

**THE COMMITTEE ON MECHANICS
OF THE POLISH ACADEMY OF SCIENCES**

RZESZÓW UNIVERSITY OF TECHNOLOGY

**INSTITUTE OF FUNDAMENTAL TECHNOLOGICAL
RESEARCH, POLISH ACADEMY OF SCIENCES**

**6TH CONFERENCE ON NANO-
AND MICROMECHANICS**

CONFERENCE PROGRAM

RZESZÓW, POLAND, 3-5 JULY 2019

SCIENTIFIC COMMITTEE

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- Prof. Mihail N. Popescu**, Max Planck Institute for Intelligent Systems, Stuttgart, Germany
- Prof. Gwidon Szefer**, Cracow University of Technology, Poland
- Prof. Alexander L. Yarin**, University of Illinois at Chicago, USA

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Publisher: Publishing House of Rzeszów University of Technology
12 Powstańców Warszawy Ave., 35-959 Rzeszów
<http://oficyna.prz.edu.pl>

Conference Venue

The CNM2019 will take place in the beautiful city of Rzeszów in Building V (Regional Centre for Didactics and Conferences) of the Rzeszów University of Technology (RUT) which is located near the city centre.



Rzeszów University of Technology

The Rzeszów University of Technology is the largest polytechnic in the region. On the 1st of October 1974, by government decree, the school was named the Ignacy Łukasiewicz Rzeszów University of Technology (<https://w.prz.edu.pl/en/about/university-traditions>). Since 1951 it has educated 57 952 graduates, including 593 pilots. It is organized in 6 faculties covering almost all fields of technology and employs around 900 of academic staff. The number of students is approx. 15,000 including bachelor, master and doctoral students (www.prz.edu.pl/en). The Faculty of Mechanical Engineering and Aeronautics, as the only one in Poland, has been training civil aviation pilots since 1976. Their training meets European requirements for receiving an airline pilot licence (ATPL), and is conducted at Jasionka (<https://okl.prz.edu.pl/>) and Bezmiechowa (<http://aos-bezmiechowa.pl/>).

Rzeszów

Rzeszów is the capital of the Subcarpathian Province, it constitutes the biggest industrial, academic, cultural and recreational centre of south-eastern Poland https://www.youtube.com/watch?v=0IO_UWtASE8. Its population is about 220 thousand residents. The city is located on both sides of the Wisłok River in the centre of the Sandomierska Valley. The majority of tourist attractions are within walking distance from the centre. The city has the most number of students per inhabitants in the European Union (for every 1000 inhabitants there are 353 students). For more details see <https://en.wikipedia.org/wiki/Rzesz%C3%B3w>.



Conference Information

Venue

Address: Rzeszów University of Technology, Building V
al. Powstańców Warszawy 12
35-959 Rzeszów
GPS: 50° 1'5"N, 21° 59'24"E



Secretariat Timetable (RUT, V building - main hall)

Wednesday, July 3, 8:30 a.m. to 6 p.m.
Thursday, July 4, 8:30 a.m. to 5:30 p.m.
Friday, July 5, 8:30 a.m. to 2 p.m.

Papers Presentation

Oral Presentation – (RUT, V building - Room V2)

Invited Lecture (IL): The maximum allowed time for presentation is 40 minutes with an additional 5 minutes for short discussion.

Oral presentation (OP): The maximum allowed time for presentation is 12 minutes with additional 3 minutes for short discussion.

Each room has a PC for your disposal. It is advised to copy your presentation files (*.pdf, *.pptx) during the coffee break prior to the session.

Poster presentation (RUT, V building - main hall - first floor)

The poster size should not exceed 120 cm height and 94 cm width. Posters have to be placed at the first floor of main hall of V building on the boards at least on Thursday, July 4. (9 a.m. to 2 p.m.) and have to be taken down at least on Friday, July 5, 2019. Your poster place will be identified by a label posted on the corresponding board.

Poster presentations will be displayed during the Poster Session on Thursday, July 4, from 4:30 p.m. to 5:30 p.m.

This will give posters great exposure among the participants of the conference, and will allow time for interactions between poster presenters and conference attendees.

Internet Access

Wireless internet access will be available in the premises of the conference venue.

Lunch & Coffee Break

Lunch will be served on RUT in the V building – Room V17. Your identification Badge is required for Lunch and coffee breaks.

Social Events

Wednesday, July 3, 2019

10:00-10:15 **Opening Ceremony** (RUT, V building - Room V2)

18:00-19:00 **Get-together party** (RUT, V building - Room V17)

19:00-19:45 **Połoniny Ensemble Concert** (RUT, V building - Room V1)

20:00-22:00 **Rzeszów Tour** (start RUT, V building - main hall)

Thursday, July 4, 2019

19.00-22.00 **Conference dinner** (Hotel Bristol Restaurant, Kopernika 12)

Friday, July 5, 2019

12.00-12.15 **Closing Ceremony** (RUT, V building - Room V2)

Identification Badge is required to Social Events.

Identification Badge

Participants are reminded to wear their named badges at all time while in the conference area or conference events. Access will be prohibited to the sessions, coffee breaks and social events if a named badge is not visible.

Scientific Program

Thematic scope of the session

Hours	Wednesday, July 3, 2019	Thursday, July 4, 2019	Friday, July 5, 2019
9		7	11
10	1	8	
11	2	9	12
12			
13			
14	3	10	
15	4		
16	5	Poster Session	
17	6		
18			
19			
20			

1, 2, 3, 7, 8, 11 - Plenary lectures

4, 10 - Material science, nanomaterials, micromaterials and engineering

6, 9 - Microfluidics and nanofluidics

5 - Nanofibers, nanotubes and nanoparticles

12 - Computational methods

CNM 2019, Conference Schedule

Wednesday 03.07.2019		Thursday 04.07.2019		Friday 05.07.2019	
8:30-10:00	Registration				
10:00-10:15	Opening Ceremony	9:00-10:30	Session #7: Invited Lectures	9:00-10:30	Session #11: Invited Lectures
10:15-11:00	Session #1: Invited Lecture	10:30-11:15	Coffee break	10:30-11:15	Coffee break
11:00-11:30	Coffee break	11:15-12:00	Session #8: Invited Lecture	11:15-12:00	Session #12: Computational methods
11:30-12:15	Session #2: Invited Lecture	12:00-12:30	Session #9: Microfluidics and nanofluidics	12:00-12:15	Closing Ceremony
12:15-14:00	Lunch	12:30-14:00	Lunch	12:15-14:00	Lunch
14:00-14:45	Session #3: Invited Lecture	14:00-15:15	Session #10: Material science, nanomaterials, micromaterials and engineering		
14:45-15:30	Session #4: Material science, nanomaterials, micromaterials and engineering	15:15-16:00	Coffee break		
15:30-16:15	Coffee break				
16:15-17:45	Session #5: Nanofibers, nanotubes and nanoparticles	16:00-17:00	Poster Session		
	Session #6: Microfluidics and nanofluidics				
18:00-19:00	Get-together party (RUT, V building, V17)				
19:00-19:45	Połoniny Ensemble Concert (RUT, V building, V1)	19:00-22:00	Conference dinner (Hotel Bristol Restaurant Kopernika 12)		
20:00-22:00	Rzeszów Tour				

Program overview

Wednesday, July 3, 2019		
8:30-10:00		Registration
10:00-10:15		Opening Ceremony
10:15-11:00	Session #1 Invited Lecture Chair: T. Burczyński	<i>Application of nanomaterials in biomedicine from the mechanical properties point of view</i> - M. Giersig
11:00-11:30		Coffee break
11:30-12:15	Session #2 Invited Lecture Chair: T. Kowalewski	<i>Piezoelectric scaffolds - on the way to effective cellular mechanotransduction</i> - P. Sajkiewicz, A. Zaszczyńska
12:15-14:00		Lunch
14:00-14:45	Session #3 Invited Lecture Chair: S. Jakiela	<i>Self-healing nano-textured vascular engineering materials</i> - A.L. Yarin
14:45-15:30	Session #4 Material science, nanomaterials, micromaterials and engineering Chair: S. Jakiela	<i>Optimization of 2D materials based on Molybdenum</i> - T. Burczyński
		<i>Electrical and mechanical properties probing of graphene nano-electro-mechanical-systems</i> - K. Gajewski, T. Gotszalk et al.
		<i>Inertial Microfluidics</i> - T. Kowalewski, S. Pawłowska, F. Pierini
15:30-16:15		Coffee break
16:15-17:45	Session #5 Nanofibers, nanotubes and nanoparticles Chair: L. De Sio	<i>Towards modeling of nano-, micro-droplets coalescence</i> - T. Waclawczyk
		<i>Mechanical and nanotribological properties of N⁺ ion irradiated vertically aligned carbon nanotube arrays</i> - D. Jarząbek
		<i>The role of Ni3Al catalyst on the formation of methanol decomposition products</i> - P. Ziółkowski, P. Jóźwik, Z. Bojar, J. Badur
	Session #6 Microfluidics and nanofluidics Chair: L. De Sio	<i>Smoluchowski jump and an advanced thermal-FSI</i> - J. Badur, P. Ziółkowski, T. Kowalczyk, P. Ziółkowski, M. Stajnke, M. Bryk, B. Kraszewski
		<i>Effective properties of random composites and self-consistent approaches</i> - V. Mityushev
		<i>Generation of water flow vortices in nanoscale confinements</i> - A. Kucaba-Piętal, Adrian Kordos
18:00-19:00		Get-together party (RUT, V building, V17)
19:00-19:45		Poloniny Ensemble Concert (RUT, V building, V1)
20:00-22:00		Rzeszów Tour (start RUT, V building - main hall)

Thursday, July 4, 2019		
9.00-10.30	Session #7 Invited Lectures Chair: A. Kucaba-Piętal	<i>Multiple pathways of helix folding from kinetic coarse grained models</i> - K. Kuczera
		<i>Understanding of living cell-nanofiber matrices interactions</i> - K. Kogermann
10.30-11.15		Coffee break
11.15-12.00	Session #8 Invited Lecture Chair: A.L. Yarin	<i>Effective interactions between chemically active particles and interfaces</i> - M. N. Popescu
12.00-12.30	Session #9 Microfluidics and nanofluidics Chair: A.L. Yarin	<i>Asynchronous sequential logic systems in droplet microfluidic devices</i> - D. Zaremba, P. Korczyk
		<i>Formation of droplets in microfluidic confinement</i> - P. Korczyk, V. van Steijn, S. Blonski, D. Zaremba, D. Beattie, P. Garstecki
12.30-14.00		Lunch
14.00-15.15	Session #10 Material science, nanomaterials, micromaterials and engineering Chair: K. Kogermann	<i>Analysis of defects in graphene and carbon nanotubes by the atomic scale finite element method</i> - D. Jasińska
		<i>Influence of protective Ni coating on SiC particles on tribological properties of coelectrodeposited Ni-SiC composite coating</i> - P. Jencyk
		<i>Manufacturing and magnetic properties of Fe_xCo_{1-x} wire-like nanoalloys</i> - M. Krajewski, M. Tokarczyk, A. Witecka, S. Lewińska, A. Ślawska-Waniewska, A. Mafolepsy, Sz-Chian Liou, Wen-An Chiou
		<i>A novel method of fabrication of metal probes for atomic force microscopes</i> - M. Milczarek, D. Jarząbek
		<i>Automated intravascular vessels evaluation</i> - J. Traciak, M. Dobrolińska, S. Stagraczyński
15.15-16.00		Coffee break
16.00-17.00		Poster Session
		1. J. Bytnar, A. Kucaba-Piętal <i>Comparison of neighbour-list algorithms on molecular dynamics simulations</i>
		2. O. Çavdar, M. Jarek, A. Malankowska, A. Zaleska-Medynska <i>Preparation, optical properties and photocatalytic activity of CuInS₂ Quantum Dots for H₂ generation</i>
		3. A. Czerniecka-Kubicka, W. Frącz, A. Szyszkowska, I. Zarzyka, M. Pyda, Ł. Byczyński <i>Influence of the linear polyurethane additive on crystallization behavior, thermal and mechanical properties of poly-3-hydroxybutyrate nanocomposites with nanobent</i>
4. A. Kaczmarek <i>Functionalization of carbon nanodots in viscous fluids with using laser ablation method</i>		

16.00-17.00		<p style="text-align: center;">Poster Session</p> <p>5. <u>M. Kmiotek</u>, A. Kucaba-Piętal <i>Influence of flexibility of obstacle on the flow and heat transfer in microchannels</i></p> <p>6. <u>Ł. Kolek</u>, K. Dychtoń, M. Jasiurkowska-Delaporte, E. Juszyńska-Gałązka, T. Rozwadowski, J. Sieniawski <i>Kinetics of cold crystallization of antiferroelectric liquid crystals studied by calorimetric and dielectric spectroscopy methods</i></p> <p>7. <u>A. Kordos</u>, A. Kucaba-Piętal <i>Analyte transport in chromatography columns – molecular dynamics study</i></p> <p>8. <u>B. Kościelniak</u>, B. Chmiela, M. Sozańska, J. Sieniawski <i>Effect of high temperature oxidation on morphology changes of γ phase in IN 740 superalloy</i></p> <p>9. <u>T. Kowalczyk</u> <i>Investigation of the in vivo behavior of membranes made of electrospun micro- and nanofibers implanted on an animal model</i></p> <p>10. <u>T. Kurniawan</u>, P. Korczyk <i>Transitional regime of droplet generation in a microfluidic flow-focusing device</i></p> <p>11. D. Kwiatkowski, D. Zaremba, <u>D. Charniak</u>, P. Korczyk <i>Microfluidic device for antibiotics screening</i></p> <p>12. <u>M. Miodyńska</u>, J. Zwara, B. Bajorowicz, A. Zaleska-Medynska <i>Three-dimensional structures of CeO₂ for the photocatalytic reaction of hydrogen generation</i></p> <p>13. <u>M. Zagula-Yavorska</u>, J. Sieniawski <i>The influence of the hafnium nanoparticles in the rhodium modified aluminide coatings on the oxidation behaviour of coated nickel based superalloy</i></p> <p>14. <u>A. Zaszczyńska</u>, P. Sajkiewicz, A. Gradys, O. Urbanek, D. Kołbuk <i>Influence of process-material conditions on the phase composition, architecture and biological properties of electrospun polyvinylidene fluoride fibers</i></p> <p>15. K. Zembrzycki, S. Pawłowska, T.A. Kowalewski, F. Pierini <i>Combination of atomic force microscopy and optical tweezers as a unique technique for femtonewton analysis of interactions of micro- and nano-objects</i></p> <p>16. <u>J. Zwara</u> <i>The influence of the amount of Er and Yb on the photocatalytic properties of the modified SrSnO₃ semiconductor</i></p>
	19.00-22.00	

Friday, July 5, 2019		
9.00-10.30	Session #11 Invited Lectures Chair: J. Badur	<i>Measurement of the hydrodynamic resistance of microdroplets as an indicator of biological and immunological reactions</i> - S. Jakiela
		<i>Thermo-plasmonic assisted biomedical applications</i> - L. De Sio
10.30-11.15		Coffee break
11.15-12.00	Session #12 Computational methods Chair: P. Korczyk	<i>Effect of slip boundary on stability of low Reynolds number flow</i> - N. Yadav, S. Gepner, J. Szumbarski
		<i>Numerical analysis of a new model of fast calcium waves</i> - S. Białecki, B. Kaźmierczak, Z. Peradzyński
		<i>On speeding up nano- and micromechanical calculations for systems with long-range potentials</i> - L. Rybarska-Rusinek, E. Rejwer, A. Linkov
12.00-12.15		Closing Ceremony
12.15-14.00		Lunch

Papers

Abstract authors are invited to publish their presented papers after the conference in the following journals:

Bulletin of the Polish Academy of Sciences (IF = 1.277)
https://www.editorialsystem.com/bpasts/journal/call_for_papers/
 (additional payment rules on the website of Bulletin)

Archives of Mechanics (IF = 0.923)
<http://am.ippt.gov.pl/index.php/am>

The deadline for the submission is: September 30th, 2019. All the submitted papers will undergo the usual reviewing procedure.

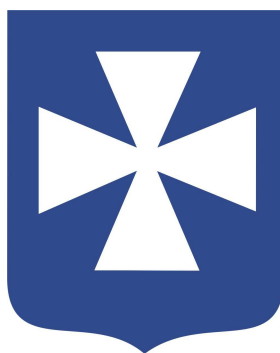
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Władysław ORTYL**



*The project is co-funded by the Polish National Agency
for Academic Exchange*