



Universitatea  
Transilvania  
din Braşov  
FACULTATEA DE INGINERIE TEHNOLOGICĂ  
ŞI MANAGEMENT INDUSTRIAL



机械工程学院  
School of Mechanical Engineering

# CONFERENCE PROGRAM



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## The 5<sup>th</sup> International Conference on Computing and Solutions in Manufacturing Engineering

October 7 – 10, 2020  
Braşov - Romania

2020



The 5<sup>th</sup> International Conference on  
**Computing and Solutions  
in Manufacturing Engineering 2020**

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## CoSME'20 International Conference

### Program

#### **Welcome to CoSME'20 Platform**

Wednesday, October the 7<sup>th</sup>, 14:00-16:30 (Bucharest time GMT+2)

#### **Opening Ceremony**

Thursday, October the 8<sup>th</sup>, 10:00-10:30 (Bucharest time GMT+2)

#### **Plenary Session**

Thursday, October the 8<sup>th</sup>, 10:30-13:00 (Bucharest time GMT+2)

#### **Parallel sections**

Thursday, October the 8<sup>th</sup>, 14:00- 17:00 (Bucharest time GMT+2)

Friday, October the 9<sup>th</sup>, 9:00-13:00 & 14:00- 15:30 (Bucharest time GMT+2)

#### **AMTS Research Center presentation**

Friday, October the 9<sup>th</sup>, 15:30- 16:30 (Bucharest time GMT+2)

#### **Closing Ceremony**

Friday, October the 9<sup>th</sup>, 16:30-17:00 (Bucharest time GMT+2)

#### **Social program & Virtual tours**

Saturday, October the 10<sup>th</sup>, 10:00-13:00 (Bucharest time GMT+2)



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### Conference program\*

Time** Date	October the 7 <sup>th</sup>	October the 8 <sup>th</sup>	October the 9 <sup>th</sup>			October the 10 <sup>th</sup>	
9:00-10:00			S2	S3	S4		
10:00-10:30		Opening Ceremony					Social program, Virtual tours
10:30-11:00		Plenary session					
11:00-12:00							
12:00-13:00							
13:00-14:00	Break						
14:00-15:30	Welcome to CoSME'20 Platform	S1	S5	S7	S6		
15:30-16:30					AMTS Research Center presentation		
16:30-17:00					Closing Ceremony		

\*All the conference works will be held on-line

\*\*Bucharest time (GMT+2)



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## CoSME'20 - Parallel sections program

#	Section name	Number of papers	Date&Time (Bucharest time GMT+2)
S1	<b>CAD/CAE/ CAPP/CAM/CAx Techniques and Virtual Engineering</b>	<b>10</b>	<b>October the 8<sup>th</sup> 14:00-16:30</b>
S2	<b>Advanced Manufacturing Technologies</b>	<b>15</b>	<b>October the 9<sup>th</sup> 9:00-12:45</b>
S3	<b>Additive Manufacturing and Non- conventional Technologies</b>	<b>12</b>	<b>October the 9<sup>th</sup> 09:00-12:00</b>
S4	<b>Metal Cutting and Solutions for Tools and Devices in Manufacturing Engineering</b>	<b>9</b>	<b>October the 9<sup>th</sup> 09:00-11:15</b>
S5	<b>Industrial Management</b>	<b>9</b>	<b>October the 8<sup>th</sup> 14:00-16:15</b>
S6	<b>Quality Engineering and Reliability</b>	<b>6</b>	<b>October the 9<sup>th</sup> 14:00-15:30</b>
S7	<b>Other Related Topics</b>	<b>11</b>	<b>October the 8<sup>th</sup> 14:00-16:45</b>

## CoSME'20 International Conference

### Conference detailed program

#### Opening Ceremony

Thursday, October the 8<sup>th</sup>, 10:00-10:30 (Bucharest time GMT+2)

Chairman: Gheorghe OANCEA

#### Plenary Session

Thursday, October the 8<sup>th</sup>, 10:30-13:00 (Bucharest time GMT+2)

Chairmen: Gheorghe OANCEA and Yuhou WU

*Opening ceremony and Keynotes speeches will be accessed on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-omu-8uq-dbj>

#	Presentation Title and Keynote Speakers	Presentation time	Country
1	New models for time-dependent processes enable accurate generation of freeforms Dragoş AXINTE, Professor, The University of Nottingham, UK	10:30	UK
2	Reliability with big data: towards intelligent personalized systems healthcare Felician CÂMPEAN, Professor, University of Bradford, UK	11:00	UK
3	Computational design and applications Panagiotis KYRATSIS, Assoc. Prof., University of Western Macedonia, Greece	11:30	GR
4	Design, fabrication and service of all-ceramic ball bearings for extreme conditions applications Shongua LI, Professor, Shenyang Jianzhu University, China	12:00	CHN
5	Faculty of Technological Engineering and Industrial Management - more than 55 years of evolution Gheorghe OANCEA, Professor, Transilvania University of Braşov, Romania	12:30	RO



**S1 - CAD/CAE/ CAPP/CAM/CAx Techniques and Virtual Engineering**

**Thursday, October the 8<sup>th</sup>, 14:00-16:30 (Bucharest time GMT+2)**

Chairmen: Yu ZHANG, Eduard NIŢU, Sebastian Marian ZAHARIA

Secretary: Mădălina Ioana BLAJ

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-1jp-mc7-yj8>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	Overall stability analysis of combined boom with telescopic main boom and fixed flying jib S Liu, W Qin, X Han, and L Meng	14:00	CHN	12
2	The simplified analysis method of nonlinear buckling and displacement of latticed structure S Liu, W Yang, X Han and L Meng	14:15	CHN	13
3	Simulation research on pressure shock of load sensing system of large boom tower crane Y Fei, J Li and C Sun	14:30	CHN	26
4	Analysis of the influence on the hydraulic lifting circuit of the boom crane when the characteristics of the steel wire rope changes Y Fei, J Jiang , and C Sun	14:45	CHN	28

5	<p>Investigation of an axial hydrokinetic turbine with the CFD program FloSimulation</p> <p>K Tuzharov, S Iliev, V Vilag and J Vilag</p>	15:00	BG, RO	93
6	<p>CAD based design for the jewellery industry: A case study</p> <p>A Manavis, P Minaoglou, K Aidinli, N Efkolidis and P Kyratsis</p>	15:15	GR	99
7	<p>Computational design technologies for interior designers: a case study</p> <p>A Manavis, P Minaoglou, D Tzetzis, N Efkolidis and P Kyratsis</p>	15:30	GR	100
8	<p>Stress and vibration analysis of a drone</p> <p>M Urdea</p>	15:45	RO	3
9	<p>Progressive screw shaft manufacturing technology</p> <p>M Matejic, M V Dragoi, M Blagojevic, A C Filip and I Miletic</p>	16:00	SRB, RO	54
10	<p>Novel trend in case study of industrial robot programming and production system design using the virtual reality</p> <p>R Holubek, R Ružarovský, K Velíšek and M Janíček</p>	16:15	SK	7

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**S2 - Advanced Manufacturing Technologies**

**Friday, October the 9<sup>th</sup>, 9:00-12:45 (Bucharest time GMT+2)**

Chairmen: Zhe YUAN, Răzvan PĂCURAR, Alexandru FILIP

Secretary: Mihaela Rodica CLINCIU

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-h3i-tsy-b1z>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	Application of fractal theory in fault diagnosis of nonlinear mechanical equipment system: a review X L Hou and X Wang	9:00	CHN	14
2	Study on vibration characteristics of motorized spindle based on multi-physics fields K Zhang, Z N Wang, Z Wang, Q Y Wang and J Ma	9:15	CHN	17
3	Experimental research on dynamic thermal performance of silicon nitride all-ceramic ball bearings S H Li, Y H Wang, C Wei, Z N Wang and Z X Xia	9:30	CHN	19
4	Static and dynamic characteristics analysis of self-balancing motorized spindle Z Wang, W Z He, H M Zhou and S Y Du	9:45	CHN	24



5	<p><b>Making Industry 4.0 functionalities understandable based on the production of a model car</b></p> <p>S Roman and C Bunsen</p>	10:00	D	71
6	<p><b>Selecting an alternative to solve a problem from several available alternatives</b></p> <p>O Dodun, L Slătineanu, G Arcidiacono, M Coteață, G Nagiț and A Hrițuc</p>	10:15	RO, IT	39
7	<p><b>Voice frequency impact for voice control of collaborative robots</b></p> <p>M Janíček, R Holubek, R Ružarovský and K Velíšek</p>	10:30	SK	11
8	<p><b>Study on the application of CAM techniques on CNC lathes with Y axis and driven tools</b></p> <p>R E Breaz, S G Racz, C E Girjob and M Tera</p>	10:45	RO	86
9	<p><b>Robotized application of assembly and soldering – case study</b></p> <p>I Staretu</p>	11:00	RO	97
10	<p><b>Influence of process parameters on the AWJ cutting of the AL-EN AW 2017A (T4) aluminium alloy</b></p> <p>M C Radu, C Schnakovszky, B A Chirita, N C Tampu, V A Ciubotariu and E Herghelegiu</p>	11:15	RO	98

11	<p><b>Studies on structural MWCNT/epoxy nanocomposites for EMI shielding applications</b></p> <p>C Paun, C Obreja, F Comanescu, V Tucureanu, O Tutunaru, C Romanitan, O Ionescu, D E Gavrilă, V Manescu, V Stoica and G Paltanea</p>	11:30	RO	102
12	<p><b>Prediction of radial clearance based on bearing vibration using artificial neural network</b></p> <p>I Knežević, A Živković, M Rackov, Ž Kanović, A Buljević, M Bojanić Šejat and S Navalušić</p>	11:45	SRB	18
13	<p><b>Sustainable manufacturing systems – a simulation model</b></p> <p>A L Parv, B A Deaky and R Stasiak-Betlejewska</p>	12:00	RO, PL	68
14	<p><b>Study of input parameters influence on the surface quality at laser processing of Hardox 400 steel</b></p> <p>C C Girdu, M V Dragoi, M Mileşan, L A Mihail, L Cirtina and C Radulescu</p>	12:15	RO	56
15	<p><b>Fabrication and service of all-ceramic ball bearings for extreme conditions applications</b></p> <p>S Li, C Wei and Y Wang</p>	12:30	CHN	16

**S3 - Additive Manufacturing and Non-conventional Technologies**

**Friday, October the 9<sup>th</sup>, 9:00-13:00 (Bucharest time GMT+2)**

Chairmen: Chih-Chun CHENG, Nicolae Florin COFARU, Răzvan UDROIU

Secretary: Bogdan Alexandru DEAKY

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-ra0-v0e-io4>

#	Title and authors	Presentat ion time	Country	Remarks Paper ID
1	Parameters setting of selective laser melting machine D T Le and S L Chen	9:00	TW	50
2	The forming tool, primary start position and toolpath angle movement effect on the geometry accuracy "springback", part C K I Abass	9:15	IRQ	59
3	Fused deposition modelling process: a literature review M Blaj and G Oancea	9:30	RO	40
4	Designing of an original extruding system for 3D printing of parts made of plastic material in powder-state form R Păcurar, S Pascu, A Păcurar, D S Stan, E Teuţan, D I Băilă and A Sadeh	9:45	RO, IL	60
5	Research on the study of the dimensional precision of the parts obtained by additive manufacturing D C Anghel, A D Rizea	10:00	RO	61

6	<p><b>Study of the deviation of shape for the parts obtained by additive manufacturing</b></p> <p>A D Rizea, D C Anghel and D M Iordache</p>	10:15	RO	62
7	<p><b>The heat treatment influence on microstructure and mechanical properties of TiAl6V4 parts manufactured by SLM</b></p> <p>C Lancea, S M Zaharia, M A Pop and G R Buican</p>	10:30	RO	77
8	<p><b>Generation of precessional gear teeth by plastic deformation</b></p> <p>N Trifan, R Ciobanu and O Ciobanu</p>	10:45	MD	30
9	<p><b>Study upon the kinematic simulation of the incremental forming carried-on using a serial industrial robot</b></p> <p>R E Breaz, S G Racz, C E Girjob and M Tera</p>	11:00	RO	87
10	<p><b>Robot-based incremental sheet forming – the tool path planning</b></p> <p>A Bârsan, M O Popp, G P Rusu and A I Maroşan</p>	11:15	RO	83
11	<p><b>Comparison between aluminum alloys behavior in incremental sheet metal forming process of frustum pyramid shaped parts</b></p> <p>G P Rusu, A Bârsan, M O Popp and A Maroşan</p>	11:30	RO	85
12	<p><b>Influence of DC05 deep drawing steel real material properties on numerical simulation of incremental forming process</b></p> <p>D Nasulea and G Oancea</p>	11:45	RO	76

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**S4 - Metal Cutting and Solutions for Tools and Devices in Manufacturing Engineering**

**Friday, October the 9<sup>th</sup>, 9:00-11:15 (Bucharest time GMT+2)**

Chairmen: Panagiotis KYRATSIS, Laurențiu SLĂTINEANU, Mircea-Viorel DRĂGOI

Secretary: Marius Daniel NĂSULEA

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-cdc-8o1-bqf>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	On-line linear guideway monitoring using laser mouse sensor W N Cheng, C C Cheng, C M Tsai, B C Chang, W R Chen and T F Chiang	9:00	TW	65
2	Study of milling machining roughness prediction based on cutting force Y C Kao, S J Chen, T K Vi, G H Feng and S Y Tsai	9:15	TW	53
3	The modelling of detached chip area at square shafts machining with rack tools M Bordeanu, G Frumuşanu and N Oancea	9:30	RO	5
4	Comparison of the roughness of concave cylindrical surfaces machined with spherical milling cutters and toroidal milling cutters A Osan, M Banica, L Butnar and V Nasui	9:45	RO	48

5	A brief review of numerical simulation in process machining C I Malea, E L Nitu and M D Iordache	10:00	RO	72
6	The optimization of cutting parameters at turning, using electrical current at cutting, in order to increase the durability of the cutting tool R Daicu and V Diţu	10:15	RO	90
7	The determination of the relation between the drill diameter and the correction coefficient of the relative thickness of the drill core when calculating the axial force R Daicu and V Diţu	10:30	RO	91
8	Some aspects regarding planetary precessional transmissions dynamics I Bostan, V Dulgheru and I Malcoci	10:45	MD	6
9	Multi-operative modular tool for cutting and mechanical hardening D M Rosca and M Folea	11:00	RO	47



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**S5 - Industrial Management**

**Thursday, October the 8<sup>th</sup>, 14:00- 16:15 (Bucharest time GMT+2)**

Chairmen: Liting FAN, Oana DODUN, Luminița Aurica PÂRV

Secretary: Raluca DAICU

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-gzc-zjf-dzh>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	How can enterprises survive in Romania's present economic environment? A M Ionescu and F A Sârbu	14:00	RO	4
2	Key performance indicators for operational performance assessment in flexible packaging industry C Cristea, M Cristea and D Ştet	14:15	RO	20
3	Avoiding workplace accidents in the industry by adapting training methods to the new technologies P I Mureşan, I Miloşan, T Machedon-Pisu , D Senchetru and A N Reit	14:30	RO	35
4	Using critical path method for a new project scheduling - the case of a new product launch in production F S Blaga, A Pop, V Hule, A Karczis and D Buzdugan	14:45	RO	38

5	<p>The methodology of economic recovery of commercial companies in crisis conditions</p> <p>O Panazan, C Gheorghe and G Calefariu</p>	15:00	RO	44
6	<p>Management of the human resources correlated to the sustainable road construction technologies</p> <p>C M Niţu, D Căpăţină, M Iliescu and C Gasparotti</p>	15:15	RO	57
7	<p>Optimization of industrial management processes</p> <p>C Mărgineanu and D Lixăndroi</p>	15:30	RO	70
8	<p>Analysis of scheduling activities in the processes of improving surface characteristics of parts</p> <p>M M Roşu, L Vlădăreanu and M Iliescu</p>	15:45	RO	92
9	<p>Study on the assessment and reduction of ergonomic risks in the construction field</p> <p>A Ispăsoiu, I Miloşan, D Senchetru, T Machedon-Pisu, C Meiţă and A M F Ispăsoiu</p>	16:00	RO,N	31

## S6 - Quality Engineering and Reliability

Friday, October the 9<sup>th</sup>, 14:00-15:30 (Bucharest time GMT+2)

Chairmen: Christopf BUNSEN, Gabriel RACZ, Ramona CLINCIU,

Secretary: Flavia FECHETE

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-sjo-sya-nka>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	Performance diagnosis of the drive unit for high speed motorized spindle based on hidden state mapping model Z W Jia, L T Fan, C X Zhu, Z P Si and J Z Liu	14:00	CHN	21
2	Research on reliable running time of motorized spindle based on health indicator Z Si, L Fan, Z Jia and J Liu	14:15	CHN	45
3	A comparative assessment of reliability indicators and parameters of the bearings using different estimation methods C O Morariu and S M Zaharia	14:30	RO	1
4	Computer program for single sampling plans by variables with known lot standard deviation N Eftimie	14:45	RO	15



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5	Estimating the warranty returns and proving root causes using statistical analysis of archived parameters measurements for an automotive mechatronic device I C Braga, R Udroi, A Nedelcu	15:00	RO	51
6	Continuous improvement of the quality management system within an automation company in Romania M V Zerbes, L G Popescu, M Olteanu and A Olteanu	15:15	RO	67

**S7 - Other related topics**

**Thursday, October the 8<sup>th</sup>, 14:00-16:45 (Bucharest time GMT+2)**

Chairmen: Milan RACKOV, Florin Sandu BLAGA, Cristin Olimpiu MORARIU

Secretary: Nicolae EFTIMIE

*Papers will be presented on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-d5z-ro9-bsm>

#	Title and authors	Presentation time	Country	Remarks Paper ID
1	Moving object detection of assembly components based on improved background subtraction algorithm K Zhang, S Tong, H Shi, G Yue and J Zhao	14:00	CHN	22
2	Career transition through four personal drives – A cross-sectional analysis amongst healthcare, education and real-estate employees as a novel tactic in human resource development. H Parameswaran	14:15	UAE	103
3	Educational resource management by using virtual platform C Gavrus, C Chivu and C I Chivu	14:30	RO	9
4	Mobile emergency notification apps: current state, barriers and future potential R Repanovici and A Nedelcu	14:45	RO	27

5	Automatic generation of documents and reports for educational process C I Chivu and C Chivu	15:00	RO	32
6	An approach regarding some performances of a FESTO pneumatic muscle actuator I M Petre	15:15	RO	33
7	Teaching online during the COVID - 19 crisis. Initial thoughts B A Deaky, L Parv, V A Briciu	15:30	RO	63
8	Aspects on applying experiential learning theory in engineering education. Case study - projecting prismatic parts R Clinciu and M R Clinciu	15:45	RO	73
9	Current perspectives on innovative methods used in teaching technical drawing M R Clinciu and R Clinciu	16:00	RO	74
10	A review on biomechanics of the hallux valgus pathology and its surgical treatments N F Cofaru and A H Brănescu	16:15	RO	95
11	Study of the stator geometry for a Moineau pump N Baroiu, G A Costin, G R Frumuşanu, V G Teodor and N Oancea	16:30	RO	75





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**AMTS Research Center presentation**

**Friday, October the 9<sup>th</sup>, 15:30- 16:30 (Bucharest time GMT+2)**

Alexandru Cătălin FILIP, Transilvania University of Braşov, Romania

*Presentation will be accessed on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-omu-8uq-dbj>

**Closing Ceremony**

**Friday, October the 9<sup>th</sup>, 16:30-17:00 (Bucharest time GMT+2)**

Chairmen: Gheorghe OANCEA and Yuhou WU

*Closing ceremony will be accessed on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-omu-8uq-dbj>

**Social program & Virtual tours**

**Saturday, October the 10<sup>th</sup>, 10:00-13:00 (Bucharest time GMT+2)**

*All the activities will be accessed on-line in the virtual room*

<https://conf.bbb.unitbv.ro/bog-omu-8uq-dbj>