



Joint Symposium of Taiwan-Russia Research Cooperation

Development of functional materials of different application

October 23-24, 2018

Tomsk, Russia

Symposium Program

ORGANIZERS

Ministry of Science and Technology, Taiwan

Siberian Branch of the Russian Academy of Sciences

Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of Sciences, Tomsk, Russia

Tomsk Polytechnic University, Tomsk, Russia

Tomsk State University, Tomsk, Russia

Tomsk – 2018

October 23, 2018 (Tuesday)

10:00 – 10:10 Opening ceremony

Co-Chairmen: **Prof. Panin S.V., Prof. Sinn-wen Chen**

10:10 – 10:35 **Fomin Vasily Mikhailovich**, Filippov A.A. (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS)

Determination of the mechanical characteristics of nanoparticles

10:35 – 11:00 **Panin Victor Evgenievich**, Egorushkin V.E. (Institute of Strength Physics and Materials Science of Siberian SB RAS)

Mesoscopic structural states at the nanoscale as the basis of mechanical behaviour of multiscale hierarchically organized solids

11:00 – 11:25 **Sinn-Wen Chen** (National Tsing Hua University)

Promising thermoelectric materials and their related phase diagram

11:25 – 11:50 **Chumlyakov Yuriy Ivanovich** (V.D. Kuznetsov Siberian Physicotechnical Institute at Tomsk State University)

Investigation of thermoelastic γ - α' - martensitic transformation in FeNiCoAlX (X=Ta, Nb, Ti) high strength crystals

11:50 – 12:10 Coffee break

12:10 – 12:35 **Bing-Joe Hwang** (National Taiwan University of Science and Technology)
Advanced materials for electrochemical energy conversion and storage Systems

12:35 – 13:00 **Lebiga Vadim Aksentievich** (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS)

New Materials and Technologies on Their Basis as One of the Priority Topics in SB RAS-MOST Collaboration

13:00 – 13:25 **Panin Sergey Viktorovich**, Kornienko L.A., Lyukshin B.A., Bochkareva S.A., Aleksenko V.O., Buslovich D.G., Dontsov Yu.V. (Institute of Strength Physics and Materials Science of Siberian SB RAS)

Advanced antifrictional composites with hierarchical structure based on prospect thermoplastic matrices. Computer aided design, applications and additive manufacturing potential

13:25 – 15:00 Lunch

15:00 – 15:25 **Hsi-Sheng Teng** (National Cheng-Kung University)

Graphene oxide quantum dots for photocatalysis and bioimaging

15:25 – 15:50 **Panin Alexey Viktorovich** (Institute of Strength Physics and Materials Science of Siberian SB RAS)

The increase in mechanical and tribological properties of titanium Ti-6Al-4V alloy produced by casting and EBM processes

15:50 – 16:15 **Kireeva Irina Vasilevna** (V.D. Kuznetsov Siberian Physicotechnical Institute at Tomsk State University)

The orientation dependence of mechanical behavior in single crystals of high-entropy alloys

16:15 – 16:40 **Zharkova Galina Mikhailovna**, Pod'yacheva O.Yu., Matus E.V., Suboch A.N. (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS)

Formation of polymer-dispersed liquid crystal composites doped with carbon nanotubes and investigation of their optical properties

- 16:40 – 17:05 **Kosova Nina Vasil'evna** (Institute of Solid State Chemistry and Mechanochemistry SB RAS)
Advanced electrode materials for lithium- and sodium-ion batteries
- 17:05 – 17:30 **Shugurov Artur Rubinovich** (Institute of Strength Physics and Materials Science of Siberian SB RAS)
Increasing of wear resistance of Ti-Al-N coatings on soft substrate via multilayer architecture
- 17:30 – 17:55 **Eremeev Sergey Vladimirovich** (Institute of Strength Physics and Materials Science of Siberian SB RAS)
Topological insulator/magnetic insulator heterostructures and interfaces

October 24, 2018 (Wednesday)

Co-Chairmen: **Prof. Panin A.V., Prof. Bing-Joe Hwang**

- 10:00 – 10:25 **Shilko Evgenii Victorovich**, Psakhie S.G. (Institute of Strength Physics and Materials Science of Siberian SB RAS)
Theoretical study of the conditions and the mechanism of shear crack acceleration towards the longitudinal wave velocity
- 10:25 – 10:50 **Shih-Kang Lin** (National Cheng-Kung University)
Computational thermodynamics-assisted design of multi-principle element alloys
- 10:50 – 11:15 **Lozovoy Kirill Alexandrovich** (Tomsk State University)
Quantum Dots Formation in Group IV Elements systems
- 11:15 – 11:40 **Panchenko Elena Yrievna** (V.D. Kuznetsov Siberian Physicotechnical Institute at Tomsk State University)
Design of ferromagnetic single crystals with two-way shape memory effect based on low-temperature stress-induced martensite ageing
- 11:40 – 12:00** Coffee break
- 12:00 – 12:25 **Hung-Wei Yen** (National Taiwan University)
Toward the High-Entropy Steels: Design and Properties in Advanced Steels
- 12:25 – 12:50 Fomin V.M., Klinkov S.V., Kosarev V.F., **Ryashin Nikolay Sergeevich**, Shikalov V.S. (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS)
Influence of matrix material on the formation and properties of cermet cold gas-dynamic coatings
- 12:50 – 13:15 **Timofeeva Ekaterina Evgenievna** (V.D. Kuznetsov Siberian Physicotechnical Institute at Tomsk State University)
Design of the high-strength single crystals based on TiNiHf(Pd) alloys with high-temperature superelasticity
- 13:15 – 15:00** Lunch
- 15:00 – 18:00** City tour