

---

**XVII INTERNATIONAL CONGRESS**  
**SUMMER SESSION**  
**“MACHINES. TECHNOLOGIES. MATERIALS”**  
**09–12.09.2020 VARNA, BULGARIA**



---

**TOPIC**  
**„INNOVATIONS FROM SCIENCE TO INDUSTRY”**

**ORGANIZER**  
**SCIENTIFIC-TECHNICAL UNION OF MECHANICAL ENGINEERING BULGARIA**

**CO-ORGANIZERS**  
Federation of the Scientific-Technical Unions in Bulgaria  
Technical University Sofia  
Technical University Varna  
Technical University Gabrovo  
Ruse University „Angel Kanchev”  
Todor Kableshkov University of Transport Sofia  
University of Chemical Technology and Metallurgy Sofia  
Society of Polish Mechanical Engineers and Technicians (SIMP)  
Association of Mechanical Engineers - Slovakia  
Association of Mechanical Engineers - Czech Republic  
Union of Metallurgists – North Macedonia  
Higher Education Academy of Sciences of Ukraine  
Union of Mechanical Engineers - Ukraine  
Scientific – Technical Association China  
Scientific and Technical Unions Varna

**WITH THE SUPPORT OF**

**1. National Scientific-Technical Societies:**

- *Society of Foundry*
- *Metal Science and Heat Treatment Society*
- *Automation of Discrete Production Society*
- *Bulgarian Society of Non-Destructive Testing*
- *Gear Transmissions and Driving Society*
- *Plastic Deformation and Destructive testing*
- *Plastics in Mechanical Engineering Society*
- *Society of Powder Metallurgy and Composite Materials*
- *Management and Engineering Society*
- *Ergonomics and Industrial Design Society*
- *Industrial Informatic Society*

**2. Bulgarian Welding Society**

**3. Bulgarian Society of Robotics and Mechatronics**

**4. Bulgarian Society of Tribology**

## HONORARY COMMITTEE

Acad. Julian Revalski – President of the Bulgarian Academy of Sciences  
Prof. D.Sc. Ivan Yachev – President of the Federation of Scientific Technical Unions in Bulgaria  
Prof. D.Sc. PhD Ivan Kralov – Rector of the Technical University, Sofia  
Prof. Eng. Ventsislav Valchev, PhD – Rector of the Technical University Varna  
Cor. Member Prof. D.Sc. Eng. Hristo Beloev – Rector of the University “Angel Kanchev” Ruse  
Prof. Iliya Zhelezarov, Ph.D. – Rector of the Technical University Gabrovo  
Prof. Dr. Daniela Todorova – Rector of the “Todor Kableshev” University of Transport Sofia  
P Prof. Dr. Senia Terzieva – Rector of the University of Chemical Technology and Metallurgy Sofia  
Prof. D.Sc. Marian Tolnay - President of the Association of Mechanical Engineers Slovakia  
Prof. D.Sc. Sveto Cvetkovski - President of the Union of Metallurgists of North Macedonia  
Dr. Eng. Piotr Janicki – President of the Association of Polish Mechanical Engineers and Technicians  
Mr. Wei Yu – Vice Chair of the Wuxi Association for Science & Technology China

## INTERNATIONAL PROGRAM COMMITTEE

**Chairman:** Prof. DHC Georgi Popov

**Vice Chair:** Prof. Dr. Eng. Tsanka Dikova

**Members:**

Acad. Ivan Vedyakov	RU	Prof. Mihail Aurel Titu	RO
Acad. Yuriy Kuznetsov	UA	Prof. Mladen Velev	BG
Prof. Aleksander Mihaylov	UA	Prof. Mohamed El Mansori	FR
Prof. Anatoliy Kostin	RU	Prof. Movlazade Vagif Zahid	AZ
Prof. Adel Mahmud	IQ	Prof. Nikolay Dyulgerov	BG
Prof. Ahmet Ertas	TR	Prof. Oana Dodun	RO
Prof. Andrzej Golabczak	PL	Prof. Olga Krivtsova	KZ
Prof. Boncho Bonev	BG	Prof. Peter Kostal	SK
Prof. Gennady Bagluk	UA	Prof. Raul Turmanidze	GE
Prof. Detlef Redlich	DE	Prof. Renato Goulart	BR
Prof. Dipten Misra	IN	Prof. Roumen Petrov	BE
Prof. Dmitry Kaputkin	RU	Prof. Sasho Guergov	BG
Prof. Dmitry Dmitriev	UA	Prof. Seiji Katayama	JP
Prof. Emilia Abadjieva	JP	Prof. Sergej Dobatkin	RU
Prof. Eugene Eremin	RU	Prof. Sergej Nikulin	RU
Prof. Juan Alberto Montano	MX	Prof. Stefan Dimov	UK
Prof. Esam Husein	KW	Prof. Svetan Ratchev	UK
Prof. Ilir Doci	KO	Prof. Svetlana Gubenko	UA
Prof. Ivo Malakov	BG	Prof. Sveto Cvetkovski	NM
Prof. Katia Vutova	BG	Prof. Tale Geramitchioski	NM
Prof. Krasimir Marchev	USA	Prof. Vadim Kovtun	BY
Prof. Leon Kukielka	PL	Prof. Viktor Vaganov	RU
Prof. Lyudmila Ryabicheva	UA	Prof. William Singhose	USA
Prof. Milan Vukcevic	ME	Prof. Yasar Pancar	TR
		Prof. Wu Kaiming	CN

## INTERNATIONAL ORGANIZING COMMITTEE

**Chairman:**

Prof. D.Sc. Dimitar Stavrev (BG)

**Members:**

Prof. Galina Nikolcheva (BG)  
Prof. Idilia Bachkova (BG)  
Prof. Lyubomir Dimitrov (BG)  
Prof. Ognyan Andreev (BG)  
Assoc. Prof. Galina Zamfirova (BG)  
Assoc. Prof. Georgi Pandev (BG)  
Assoc. Prof. Hristo Karamishev (BG)  
Assoc. Prof. Hasan Erdem Camurlu (TR)  
Assoc. Prof. Yury Titov (RU)  
Assoc. Prof. Dimitar Karaivanov (BG)

**Vice Chairmen:**

Prof. Dr. Eng. Ivan Kralov (BG)  
Dr. Eng. Raycho Georgiev (BG)

**Members:**

Assoc. Prof. Miroslav Denchev (BG)  
Assoc. Prof. Roman Zahariev (BG)  
Dr. Eng. Emil Yankov (BG)  
Dr. Eng. Margarita Manolova (BG)  
Dr. Eng. Sonya Vachinska (BG)  
Dr. Vladimir Starbakov (BG)  
Eng. Ognyan Zhekov (BG)  
Eng. Ivan Opacak (HR)  
Eng. Uldis Zaimis (LV)  
Eng. Valentin Kurovskiy (UA)

# INVITATION

Dear Colleagues,

The summer session of the XVII International Congress "**MACHINES. TECHNOLOGIES. MATERIALS - INNOVATIONS FROM SCIENCE TO INDUSTRY**" will be held from 09<sup>th</sup> to 12<sup>th</sup> September, 2020 in the resort "St. St. Konstantin and Elena", region Varna, as a comprehensive scientific-technical event, which includes three main topics. The Congress program includes also five special congress sub-sections which were held separately till now.

We invite the scientists and the researchers to present the results of their research works before the academic society and the industry representatives and to publish them in the international scientific magazines, issued by the Scientific-Technical Union of Mechanical Engineering.

We invite companies with presentations at the congress sessions and advertising materials to present their available on the market machines, equipment, technologies, materials and services.

We hope the Congress **MTM'20** will play a leading role as an innovation mediator between the scientific research and industry and we offer you to take advantage of this opportunity.

The weekend program after the **MTM'20** opening will give you a chance for rest, entertainment and learning more about the cultural, historical and natural attractions of the northern coast of Black Sea.

**Prof. D.Sc. DHC Georgi Popov,**  
**President of Bulgarian Scientific-Technical Union of Mechanical Engineering,**  
**Chairman of the International Program Committee**

## SCIENTIFIC PROGRAM

### TOPICS

#### 1. MACHINES:

Design and Construction. Rapid Prototyping. Manufacturing. Investigation and Testing. Exploitation, Maintenance and Repair. Modernization. Recycling and Utilization. Life Cycle Engineering. Re-Engineering. Training.

#### 2. TECHNOLOGIES:

Metal Casting, Plastic Deformation, Welding, Soldering and Adhesive Bonding, Machining. Surface Treatment. Changing of Properties. Testing, Measurement and Control. Mathematical modeling of technological processes. Automation. Logistic. Load Treatment. Management and Engineering. Energy Saving and Environment Friendly Technologies. Training.

#### 3. MATERIALS:

Materials Science. Metal Materials, Non-Metal Materials, Tool Materials, Construction Materials, Accessory Material. Composites. Training.

### SPECIAL CONGRESS SUB- SECTIONS

1. **POWER TRANSMISSIONS 2020 (mechanical, electrical, hydraulic and pneumatic)**
2. **INDUSTRIAL DESIGN ENGINEERING & ERGONOMICS 2020**
3. **INDUSTRIAL INFORMATICS 2020**
4. **KNOWLEDGE. CREATIVITY. INNOVATIONS 2020**
5. **INDUSTRIAL MANAGEMENT 2020**
6. **NANOMATERIALS 2020**
7. **BULTRIB 2020**

**The official language of the Congress **MTM'20** is English.**

## CALL FOR PAPERS

Scientists from all over the world are kindly invited to present the results of their researches in the plenary, section and poster sessions or in the special congress sub-sections.

Companies, offering machines, materials, technologies and services on the market, are also invited to present practical results in accordance with the congress topics in the form of company presentations and advertisement at the congress halls and in the congress printed issues.

**Paper's abstract** up to 200-350 words, **written in English**, in .doc or .docx format, with up to 10 keywords, authors' names and titles, occupation and e-mail address, together with the Author's Response ([Form A](#)) or the [online registration](#) has to be sent to the Organizing Committee not later than **30.06.2020**.

The Author's response Form A will be registered in the section ["Received Abstracts and Papers"](#) of the congress web-site and a registration number will be given the paper. The Organizing Committee recommended the authors use this registration number in the further correspondence and if the files sent also begin with this number and the phrase "mtm20". For example: **131\_Spenser\_mtm20.doc**.

Authors of the approved papers will be informed about the Program Committee's decision not later than **15.07.2020**.

Only papers formatted in accordance with the [graphical](#) and [text](#) instructions, accepted peer-reviewed and presented at the oral and poster congress sections will be published.

**The full text papers** up to 4 pages, written in English, must be sent not later than **15.08.2020** by email, together with the Application form for participation ([Form B](#)) or [online registration](#). The name of the paper's file has to consist of the registration number, author's name and the phrase "mtm20". For example: "**131\_Spenser\_mtm20.doc**"

**If the authors cannot participate personally in the Congress, they can participate in the poster session.** In that case the author should pay only the publication fee and the paper will be published in the congress journals. The poster papers have to be formatted according to the poster [graphical](#) and [text](#) instructions. They should be sent by e-mail until **01.09.2020** so the papers could be presented at the Congress. The Organizing Committee takes the obligation to print the poster and to include it in the poster session.

All instructions can be found on the congress website: <http://mtmcongress.com> An example of the title page can be downloaded there, so the authors could write easy the whole paper according to the requirements.

## PUBLICATIONS

All papers included in the congress scientific program will be published as follows:

- 
- **CD** containing all the papers;
- **Papers written in English:** in the separate issue of the international scientific journals according to the themes of the reports:
  - "[Machines.Technologies.Materials](#)" (Print ISSN 1313-0226, Web ISSN 1314-507X)
  - "[Innovations](#)" (Print ISSN 1314-8907, Web ISSN 2534-8469)
  - "[Materials Science. Non-Equilibrium Phase Transformations](#)" (Print ISSN 2367-749X, Web ISSN 2534-8477)
  - "[Science.Business.Society](#)" (Print ISSN 1313-0226, Web ISSN 2534-8485)
  - "[Industry 4.0](#)" (Print ISSN 2534-8582, Web ISSN 2534-997X)

## FEES AND PAYMENTS

TYPE OF FEE	EURO	
	Up to 15.08.2020	After 15.08.2020
<b>1. Congress fees:</b>		
<b>1.1. Participation Fee</b> <b>Includes:</b> Published in the issue of international periodical magazine „International Scientific Congress „Machines. Technologies. Materials” - ISSN 2535-0021 (Print), ISSN 2535-003X (Online) and in international scientific journals according to the themes of the reports, Welcome cocktail, congress materials, coffee breaks, CD with all congress contributions.	<b>200 / 120*</b>	<b>250 / 180*</b>
<b>1.2. Fee for second and third paper - only publication fee</b>	<b>90</b>	<b>130</b>
<b>2. Accompanying person (including co-authors)</b> <b>Includes:</b> Welcome cocktail , congress materials, coffee breaks	<b>110</b>	<b>150</b>
<b>3. Publication fee</b> ( <i>For authors who cannot participate personally in the congress</i> ) <b>Includes:</b> Published in the issue of International periodical magazine „International Scientific Congress „Machines. Technologies. Materials” - ISSN 2535-0021 (Print), ISSN 2535-003X (Online) and in International scientific journals according to the themes of the reports, CD with all papers and printing of the poster paper in A1 format.	<b>90</b>	<b>130</b>
<b>4. Additional payments:</b>		
<b>4.1.</b> For receiving the printed issue of the journal at the Congress (volume with the papers).	<b>20</b>	<b>20</b>
<b>4.2.</b> For receiving the printed issue of the journal by post (volume with the papers).	<b>30</b>	<b>30</b>

\* **Reduced fee for Young scientists in 35 years.**

### OVERNIGHT STAYS

[Hotel "Aqua Azur"\\*\\*\\*\\*](#)

Price per night: single room 40 Euro, double room - 55 Euro

### PAYMENTS

**Bank transfer** to the account of the Scientific and Technical Union of Mechanical Engineering at ProCredit Bank:

**IBAN: BG53 PRCB 9230 1449 8985 01, BIC: PRCBBSF**

**Beneficiary:** NTS Mashinostroene "Industry-4.0".

Please write in the payment document "MTM'20" and your registration number which you may find here: <http://www.mtmcongress.com> in the section "[Received abstracts and papers](#)"

**In cash** at the office of the Scientific and Technical Union of Mechanical Engineering: 1000 Sofia, 108 "G. S. Rakovski" str. Office №411.

All bank charges related to the transfer are borne by the participant.

## GENERAL INFORMATION

### THE VENUE

Registration, opening, plenary and sectional sessions: Hotel "Aqua Azur" \*\*\*\*.

Address: Varna, PO Box 9006, Resort "St. Konstantin and Elena ":

### ACCOMODATION

[Hotel "Aqua Azur" \\*\\*\\*\\*](#)

If arriving by car you may use the GPS coordinates of the hotel "Aqua Azur":

**N 43grad 14,277'**

**EO 28grad 00,828'**

### TIME TABLE

**09.09.2020 (Wednesday)** Registration of the participants.

**10.09.2020 (Thursday)** Opening ceremony 10:00. Plenary session. Congress sessions. Special Congress Sub-sections. Poster session. Welcome party.

**11.09.2020 (Friday)** 09:00 Congress sessions. Closing of the Congress.

**12.09.2020 (Saturday)** Departure of the participants.

## **PUBLIC TRANSPORT**

From the airport to the hotel "Aqua Azur": there is a direct bus line 409 (23<sup>th</sup> stop "Minyor").

From the bus station to the hotel "Aqua Azur": there is a direct bus line 409 (16-th stop "Minyor").

From the railway station to the hotel "Aqua Azur" - Bus 9 (the last stop in the center of the resort "St. St. Konstantin and Elena". The hotel "Aqua Azur" is 250 meters away.

## **REGISTRATION**

In the lobby of the hotel "Aqua Azur

**09.09.2020** from **16:00** to **20:00** and

**10.09.2020** from **08:00** to **10:00**.

## **ENTRY TO BULGARIA**

Visitors from the European Union coming to Bulgaria need an identity document.

Visitors from other countries require an entry visa.

Visitors are recommended to contact the Bulgarian Embassy (you can find them on: <http://www.mfa.bg/en/>) or Consulate in their own country for information on visa requirements. If an official letter of invitation is requested, please contact the Congress Secretariat in due time (before the registration deadline).

## **TIME**

Bulgaria is in the Eastern European Time Zone (GMT+2)

## **WEATHER**

**Air temperature:** on 14.09.2015 - 28,2 °C and on 18.09.2015 – 28,4 °C.

**Sea temperature:** on 14 and 18.09.2015 - 26 °C

Check the weather in real time here: <http://weather.bg/indexen.php>

## **CURRENCY**

The official currency is the lev (plural: leva).

1 euro = 1.95583 lev

All major credit cards (e.g. VISA, MasterCard, Eurocard) are usually accepted in Bulgaria

## **EMERGENCY SERVICES**

Uniform European telephone number for emergency situations: **112**

## **DEADLINES**

The Abstract of the paper and Author's Response <a href="#">Form "A"</a> or <a href="#">online registration</a> should be sent up to	<b>30.06.2020</b>
Confirmation of the abstract approval	<b>15.07.2020</b>
The Full text of the paper(s) and Participation <a href="#">Form "B"</a> or <a href="#">online registration</a> should be sent up to	<b>15.08.2020</b>
Payment of the Congress fees	<b>15.08.2020</b>
Announcement of the Congress program on the web page: <a href="http://www.mtmcongress.com/summer/1.xls">http://www.mtmcongress.com/summer/1.xls</a>	<b>01.09.2020</b>
The Organizing Committee will receive posters up to	<b>01.09.2020</b>
Registration of the participants From 16.00 till 20.00	<b>09.09.2020</b>
From 08.00 till 10.00	<b>10.09.2020</b>
Opening of the congress	<b>10.09.2020</b>
Departure of the participants	<b>12.09.2020</b>

## **CONGRESS SECRETARIATE**

Scientific-Technical Union of Mechanical Engineering

108 Rakovski str., 1000 Sofia, BULGARIA

tel./fax (+359 2) 986 22 40, tel. (+359 2) 987 72 90

Mobile: +359 888003582

[office@mtmcongress.com](mailto:office@mtmcongress.com), <http://mtmcongress.com>