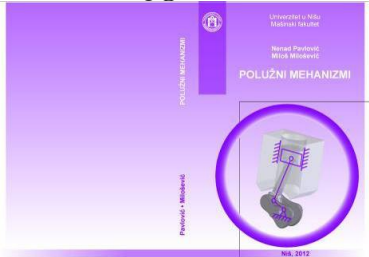
Baumann, Moscow State Automobile and Road Technical University, Moscow Institute of Physics and Technology and many others.

The seminar on MMS named after I.I. Artobolevsky is constantly functioning at the leading institute of mechanical engineering IMASH RAN (Moscow). The memorial room of the first IFToMM President is being kept.

MO SERBIA

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Coverpage Bar mechanisms



Strain gage monitoring cooperation
ME Belgrade ME Maribor, Slovenia



Formula Student World Competition

Subject: Review of IFToMM member activity:

1. New books published (in Serbian): 1
“Bar mechanisms”, Prof. Nenad Pavlovic, Ass.Prof. Milos Milosevic, Nis
2. International symposia (organized in Serbia) 0
3. International symposia attended by Serbian members 3
4. Students graduated at IFToMM Chairs 20
5. Master thesis at IFToMM Chairs 15
6. Doctoral thesis at IFToMM Chairs 2
7. Patents and innovations 5
8. International and national projects (Tempus – Huton) 1
9. Newly established journals 0
10. Papers published in the International journals 10
11. Papers published in the National journals 3
12. Scientific meetings 2

MO SINGAPORE

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MO Singapore has co-organised the following seminars in 2012:

“Cable-driven Exoskeletons for Functional Training of Arm Movements” on 20 July 2012. The key speaker is Professor Sunil K. Agrawal of University of Delaware, and “Towards intelligent manufacturing: a systems approach to production engineering” on 25 October 2012 in SIMTech. Key speaker is Prof. Hendrik Van Brussel of KU Leuven, Belgium.

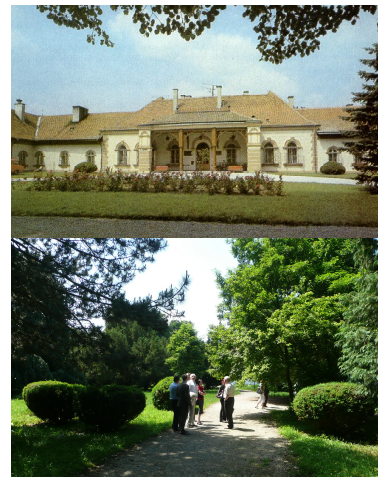
MO SLOVAKIA

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The main activities in 2012 of Member Organization Slovakia in collaboration with universities of technology mainly Faculties of Mechanical Engineering in Bratislava and Kosice and Slovak Academy of Science were organized international and national conferences:

1. XVII. International acoustic conference “Noise and vibration in Practice” was held in Kocovce (see photo). More than 30 reports have been presented at the conference from universities and practices about noise and vibration control machines and machineries. The participants are usually from the middle Europe.



2. The 6th international conference “Briquetting and pelleting – B&P 2012” was held in Bratislava. This conference welcomed 146 participants from 10 European countries. Participants heard 37 lectures which were presented by representatives of machines producers companies, universities and research institutions, solid biofuels producers and business companies.
3. The 18th International Conference “Engineering for Environment Protection” was held in Casta-Papiernicka. More than 80 reports have been presented at the conference, which took parts 150 participants from the whole Europe.
4. The 5th International Conference on Modeling of mechanical and mechatronic systems was held in Kosice. More than 90 reports have been presented at the conference.

The participants are usually young scientists from the whole world.

MO SLOVENIA

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The year 2012 was dedicated to the promotion of machines and mechanisms science to children in primary schools, students in secondary schools and university students. During the last ten years we collaborate with DSI Maribor (Society of mechanical engineers Maribor) and organize for school children in the seventh, eighth and ninth class activities which are close connected to machines, mechanism and robotics. The main tool is the system LEGO mindstorm. In the last ten years we could inspire more than thousand children to explore and work with machines, mechanisms and robots. In our opinion is this kind of promotion very important to focus the young people to the field of engineering, mechanical engineering, mechatronics and robotics.

The promotion activities are very strong also in the secondary schools and technical universities in the field of robotics.

The main event each year in Slovenia is the conference “Kuhljevi dnevi” dedicated to the professor academic Anton Kuhelj. It is organised by the Society for mechanics Slovenia. This event brings together Slovenian researchers in the field of mechanics, mechanisms, fluids mechanics and thermodynamics.

In the year 2013 we will organize a NC SI IFToMM meeting to elect a new NC council.

MO SPAIN

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The 4th European Conference on Mechanisms and Machine Science (EUCOMES 2012), was celebrated in Santander, in the Faculty of Engineering of the University of Cantabria, from 18 to 22 September 2012. The Chairman of the Conference was Prof. F. Viadero-Rueda. More than one hundred and twenty people attend the Conference coming mainly from Europe but also from USA, China, Australia, Israel, Tunisia, and others. During this Conference two Iftomm TC meetings took place, TC on Computational Kinematics and TC on Linkages and Mechanical Controls.



The XIX National Conference in Mechanical Engineering (CNIM) will be celebrated in Castellón de la Plana, from 14th to 16th November 2012, organized by the AEIM and the University Jaume I, under the Iftomm Patronage. During this

Conference, Prof. J. Cuadrado, President of the Iftomm TC of Multibody, will teach a short course on Multibody Dynamics. The digitization of the Spaniard Journal, “Anales de Ingeniería Mecánica”, that includes all the communications presented in the Spaniard National Conferences in Mechanical Engineering from 1982, has been concluded. We strongly thank to people involved in the European project thinkMOTION.

MO SWITZERLAND

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We have really no report for 2012 (very low level of activity). I will arrive to the retired period in 3 months and I am searching a new person for Switzerland representation. Normally, I will propose a name before the end of 2012.

MO TUNISIA

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The Tunisian Association of Mechanical Engineering (ATM) organized its national congress COTUME 2012, several papers in the mechanism and machine science were presented. This event is mainly a national one and it is the occasion to get the Tunisian researchers together.

A new book on theory of mechanisms and machines is published in Tunisia this year:



In the year 2012 started the organization of the 5th International Congress: Design and Modeling of Mechanical Systems: CMSM'2013, which will be March 25th to the 27th 2012 and will take place in Djerba an island in the south of Tunisia. The deadline for submission is for the 15th of December. This event is sponsored by IFToMM.

NEWS FROM PERMANENT COMMISSIONS

[A total of 3 reports]

PC FOR COMMUNICATIONS, PUBLICATIONS, AND ARCHIVING

Prof. Veniamin I. Goldfarb, IFToMM Vice-President, Professor, Dr. Sc., Director of Institute of Mechanics, Izhevsk State Technical University, Russia

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In 2011 at the 44th EC Meeting in Juanahuato, Mexico the decision was made at this meeting to unite PC for Communications, PC for Publications into one PC and to

delegate to this PC the functions of Archiving. Therefore, the PC involved de facto three sub-commissions: for Communications, for Publications and for Archiving.

Until present the efforts were mainly directed to solving communication problems. Note here, that communications implied earlier informative functions, related to the support and update of the IFToMM webpage, though to my opinion communication functions should be added by organizing communications inside IFToMM, between PCs/TCs and outside IFToMM. Previously the activity on updating and supporting the IFToMM webpage was started and executed by a group of administrators (Mr. Buelna, Mr. Pucciarelli), organized thanks to the Past-President Prof. Ceccarelli. It took much time and efforts for a new group of administrators which was organized at the Institute of Mechanics (Izhevsk, Russia) to master the IFToMM webpage interface, database and techniques of its operation. After that the PC Chair started the correspondence with Prof. Zielinska (Secretary General), Chairs of Technical Committees and Permanent Commissions and Member Organizations on necessary changes and updates on the IFToMM webpage.

The following activities were made in 2012:

- ① Information which changed by the beginning of the 2012 was updated on the webpage (newly elected chairs of MO/TCs/PCs, passed IFToMM members, etc.).
- ① The presentation format of the “Conferences” chapter was changed and became more demonstrative. Information on newly approved conferences was added. When any conference is finished, information about it is moved to the page “Previous Conferences”.
- ① Many inaccuracies found by the Secretary General and our group were corrected on the webpage.
- ① According to requests of many TC Chairs (Prof. Lovasz (TC Linkages and Mechanical Controls), Prof. Cuadrado (TC Multibody Dynamics), Prof. Pennacchi (TC Rotordynamics), Prof. Mayo (TC for Biomechanical Engineering) and individual IFToMM members the TC membership lists were corrected and many photos downloaded.
- ① Correspondence with TC/PC Chairs and active IFToMM members is being constantly continued.
- ① Information on current events is being updated (newly elected members, forthcoming conferences, important announcements) on the webpage.
- ① Activities on mastering the work with the IFToMM webpage are continued and many technical problems remain unsolved, for instance, work with forms and passwords.

The pointed work with the webpage should and will be permanently executed.

For many years the Webpage and Newsletter were the main means of available information for the scientific society about IFToMM activity. At present time advanced internet techniques (for instance, Wikipedia) obtained wide application. They can assist promoting the development of propaganda and informing the world engineering and

scientific society on IFToMM activity. The overture was made on the development of the article in Wikipedia, which looks as follows:

http://en.wikipedia.org/wiki/International_Federation_for_the_Promotion_of_Mechanism_and_Machine_Science - English version

http://ru.wikipedia.org/wiki/Международная_Федерация_п_о_Теории_Механизмов_и_Машин - Russian version

This is the first proposal, which can be supplemented by any useful changes. It is proposed to clarify ourselves with the policy of applying new information techniques.

In case of approving the application the possibilities of Wikipedia in our activity, the role of PCs/TCs/MOs will be risen abruptly – all articles and its sub-articles should be filled with a specific information (similar to work with the Webpage and Newsletter) revealing the subject essence and purpose of the activity of TCs/PCs. This information should be also available in all countries – members of IFToMM in their domain languages. If many members of TCs/PCs/MOs are involved to this activity, responsible for the informative content of the Webpage, articles in Wikipedia, articles in Newsletter (they can be chairs of TCs/PCs/MOs), the effect of this activity will be significantly greater.

PC FOR EDUCATION

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The main activity developed in this period is the preparation of the First International Symposium on the Education in Mechanism and Machine Science (ISEMMS), to be held in Madrid, Spain, 13-14th June 2013.

(http://www.uc3m.es/portal/page/portal/congresos_jornadas/semms). The manuscripts will be published in Springer.



The virtual community called divulgamaq.org is still activated, (pending to link to the IFToMM webpage).

Future plans:

To encourage personal exchanges.

To assist UNESCO in finding experts for instruction in developing countries.

To maintain records of exchanges and of long-term visits.

In order to prepare a document of the teaching in world among the IFToMM Member Organizations, PC members have been encouraged to fulfill a survey (template) about the information of their University and with the other Universities of their countries considered of interest as a reference.

Currently we have received the proposal from National University of Tucuman (Argentina) to be included in PC on Education.

PC FOR THE STANDARDIZATION OF TERMINOLOGY

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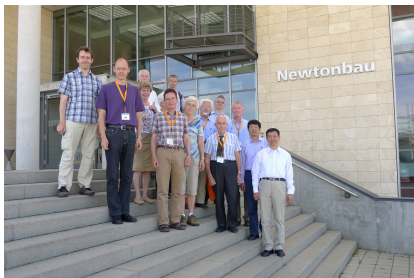
A working meeting was successfully held at TU Ilmenau (Germany), June 24-30, 2012, attended by 16 participants.

Major results are:

- A new chapter for terminology of “Compliant Mechanisms”. A start list of 29 terms was agreed.

- A new chapter for terminology of “Quality factors in Machines and their Components”, with four sub-chapters. The first sub-chapter regarding “General notions of quality” was discussed for further working out.

- A scientific colloquium on MMS with 7 papers presented by the attendees.



The website of the PC at TU Delft, see www.iftomm.3me.tudelft.nl, has been updated with terminology as completed in the previous period:

- A revised chapter for “Gearing” terms and

- A new chapter for: “Transportation Machinery and Logistics” (English terminology).

NEWS FROM TECHNICAL COMMITTEES

[A total of 8 reports]

TC FOR COMPUTATIONAL KINEMATICS

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1. Membership changes

- (1) Prof. Yukio Takeda (takeda@mech.titech.ac.jp) with Department of Mechanical Sciences and Engineering, Tokyo Institute of Technology nominated as member.

- (2) Assistant Prof. Sandipan Bandyopadhyay (sandipan.bandyopadhyay@gmail.com) with Department of Engineering Design, Indian Institute of Technology-Madras, India nominated as member.

- (3) Dr. Andreas Pott (andreas.pott@ipa.fraunhofer.de), Department of Robot and Assistant Systems, Fraunhofer Institute for Manufacturing Engineering and Automation, Nobelstr. 12 70569 Stuttgart, Germany nominated as observer.

2. Statements for the activity of the TC/PC

The TC of Computational Kinematics seeks to foster research on Computational Kinematics, organize conferences and workshops in this field, establish national and international collaborations and especially train young scientists in methods relevant for the treatment of kinematic problems.

The basic statements are operationalized by the following activities:

- (1) Organize conferences (two major conferences: CK every four years and ARK every even year; furthermore support local conferences)

- (2) To update and continuously maintain the web page of the TC

- (3) Establish national and international collaborations by visits, applying to international collaboration programs

- (4) Organize Summer Schools

3. Discussion of recent activities

Two new members and one new observer have been nominated for approval at the last two TC meetings. The TC plans to go on with the effort to promote the field of Computational Kinematics and to attract conferences under IFToMM patronage.

4. Meetings and visits

The first TC meeting took place on 25.06.2012 during ARK 2012, Innsbruck, Austria.

The second TC meeting took place on 20.09.2012 during EUCOMES 2012, Santander, Spain.

Manfred Husty visited Technical University of Cluj-Napoca within the joint research project Austria-Romania (2012-2013).

Manfred Husty visited Technical University of Cluj-Napoca as invited speaker at the Summer School on Models and Methods in Kinematics and Robotics 2012, July 01, 2012 - July 08, 2012.

Jean-Pierre Merlet visited Technical University of Cluj-Napoca as invited speaker at the Summer School on Models and Methods in Kinematics and Robotics 2012, July 01, 2012 - July 08, 2012.

Manfred Husty visited Chicago on August 11-12, 2012 as invited speaker during the NSF Workshop on 21st Century Kinematics at the 2012 ASME IDETC Conference in Chicago.

Vijay Kumar visited Chicago on August 11-12, 2012 as invited speaker during the NSF Workshop on 21st Century Kinematics at the 2012 ASME IDETC Conference in Chicago.

5. Research joint collaborations and exchanges

Among the members of the TC CK are a lot of collaborations on an institutional or private basis. There should be some effort to channel these activities in joint project applications e.g. within European research frameworks.

An important issue is to improve the connections between the universities and the companies through direct projects regarding implementing of the research results in the industry. Bilateral agreement between Austria-Romania in the field of Parallel Robots for Medical Applications - Project approved 2012-2013

Bilateral Erasmus Academic Agreement Spain-Romania in the field of Robots with Professors and Students Mobility (2010-2014).

Joint project between Universite Laval (C. Gosselin) and University Innsbruck approved.

Collaboration between University Innsbruck and National Cheng Kung University (Ch. Huang) established.

6. Conference events

Indicate please the TC conference

-Organising the ARK 2012, Advances in Robot Kinematics, Innsbruck, Austria, June 24–28, 2012, Conference Chairmen: Manfred Husty, Jadran Lenarcic. Most of the members of TC have been involved and have been active in the review process of the papers. 56 papers have been accepted for publication (Springer Book) and presentation at ARK 2012. The event had more than 90 participants.



The Kinematics community during ARK 2012, Innsbruck

-Supporting the MTM - Robotics 2012 - Joint international conference of the XI International Conference on Mechanisms and Mechanical Transmissions (MTM) and the International Conference on Robotics (Robotics'12), Clermont-Ferrand, France, June 6-8, 2012, Chairman Grigore Gogu.

-Supporting the 15th International Conference on Geometry & Graphics, McGill University, Montreal (Quebec) Canada, 2012-08-1...5, Chairman Paul Zsombor-Murray.

-Participation at the NSF Workshop on 21st Century Kinematics at the 2012 ASME IDETC Conference in Chicago, IL on August 11-12, 2012, Chairman Michael McCarthy.

7. Teaching activities

Write main plans (lectures, seminars, student workshops, summer schools ...)

Summer School on Models and Methods in Kinematics and Robotics 2012, July 01, 2012 - July 08, 2012, Chair: Doina Pislă, Co-chairs: Manfred Husty, Doru Talaba. The summer school addresses to PhD, young researchers, or specialists working in robotics who want to broaden their methodological skills. 45 registered participants from Austria, France, Iran, Germany, Poland, Romania, Serbia, Slovenia, Spain, Switzerland.



Photo: The participants at the Summer School Models and Methods in Kinematics and Robotics 2012, Cluj-Napoca

8. Future planned activities

CK 2013 Workshop in Barcelona, Spain organized by Prof. Federico Thomas, the first proposal for the Call for papers, <http://www.iri.upc.edu/ck2013>.

Second Conference on Interdisciplinary Applications of Kinematics, September 16-18, 2013, Lima, Peru, Chairman: Andr s Kecskem thy

TC FOR GEARING AND TRANSMISSIONS

Prof. Daizhong Su, Product Design, Nottingham Trent University, UK

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The TC is composed of 43 members from 24 IFToMM Member Organization, and the chair is Prof. Daizhong Su.

The history of Gearing and Transmissions Technical Committee of IFToMM:

The idea of creating the Committee was proposed in 1976 by Prof. A. Morecki, who was that time the Secretary General of IFToMM and invited a famous scientist D.W. Dudley (USA) to head the Committee. The directions of Technical Committee activity (dynamics, load-bearing capacity, efficiency, techniques of gears' manufacture, differential gear mechanisms) were outlined at the first Committee meetings, which were held, as a rule, within the framework of large conferences on gears and transmissions. The first Committee was formed and it included Prof. G. Henriot (France), Prof. M. Dietrich (Poland), Prof. Z. Terplan (Hungary), Prof. H. Winter (Germany), Dr. K. St lzle (Germany), Prof. A. Kubo (Japan), Prof. J. Hlebanya (Yugoslavia) and other famous scientists and engineers.

In 1986 Dr. K. St lzle took the place of D.W. Dudley on the post of Chairman. Under his chairmanship the meetings were carried out in the framework of large conferences in France, China, Japan, U.S.A and together with meetings of Gearing Committee (TC60) of ISO. Two important directions were chosen for TC activity: (1) calculation of gears overloading that appears, in particular, during their abrupt stoppage; (2) determination and application of various factors during calculation of gears' load-bearing capacity.

From 1993 to 1997 the Committee was headed by Prof. A. Kubo (Japan), who surveyed the members of TC for the question of research activity of the Committee for the nearest years, that resulted in stating a problem – to determine the most urgent needs of gear engineers and scientists and to develop recommendations and proposals for improving the quality of their scientific-technical production. During this period a project of carrying out the international conferences on motion and power transmissions was developed. During these years also the activity of the Journal "Gearing and transmissions" began, which at first was considered as a Journal of the Technical Committee, and later – as one of official Journals of IFToMM. V.I. Goldfarb (Russia) became the head of the Journal, and the Editorial Board was formed of many leading gear experts from many countries, including some members of TC.

In 1997 Prof. V.I. Goldfarb was elected the Committee Chairman. At the first meeting in the city of Tun (Switzerland), that took place together with the meeting of ISO TC60, he proposed a concept of the Committee activity, according to which the following directions were outlined: joint implementation of scientific programs and projects, carrying out conferences and scientific seminars, cooperation

with national associations and other gear organizations; publishing, educational, informational activity. This concept became a certain plan of the Committee activity. The theme “Development of methods and tools of estimating the state and diagnostics of gears and gearboxes” was suggested as a priority one for carrying out the joint scientific research. Universities of Russia, Slovakia, Poland, Czech Republic, Belarus took place in realization of the international program. In the period from 1994 to 2004 the Journal “Gearing and transmissions” was regularly published, and experts from 22 countries were the Committee members.

In 2005 Prof. A. Dobroczeny (Hungary) was elected the Committee Chairman.

In 2011 Prof. D. Su (UK) was elected the Committee Chairman.

The TC activities for the period of March – June 2011 were reported at the IFToMM meeting held in June 2011 in Guanajuato, Mexico. This report is about the activities conducted by this TC to date since June 2011.

In addition to the activities mentioned below, as Chair of the TC Professor D. Su approved in August 2011 the last version Chapter 12 Gearing of “Standards and Terminology”, proposed by Victor Starzhinsky of IFToMM Permanent Commission “Standards and Terminology”.

A TC meeting was held during the ICPT2011 (China, Xi'an).

At the meeting, the following issues were discussed:

- ⌚ Reviewed the activities conducted since last TC meeting held in June,
- ⌚ Discussed the forthcoming activities of the TC, and
- ⌚ Agreed to support the forthcoming two conferences: (1) the Gear Conference to be held in Germany 2013, and (2) the 5th International Conference on Advance Design and Engineering.

The Advanced Design and Manufacturing Engineering Centre (ADMEC) of Nottingham Trent University, UK and the State Key Laboratory of Mechanical Transmission (SLMT) of Chongqing University, China, have been jointly conducting the following project. Both ADMEC and SLMT are key research centres of this TC. Project title: “Condition based maintenance of agitators using advanced condition monitoring and Internet/wireless technologies”. This project is led by Professor Daizhong Su of ADMEC, and Professor Yimin Shao of SLMT plays an important role in the project. The research develops a novel approach for condition monitoring of gearboxes used in agitators.

The TC supported the following conferences:

- ⌚ In May 2012 in Hungary, Balatonfured, there was a Conference KOD2012.

Gearing and Transmission TC took part in organization of the Conference. 103 reports from 17 countries were presented at the Conference.

- ⌚ The International Conference on Power Transmission (ICPT2011), 25-29 October 2011, Xi'an, China. Key members of Gearing and Transmission TC were involved in organising the conference, including Professor Datong Qin as the

<p>Conference Co-Chairman; Professor Veniamin Goldfarb and Bernd-Robert Hoehn as the Conference TC Co-Chairmen; and Professor Daizhong Su, Professor Aizoh Kubo, and Professor Vilmos Simon as the conference committee members.</p> <p>⌚ The 4th International Conference on Power Transmissions (PT '12), June 20 - 23, 2012, Sinaia, ROMANIA. Several members of the</p>	<p>Gearing and Transmission TC were involved in organising the conference, including Professor George DOBRE as the conference chairman, and Professor Veniamin Goldfarb, Professor Datong Qin, Professor Bernd-Robert Hoehn, and Professor Daizhong Su as the conference committee members.</p> <p>The future activity has been planned in:</p> <p>(1) Preparation for the following international conferences</p> <p>⌚ The International Conference on Gears, VDI, to be held in October 2013 in Munich, Germany. This will be the largest conference in the subject area.</p> <p>⌚ The 5th International Conference on Advanced Design and Manufacture, to be held in Valencia, Spain, September 2013. Gearing and mechanical transmission will be the major theme</p>
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of the conference. As a high quality conference, all the papers will be published in a refereed journal 'Key Engineering Materials' which will be indexed by EI and major indexing media.

(2) The TC will make a plan for the possible cooperation with other TC/PCs, for example, Reliability, Tribology, Education and others.

(3) To re-establish the Gearing journal. At the last IFToMM Executive meeting held on 19th June 2011 in Guanajuato, Mexico, it was agreed to locate funding 2000 USD to this TC for re-establishment of the Gearing Journal. The TC Chair, Professor D. Su contacted Professor Just Herder of IFToMM in February 2012, requesting for the funds, but so far the TC has not received the budget, therefore we have not been able to start this activity.

TC FOR LINKAGES AND MECHANICAL CONTROLS

Assoc. Prof. Erwin-Christian Lovasz, Politechnica University of Timisoara, Department of Mechatronics, Romania

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After the decision of IFToMM EC to preserve the TC Gearing, the new founded TC Mechanical Transmissions through merging of the TC Linkages and Cams and TC Gearing, was redistributed in the TC Gearing and Transmissions and TC Linkages and Mechanical Controls (old TC Linkages and Cams). The first meeting of the renamed TC Linkages and Mechanical Controls was held in Guanajuato, Mexico in June 2011, during the 13th IFToMM World Congress. After election of Prof. Burkhard Corves as Member of the IFToMM Executive Council the new TC chair, Assoc. Prof. Erwin-Chr. Lovasz and the new deputy chair Assoc. Prof. Victor Petuya were elected.

In order to re-establish the membership of the nominated members from national organizations, the database of the actual TC must be updated. The process of updating is ongoing under the leading of its new chair. The number of individual members currently sums 23 persons from 14 different IFToMM member countries all over the world; 20 of the individual members are full members (maximum 2 from each IFToMM member country). The remaining 3 individual members are observers or honorary members.

Since 2011 the following TC meetings were held:

- the meeting at VUTS Liberec, Czech Republic, during the XIth International Conference on the Theory of Machines and Mechanisms



- the meeting at Faculty of Industrial and Telecommunication Engineering, Santander, Spain, during the 4th European Conference on Mechanism Science

- the next meeting will be held on occasion of the 2nd Asian Conference on MMS in Tokyo, Japan (07 November 2012).

TC Linkages and Mechanical Controls supported the following conferences:

- The First Workshop on Mechanisms and Mechanical Transmissions MeTrApp-2011 in Timișoara, Romania (October 2011)

- The Conference MAMM in CSIR-CMERI-Durgapur - India (January 2012)

- The Conference MTM&Robotics in IFMA Clermont-Ferrand, France (June 2012)

- The XIth International Conference on the Theory of Machines and Mechanisms, Liberec, Czech Republic (September 2012)

For 2013 conferences are planned in Bilbao, Spain (MeTrApp-2013) and in Brașov, Romania (SYROM-2013). Recently, the new site of the TC Linkages and Mechanical Controls is available at the address:

<http://www.mec.upt.ro/tc/>

TC FOR MULTI-BODY DYNAMICS

Prof. Javier Cuadrado, Escuela Politécnica Superior Universidad de La Coruña, Spain

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The TC for Multi-body Dynamics has got 40 members from 23 Member Organizations. The following activities took place in this year. The 2nd Joint Int. Conference on Multi-body System Dynamics (IMSD 2012), Stuttgart, Germany, May 2012, co-sponsored by IFToMM, the world-level event on Multi-body dynamics, was celebrated with great success, reaching the 300 participants, a record in attendance for the community. Moreover, the 6th Asian Conference on Multi-body Dynamics (ACMD 2012), Shanghai, China, August 2012, which received IFToMM patronage, was held for the first time outside Japan and Korea, being also very successful.



Photo: the multi-body community during the 2nd Joint Int. Conference on Multi-body System Dynamics (IMSD 2012).

Two special issues were published based on contributions presented at the 1st Joint Int. Conference on Multi-body System Dynamics (IMSD 2010), Lappeenranta, Finland, May 2010: one in Multi-body System Dynamics (vol 27, no 1), and another one in the Journal of Multi-body Dynamics (vol 225, no 4). Furthermore, a special issue was published in Multi-body System Dynamics (vol 28, no 1-2) from contributions presented at the Euromech Colloquium 511, Biomechanics of Human Motion, Azores, Portugal, March 2011, and a volume of the new IUTAM Procedia series (vol 2) with contributions presented at The IUTAM Symposium on Human Body Dynamics, Waterloo, Canada, June 2011.

In the last TC meeting, it has been proposed the creation of a section on benchmark problems in the TC web, since this a need perceived as crucial for the real progress of the community knowledge. In order to give visibility to the initiative, a special session on benchmark problems is to be held during the ECCOMAS Thematic Conference Multi-body Dynamics 2013, Zagreb, Croatia, July 2013.



Photo: the participants at the 6th Asian Conference on Multi-body Dynamics (ACMD 2012).

A one-week summer school on Multi-body system dynamics was held at Lappeenranta University of Technology, Finland, in June 2012, with participation of several TC members as lecturers. Plans for the next future are to continue with the activity in the mentioned directions. A special effort is to be devoted to the creation of the TC web benchmark section, to provide visibility to it, and to encourage the Multi-body dynamics community to contribute to its success.

TC FOR ROBOTICS AND MECHATRONICS

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Currently the TC has 79 members from 30 MOs. There are two new members from India joining the TC: Prof. Ashitava Ghosal, IISc Bangalore, and Prof. Subir Kumar Saha, IIT Delhi. The TC has implemented a uniform conference review process and forms for the major sponsoring events like Romansy and Isrm in order to improve the quality of these events. Proceeding publications of these conferences with proper EI and SCI are under study by TC members. The new conference bidding and selection procedures have been implemented for fairness and transparency. ATC meeting was convened in Paris, France on June 12, 2012 with 8 members and 6 observers. The TC meetings discussed about the organization of special interest group within the TC and conference/journal publication matters and promotion of memberships. During the TC meeting in June 2012, TC members exchanged international collaboration status of every country. Romansy 2012 has been successfully held in Paris, France from June 12 to 15, 2012 with about 70 delegates all over the world. The next major TC events are 3rd International Symposium on Robotics and Mechatronics in Singapore from Oct. 2-4, 2013 and Romansy 2014 in June-July 2014. The TC also endorsed the technical sponsorship of Clawar 16 in Sydney, Australia in July 2013.



TC FOR ROTORDYNAMICS

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Dipartimento di Meccanica Campus Bovisa, Italy

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The TC Rotordynamics is composed of 49 members from 37 IFToMM member organizations. There are 4 more members from 3 observer countries. The Chair is Prof. Paolo Pennacchi.

Activity of the TC:

- ⌚ Continuous work of the TC in order to support teaching and research activities in the area of Rotordynamics.
- ⌚ A symposium on rotordynamics has been organized during ASME IDETC conference in Chicago, August 2012.
- ⌚ Preparation of the new Rotordynamics conferences, especially IFToMM Conference 2014 in Milano and the 2018's conference.
- ⌚ Review process for IMechE VIRM 10 Conference (September 10–13) in London and support of young delegates.
- ⌚ After IFToMM Rotordynamics Conference 2010 in Seoul, the main conference event for the TC Rotordynamics has been the IMechE VIRM 10. Chair of the conference has been Prof. David Ewins. There have been about 130 participants and a total of about 80 papers.



Picture of VIRM 10. From the left: Prof. Ewins (Chair of VIRM 10), Prof. Pennacchi (TC Chair), Mrs. Morton, Prof. Nordmann (former TC chair), Mrs. Tanaka, Prof. Morton, Prof. Tanaka.

Future Activities:

IFToMM Rotordynamics Conference 2014 in Milan: this conference will be the ninth of the series of TC organized conferences and will be organized by Prof. Paolo Pennacchi. The local organizing committee is in the preparation process for this event.

There are several research joint collaborations and exchanges in the Rotordynamics community. In the frame of EU-Research programs European Universities and companies as well are involved in common research activities, for instance between Czech republic and Italy.

There have been also exchanges of PhD students and researchers between Italy and Brazil in the framework of an academic agreement during 2012, between Italy and Australia in 2011, Germany and Brazil, Greece and Germany, India and Germany, etc.

More information available in the TC webpage:

<http://tcrotdyn.tuwien.ac.at>

TC FOR SUSTAINABLE ENERGY SYSTEMS

Prof. Dr. eng. Ion Visa, Transilvania University of Brasov, Romania

Email: visaion@unitbv.ro

During 2012 the TC was involved in R&D, education and training activities. A significant part of the activity was focused on strengthening the links with the economic environment by involving TC members in cluster-type structures; the TC Chairman was part of the stirring group for a novel Romanian Renewable Energy Cluster and was invited to present the TC opening in meetings organised by other thematic clusters: ETREC (sustainable electricity), Pro-Wood (biomass).

Enlarging the TC coverage at international level represented another topic of interest. So, the TC was represented in the European Sustainable Energy Innovation Alliance, ESEIA, and further cooperation was designed. The TC Chairman was re-elected also Vice-president of ESEIA.

The International Summer School on Renewable Energy Systems and Sustainability, organized by the International Association of Engineering Students, BEST and Transilvania University of Brasov, was opened to 23 students from 17 countries; the lectures and practical applications were developed in the R&D department Renewable Energy Systems and Recycling and in the R&D Institute of the Transilvania University of Brasov.

Joint cooperation between Transilvania University and the Technical University of Moldavia (Prof. Ion Visa and Prof. Dulgheru, TC members) on novel mechanisms for enhancing the conversion efficiency in small hydros and small wind turbines was launched during two meetings in 2012.

TC FOR TRANSPORTATION MACHINERY

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The Transportation Machinery TC has been busy this year. We have had 3 quarterly teleconferences and 1 International Workshop on Hybrids in Moscow. The year began with a very nice visit to the Univ. of Guanajuato, Salamanca. Prof. Jose M. Rico hosted Dr. Madhu Raghavan on the occasion of the 25th year celebration of the Ph.D. program at Salamanca.



Dr. Raghavan (left) and Prof. Rico (right)

In our first quarterly teleconference/update of the year on April 6, we had participation from Prof. Nenad Zrnica of Serbia and Prof. Nong Zhang of Australia. This was followed by a second teleconference/update on July 6. On this occasion Prof. Bertram of Germany provided a long and detailed update on his group's work on intelligent transportation systems. Prof. Chintien Huang of Taiwan described his work on refining timing chains for small engines (less than 300 cc) used on motorcycles. Prof. Nong Zhang of Australia described his work on 2-speed DCTs for Electric Vehicles.

At the International Hybrids workshop in Moscow, Aug. 2012, we had enthusiastic participation from local Russian hybrid powertrain inventors including Prof. Drachko of Ukraine and Prof. Gulya and his colleagues from Combarco and MAMI. The event was hosted by Dr. Konstantin Salamandra of IMASH who worked very hard to make it a success. We are grateful to Dr. Salamandra for leadership and initiative.



Dr. Raghavan, Prof. Astashev, Dr. Ushakov, Prof. Drachko, Dr. Salamandra

We had our third teleconference/update on October 19 with participation by Prof. Nong Zhang of Australia, Prof. Chintien Huang of Taiwan and Dr. Raghavan on USA. Based on the success of the workshop in Moscow, we are planning a similar Hybrids workshop in China next year (possibly in Hunan). The details are yet to be worked out and we will keep the rest of the IFToMM team updated.

BOOK SURVEY

Dr. Ir. Teun Koetsier, Universitair Hoofddocent, Department of Mathematics, Faculty of Science, VU University Amsterdam, the Netherlands

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Prof. Marco Ceccarelli, University of Cassino and South Latium, Italy

Email: ceccarelli@unicas.it

Review of Teun Koetsier & Marco Ceccarelli (eds), *Explorations in the History of Machines and Mechanisms, Proceedings of HMM2012*, Springer, 2012, ISBN 978-94-007-4131-7, hard cover, 594 pages

This book, volume 15 in the Springer Series on History of Mechanism and Machine Science, contains the proceedings of the Fourth International Symposium on the History of Machines and Mechanisms, HMM2012. The symposium was organized at VU University in Amsterdam in May 2012 by IFToMM's Permanent Commission for the History of Mechanism and Machine Science.

After the review process 40 papers by authors representing 20 different countries were accepted for publication in the proceedings. Most of the chapters in the book concern the development the industrialized nations in the 19th and 20th centuries. There are, for example, contributions on the history of mechanism and machine science in that period in Germany, Russia, Spain, France, Italy, Spain, Romania, Mexico, Serbia and England. Yet several contributions refer to the wider context. A few examples will give an idea of the broad scope of the book. Kuo Hung-Hsiao and Hong Sen-Yan apply a modern design methodology to an ancient Chinese cross bow. A paper by Nam Moon-Hyon nicely illustrates the technological potential of the East in the 15th century. He discusses the Korean Chief Royal Engineer Jang Yeong-sil, who designed a complex water clock. Several chapters in the book are devoted to Greek and Roman culture. Finlay McCourt studies mechanisms of movement in Heron of Alexandria's work. Helen Fragaki wrote on an automaton that functioned possibly on the Pharos of Alexandria. Junichi Takeno and Yoshihiko Takeno attempted to unravel the mystery of the defense chain that once protected Constantinople. Michael Wright has a paper on the Antikythera mechanism, an unbelievably complex planetarium from the second century BC. Giuseppe Boscarino compares the epistemological status of concepts in Aristotle and Archimedes. Also the transfer of knowledge gets attention. Frances Moon wrote on the role of social networks in the development of science and technology. Michela Cigola describes the role of the Jesuits in the spreading of mechanical knowledge from Europe to China in the 16th and 17th centuries and Baichun Zhang wrote on the transmission of European clock-making technology into China in the 17th and 18th centuries.

CALL FOR 2015 IFToMM WORLD CONGRESS

Date: October 25-31, 2015

Venue: Taipei, Taiwan

Secretariat Email: iftomm2015@ntu.edu.tw

General Chair: Prof. Shuo Hung Chang

Email: shchang@ntu.edu.tw

Department of Mechanical Engineering

National Taiwan University, Taiwan

Co-Chair: Prof. Marco Ceccarelli

E-mail: ceccarelli@unicas.it

Laboratory of Robotics and Mechatronics
University of Cassino and South Latium, Italy

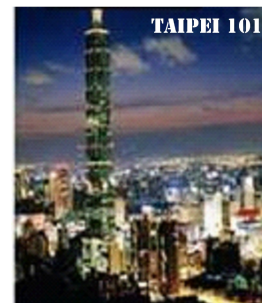
Taipei City has top wireless broadband coverage in the world. Majority of countries do not need visa to enter Taiwan for a 30 days visit. VISA requirement can be found in www.boca.gov.tw.

Traveling information is available in
<http://taipeitrip.net/en/>

Weather in October is usually comfortable at 21~27°C



Taipei is easy to access by 200 flights from 56 major cities.



Taipei 101 is the 2nd tallest building in the world with height of 508 meters.

Important Dates:

Full version of the paper should be submitted through the Conference website.

Full Paper submission: 1 Nov. 2014

Provisional decision: 15 March 2015

Final version submission: 25 Apr. 2015

Final decision: 25 Jun. 2015

FORTHCOMING IFToMM SPONSORED CONFERENCES

NAME AND PLACE OF THE CONFERENCE	CONTACT INFORMATION	DATES	PC/TC/MO
Shanghai, China 2 nd Students International Olympiad on Mechanism and Machine Science (SIOMMS2013) http://siomms2013.sjtu.edu.cn	Weizhong Guo wzguo@sjtu.edu.cn	April 19-23, 2013	MO

n/			
Barcelona, Spain CK2013 – 6 th Int. Workshop on Computational Kinematics http://www.iri.upc.edu/ck2013	Prof. Federico Thomas fthomas@iri.upc.edu	May 12-15, 2013	TC Computational Kinematics
Madrid, Spain First International Symposium on the Education in Mechanism and Machine Science http://www.uc3m.es/portal/page/portal/congresos_jornadas/isemms	Mechanical Dept. Carlos II University av. de la Universidad, 30 28911 leganes, Madrid, Spain	June 13-14, 2013	TC – The members of the IFToMM PC for Education and others. Chair – J.C Garcia Prada (chair of the IFToMM PC for Education)
CLAWAR 16 (Climbing and Walking Robots) Conference http://clawar2013.feit.uts.edu.au	Prof. Kenneth J. Waldron kenneth.waldron@uts.edu.au	July 14-17, 2013	IFToMM Australia TC Robotics
Torino, Italy 5 th World Tribology Congress http://www.wtc2013.it	Prof. Terenziano Raparelli terenziano.raparelli@polito.it	September 8-13, 2013	
Bilbao, Spain The Second Workshop on Mechanisms, Transmissions and Applications	Victor Petuya victor.petuya@ehu.es	October 02-04, 2013	
Nanyang Technological University, Singapore 3 rd IFToMM International Symposium on Robotics and Mechatronics 2013 http://www.iftomm-isrm.org	I-Ming Chen michen@ntu.edu.sg	October 02 - 04, 2013	TC Robotics and Mechatronics TC Computational Kinematics TC Mechanical Transmissions

2013 IFToMM PC Workshop on History of MMS http://www.museomotori.unipa.it	Marco Ceccarelli ceccarelli@unicas.it Francesco Sorge francesco.sorge@unipa.it	21-22 November, 2013	IFToMM Permanent Commission for History of MMS
1 st International and 16 th National Conference on Machines and Mechanisms (iNaCoMM 2013) http://www.nacomm2013.org	Assistant Professor Pushparaj Mani Pathak pushpfine@iitr.ernet.in inacomm2013@iitr.ernet.in	December 18-20, 2013	IFToMM India
Busan, Korea The Third Joint International Conference on Multi-body System Dynamics (IMSD2014) and The 7 th Asian Conference on Multi-body Dynamics (ACMD2014) <u>Not yet web page</u>	Prof. Sung-Soo Kim sookim@cnu.ac.kr	June 29 – July 3, 2014	TC Multi-body
University of Zagreb ECCOMAS Thematic Conference Multi-body Dynamics 2013 http://eccomas-multibody.fsb.hr	Prof. Zdravko Terze zdravko.terze@fsb.hr	July 1-4, 2014	TC Multi-body
Huatulco, Mexico 5 th IFToMM-FelbIM International Symposium on Multi-body Systems and Mechatronics MUSME 2014 http://www.musme2014.org	Prof. Marco Ceccarelli ceccarelli@unicas.it Prof. Eusebio Eduardo Hernandez Martinez euherandezm@ipn.mx	21-24 October, 2014	

IFToMM PUBLICATION FRAMES

A series of books by Springer on history of mechanical engineering with emphasis on MMS is under production with the efforts by Prof. Ceccarelli (Springer Bookseries on History of Mechanism and Machine Science: <http://www.springer.com/series/7481>).

A third Volume in the series of Distinguished Figures in Mechanism and Machine Science: Their Contributions and Legacies are scheduled by Prof. Ceccarelli within the book series on History of MMS.

A Special Edition of the International Journal of Terraspace Science and Technology (IJTSE), on cross-fertilization of science and engineering between East and the West was initiated by Prof George Sih of the Chinese Academy of Sciences, and the PC Chair T.G. Chondros. The initiative of this special issue refers to links and knowledge transmission between Asia and Europe, the role of the Hellenistic and Roman culture, and evolution of mechanisms and machine science and engineering training. 14 contributions have been submitted, the volume under production, expected to appear by the end of this year.

The scientific journal “Problems of Mechanics” has homepage at the address: <http://www.iftomm.org> (and select publication) and <http://www.pam.edu.ge>. The Editor-in-chief is Professor Nodar Davitashvili. The summaries of the scientific papers, published in the journal, are being published in the journal “Mechanics” – Institute of Scientific and Technical Information (VINITI - Moscow) of Russian Academy of Sciences in “General Problems of Mechanics” and in “Georgian Review journal” (in Georgian, English and Russian languages). The scientific journal of IFToMM “Problems of Mechanics” is being published in Georgia (Tbilisi) by Georgian Committee of IFToMM, which with an imprimatur to issue international scientific journals, monographs, bulletins, etc., is registered by the Court of Vake-Saburtalo District of Tbilisi on February 12, 2001 (Registration №5a/9-246). The scientific papers are being published in English. The current Publishing Editor for the journal is: LTD Bartoni. Director Nika Burjanadze. Add.: 43 Vazha-Pshavela ave. 0177, Tbilisi, Georgia, E-mail: info@bartoni.ge. The scientific journal of IFToMM “Problems of Mechanics” has been issued three times during the year 2012: №1(46)/2012; №2(47)/2012 and №3(48)/2012. The fourth quarter journal No 4(49)/2012 of the year 2012 will be published at the end of December. The scientific journal of IFToMM “Problems of Mechanics” is being widely distributed in Georgia and in: Russia-State Library (Moscow), the Library of Russian Academy of Sciences, VINITI (Moscow), Ukraine, Byelorussia, Kazakhstan, Armenia, Azerbaijan, Lithuania, Poland, France, Italy - president of IFToMM, Italy – Chair of the Permanent commission on Publications; Archive of IFToMM, etc.

☉affiliated Journals:

Mechanism and Machine Theory <http://www.elsevier.com>
Problems of Mechanics <http://pam.edu.ge>
Open-access Mechanical Sciences <http://www.mech-sci.net>
Chinese Journal of Mechanical Engineering
<http://www.cjmenet.com>
Advances in Vibration Engineering
<http://www.tvi-in.com/index.asp>

☉Book series on MMS <http://www.springer.com/series/8779>

☉Book series on History of MMS

<http://www.springer.com/series/7481>

IFToMM BODIES AND CONTACTS

General Assembly

The General Assembly is the supreme body of the Federation and determines its policy. It is composed of the Chief Delegates of IFToMM Organization Members and members of the Executive Council.

Executive Council

The Executive Council manages the affairs of the Federation between the sessions of the General Assembly. It is elected every four years, meets annually, and is composed of the President, Vice-President, Secretary-General, Treasurer, and six ordinary members.

Commissions and Committees

Each Permanent Commission and Technical Committee is composed of a Chairperson, appointed by the Executive Council, a Secretary and members, nominated by the Chairperson and appointed by the Executive Council. A Chairperson shall not serve for more than two terms consecutively. The general goals for the work of the Commissions and Committees are aimed at promoting their fields of interest by attracting researchers and practitioners, including young individuals, in order to:

- define new directions in research and development within their technical areas;
- establish contacts between researchers and engineers;
- initiate and develop bases and procedures for modern problems;
- promote the exchange of information;
- organize national and international symposia, conferences, summer schools, and meetings.

Mission:

To promote research and development in the field of Machines and Mechanisms by theoretical and experimental methods, along with their practical applications

Vision:

To provide leadership for cooperation and development of modern results in the Mechanism and Machine Sciences by assisting and enhancing international collaboration.

46 IFToMM Members Organizations

ARMENIA	AUSTRALIA
AUSTRIA	AZERBAIJAN
BELARUS	BRAZIL
BULGARIA	CANADA
CHINA-BEIJING	CHINA-TAIPEI
CROATIA	CZECH REPUBLIC
DENMARK	EGYPT
FINLAND	FRANCE
GEORGIA	GERMANY
GREECE	HUNGARY
INDIA	ISRAEL
ITALY	JAPAN
SOUTH KOREA	LITHUANIA
MACEDONIA	MEXICO
NETHERLAND	PERU

POLAND	PORTUGAL
ROMANIA	RUSSIA
SERBIA	SINGAPORE
SLOVAKIA	SLOVENIA
SPAIN	SWITZERLAND
TUNISIA	TURKEY
UKRAINE	UNITED KINGDOM
USA	VIETNAM

Miroslav Václavík (Czech Republic)

Past-President: Kenneth J. Waldron (USA)

⌚Executive Council (2012-2015):
 Yoshihiko Nakamura (Japan) – President
 Veniamin I. Goldfarb (Russia) – Vice President
 Teresa Zielinska (Poland) – Secretary General
 Just Herder (Netherlands) – Treasurer
 Shuo Hung Chang (China-Taipei)
 Burkhard Corves (Germany)
 Vijay Kumar (USA)
 Jean Pierre Merlet (France)
 Datong Qin (China-Beijing)
 Juan Antonio Carretero (Canada)

Past-President: Marco Ceccarelli (Italy)

⌚13 Technical Committees

- ⌚ TC for Computational Kinematics (chair Doina Pisla)
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