



GSAM2017 Workshop Program



September 2 (Saturday) Welcome Reception

17:00 - 19:00

at Dai-hakata Bldg. Room 1109, <http://irc-gsam.kyushu-u.ac.jp/gsam/gsam2017/site.html>

September 3 (Sunday) Opening Words

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| 9:00 - 9:15 | Zenji Horita | Kyushu University, Japan | Welcome words and general instruction Introduction of IRC-GSAM Center |
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September 3 (Sunday) Session (1) Chairperson: Kaveh Edalati (Kyushu University, Japan)

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|---------------|------------------------|--|--|
| 9:15 - 9:40 | Tatsumi Ishihara | Kyushu University, Japan | <Invited> Strain effects on oxide ion and hole conduction in metal dispersed Pr_2NiO_4 for oxygen separation membrane |
| 9:40 - 10:05 | Vladimir D. Blank | Technological Institute for Superhard and Novel Carbon Materials, Russia | <Invited> Studies of shear deformation under pressure (a pressure-shear technique): diamond anvils |
| 10:05 - 10:30 | Norimasa Nishiyama | Tokyo Institute of Technology, Japan | <Invited> A very tough hardest oxide: nanopolycrystalline SiO_2 stishovite |
| 10:30 - 10:50 | Hadi Razavi-Kosroshahi | Nagoya Institute of Technology, Japan | High-pressure phases of metal oxides as new generation of photocatalysts |
| 10:50 - 11:10 | <Coffee Break> | | |

September 3 (Sunday) Session (2) Chairperson: Marco J. Starink (University of Southampton, U.K.)

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| 11:10 - 11:35 | Valery Levitas | Iowa State University, U.S.A. | <Invited> Plastic strain induced phase transformations in rotational diamond cell |
| 11:35 - 11:55 | Masaki Mito | Kyushu Institute of Technology, Japan | Hydrostatic pressure effects on superconducting transition of bulk nanostructured niobium prepared by high-pressure torsion |
| 11:55 - 12:15 | Makoto Arita | Kyushu University, Japan | In-situ electrical resistance measurement of pure titanium during processing by high-pressure sliding |
| 12:15 - 12:35 | Yoshifumi Ikoma | Kyushu University, Japan | TEM observations of Ge processed by high-pressure torsion |
| 12:35 - 12:50 | Kazuki Kumano | Kyushu University, Japan | Thermal effects on the formations of Si and Ge metastable phases during HPT processing |
| 12:50 - 14:30 | Workshop Photo (1) <Lunch> | | |

September 3 (Sunday) Session (3) Chairperson: Valery Levitas (Iowa State University, U.S.A.)

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| 14:30 - 14:55 | Walter J. Botta | Universidade Federal de São Carlos, Brazil | <Invited> Severe plastic deformation of Mg, TiFe and Mg-based composites for hydrogen storage applications |
| 14:55 - 15:20 | Ricardo Floriano | Universidade Estadual de Campinas - UNICAMP, Brazil | <Invited> Low temperature rolling of AZ91 alloy for hydrogen storage |
| 15:20 - 15:40 | Kaveh Edalati | Kyushu University, Japan | Ultra-severe plastic deformation to achieve room-temperature hydrogen storage and superplasticity |
| 15:40 - 16:00 | Arnaud Macadre | Kyushu University, Japan | Evolution of plastic zone size at a crack tip with ultra-fine grains in metastable austenite |
| 16:00 - 16:25 | <Coffee Break> | | |

September 3 (Sunday) Session (4) Chairperson: Walter J. Botta (Universidade Federal de São Carlos, Brazil)

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| 16:25 - 16:50 | Nariman A. Enikeev | Saint Petersburg State University, Russia | <Invited> Resistance of SPD-produced austenite ultrafine-grained steels to neutron |
| 16:50 - 17:10 | Elena A. Korznikova | Institute for metals superplasticity problems of Russian Academy of Sciences, Russia | Discrete breathers in metals and alloys |
| 17:10 - 17:30 | Jorge M. Cubero-Sesin | Instituto Tecnológico de Costa Rica, Costa Rica | Aging behavior and electrical conductivity of Al-(Fe, Cr, Mn) alloys processed by high-pressure torsion |
| 17:30 - 17:50 | Maki Ashida | Tokyo Medical and Dental University, Japan | Strengthening of Ti-6Al-7Nb alloy with bimodal microstructure by high-pressure torsion |

| September 4 (Monday) Session (5) Chairperson: Christine Borchers (Georg-August-University Goettingen, Germany) | | | |
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| 9:00 - 9:25 | Ruslan Z. Valiev | Ufa State Aviation Technical University, Russia | <Invited> Advances in paradox studies of strength and ductility of ultrafine-grained materials |
| 9:25 - 9:50 | Yuntian T. Zhu | North Carolina State University, U.S.A. | <Invited> Perspective on heterogeneous materials |
| 9:50 - 10:15 | Kei Ameyama | Ritsumeikan University, Japan | <Invited> Stress concentration and dispersion effects in harmonic structure materials |
| 10:15 - 10:40 | Alexander Zhilyaev | Fundació CTM Centre Tecnològic, Spain | <Invited> Critical revision of experimental data on simultaneous increase of strength and ductility in SPD pure metals |
| 10:40 - 11:00 | Ivan Smirnov | Saint Petersburg University, Russia | Fracture toughness and impact toughness of UFG titanium grade 4 |
| 11:00 - 11:20 | <Coffee Break> | | |
| September 4 (Monday) Session (6) Chairperson: Hyoung Seop Kim (Pohang University of Science and Technology, Korea) | | | |
| 11:20 - 11:45 | Terence G. Langdon | University of Southampton, U.K. | <Invited> Strengthening of bulk metals through the application of severe plastic deformation |
| 11:45 - 12:10 | José María Cabrera Marrero | Universitat Politècnica de Catalunya, Spain | <Invited> Prediction of HAGB and LAGB during severe plastic deformation |
| 12:10 - 12:30 | Sergey V. Dmitriev | Institute for metals superplasticity problems of Russian Academy of Sciences, Russia | Effect of grain boundary segregations on quasi-static and cyclic deformation of aluminum: molecular dynamics study |
| 12:30 - 12:50 | Tilak Bhattacharjee | Kyoto University, Japan | Effect of cold-rolling on AlCoCrFeNi _{2,1} eutectic high entropy alloy |
| 12:50 - 14:30 | Workshop Photo (2) <Lunch> | | |
| September 4 (Monday) Session (7) Chairperson: José María Cabrera Marrero (Universitat Politècnica de Catalunya, Spain) | | | |
| 14:30 - 14:55 | Marco J. Starink | University of Southampton, U.K. | <Invited> Effective models for predicting strength of severely plastically deformed metals and alloys |
| 14:55 - 15:20 | Hyoung Seop Kim | Pohang University of Science and Technology, Korea | <Invited> Residual stress of copper processed by equal-channel angular pressing |
| 15:20 - 15:45 | Julia Ivanisenko | Karlsruhe Institute for Technology, Germany | <Invited> Novel SPD method of high pressure torsion extrusion and its applications |
| 15:45 - 16:10 | Anton Hohenwarter | University of Leoben, Austria | <Invited> Large scale high pressure torsion |
| 16:10 - 16:30 | Yoichi Takizawa | Nagano Forging Co., Ltd, Japan | Developing incremental-feeding technique in high-pressure sliding for upsizing Inconel 718 sheet with superplastic property |
| 16:30 - 16:55 | <Coffee Break> | | |
| September 4 (Monday) Session (8) Chairperson: Kei Ameyama (Ritsumeikan University, Japan) | | | |
| 16:55 - 17:15 | Yongpeng Tang | Kyushu University, Japan | Simultaneous strengthening due to grain refinement and spinodal decomposition in Al-13.4wt%Mg alloy |
| 17:15 - 17:30 | Jung Gi Kim | Pohang University of Science and Technology, Korea | Effect of initial grain size of twinning-induced plasticity steel on severe plastic deformation |
| 17:30 - 17:45 | Takahiro Masuda | Kyushu University, Japan | Mechanical properties and microstructures of extremely strengthened A2024 alloy produced by high-pressure torsion and subsequent aging |
| 17:45 - 18:00 | Amandine Duchaussoy | Normandie Univ, UNIROUEN, INSA Rouen, France | Ultrafine grain structure obtained in Al-Fe alloys by high-pressure torsion: thermal stability and mechanical properties |
| 18:30 - 20:30 | Banquet at Kisoji (Hakataeki-minami) http://www.kisoji.co.jp/kisoji/english/location.html#fukuoka | | |
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| September 5 (Tuesday) Session (9) | | | | Chairperson: Julia Ivanisenko (Karlsruhe Institute for Technology, Germany) |
| 9:00 - 9:25 | Christine Borchers | Georg-August-University Goettingen, Germany | <Invited> Pressure induced bcc to fcc phase transformation in cold spraying | |
| 9:25 - 9:50 | Xinkun Zhu | Kunming University of Science and Technology, China | <Invited> The mechanical properties in Cu and Cu-alloys gradient materials processed by surface mechanical attrition treatment (SMAT) | |
| 9:50 - 10:10 | Askar Kilmametov | Karlsruhe Institute of Technology, Germany | High-pressure torsion induced phase transformations in Ti-based alloys | |
| 10:10 - 10:30 | Zenji Horita | Kyushu University, Japan | Microstructure control using pressure-induced allotropy for enhanced mechanical properties | |
| 10:30 - 10:50 | <Coffee Break> | | | |
| September 5 (Tuesday) Session (10) | | | | |
| Chairpersons: Terence G. Langdon (University of Southampton, U.K.) and Ruslan Z. Valiev (Ufa State Aviation Technical University, Russia) | | | | |
| Recording: Jorge M. Cubero-Sesin (Instituto Tecnológico de Costa Rica, Costa Rica) | | | | |
| 10:50 - 12:20 | Comments from Speakers and General Discussion | | | |
| 12:20 - 12:30 | Closing Words Terence G. Langdon (University of Southampton, U.K.) | | | |
| 13:30 - 16:30 | Lab Tour | | | |