



# 12th Cryogenics 2012

IIR International Conference

September 11 – 14, 2012 Dresden, Germany



## ACCEPTED CONTRIBUTIONS

updated: May 4, 2012

| Paper ID | Session | Accepted for the conference programme as    | Title   | corresp. author   | Authors          |   |
|----------|---------|---|---------|---|------------------|---|
| 073      | 1       | Very Low Temperatures and their Application | lecture | The low temperature system of AEgis   | Eisel T.         | Eisel T., Bremer J., Burghart G., Doser M., Dudarev A.                      |
| 088      | 1       | Very Low Temperatures and their Application | lecture | Studies of Adsorption Characteristics of Activated Carbons down to 4.5K for   | Kasthuriengen S. | Kasthuriengen S., Behera U., Gangradey R., Krishnamoorthy V.,               |
| 071      | 1       | Very Low Temperatures and their Application | poster  | Cryogenic He experiment on natural turbulent convection   | Kralik T.        | Kralik T., Urban P.; Musilova V., Hanelka P., Srnka A., Repisky A.          |
| 072      | 1       | Very Low Temperatures and their Application | poster  | Radiative heat transfer at low temperatures over microscopic distances in vacuo   | Kralik T.        | Kralik T., Musilova V., Hanelka P., Horak M., Srnka A.                      |
| 079      | 1       | Very Low Temperatures and their Application | lecture | Modern ways of reaching and using millikelvin temperatures  | Phelan K.        | Wernicke D., Phelan K.  |
| 053      | 1       | Very Low Temperatures and their Application | lecture | Compact Dilution Refrigerator for Sensor Cooling  | Schneider M.     | Schneider M., Arndt J., Giesel J., Zerweck-Trogisch U., Klier J., Herzog R. |
| 013      | 2       | Superconductivity and its Applications      | poster  | Design of a superconducting inductor for axial concentration flux motor   | Ailam E.H.       | Ailam E., Hachama M., Benallal M. N., Hocine A.                             |
| 016      | 2       | Superconductivity and its Applications      | poster  | Stability of YBCO coated conductor according to Cu stabilizer thickness for cryogenic applications  | Bae J.H.         | Bae J.H., Eom B.Y., Kim H.J., Seong K.C.                                    |
| 012      | 2       | Superconductivity and its Applications      | poster  | Comparison study between several configurations of axial flux superconducting motors  | Benallal M.N.    | Benallal M. N., Ailam E., Hachama M., Hocine A.                             |
| 036      | 2       | Superconductivity and its Applications      | lecture | Analysis of the SIS100 Superconducting Magnet Cooling   | Bleile A.        | Bleile A., Fischer E., Khozhibagyan H., Mierau A.                           |
| 037      | 2       | Superconductivity and its Applications      | lecture | Measurement of Dynamic Heat Losses in the Fast Ramped Superconducting Magnets for the SIS100 Synchrotron                                  | Bleile A.        | Bleile A., Fischer E., Khozhibagyan H., Mierau A., Schnizer P.              |
| 049      | 2       | Superconductivity and its Applications      | poster  | Study of Heat Electrodynamic Processes in High Temperature Superconductors (HTSC) Taking into Account Defects of Their Internal Structure | Dontsova E.      | Arkharov A., Romanovskiy V., Dontsova E.                                    |



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| 033      | 2       | Superconductivity and its Applications   | poster  | Properties of impregnated superconducting coils made from YBCO coated conductor using different technology of impregnation  | Frolek L.         | Frolek L., Seiler E., Šouc J.  |
| 015      | 2       | Superconductivity and its Applications   | lecture | Superconducting Current Feeders System for SST-1  | Gupta N.C.        | Gupta N.C., Garg A., Sonara D., Panchal R., Shah P., Nimavat H., Sharma A.N., Prasad U., Tanna V.L., Pradhan S.          |
| 054      | 2       | Superconductivity and its Applications   | lecture | Cooling systems for superconducting power applications – experiences gained in HTS cable and fault-current limiter projects | Hobl A.           | Hobl A., Bock J., Schmidt F.   |
| 051      | 2       | Superconductivity and its Applications   | lecture | Components and Systems for HTS Applications   | Kade A.           | Kade A., Klupsch M., Kuhn M., Kaiser G., Herzog, R., Klier J.  |
| 002      | 2       | Superconductivity and its Applications   | lecture | Experimental Study of Superconducting Magnets for the NICA Accelerator Complex  | Khodzhibagyan H.  | Khodzhibagyan H., Bazanov A., Donyagin A., Galimov A., Karpinsky V., Kuznetsov G., Nikitaev P., Smirnov A., Trubnikov G. |
| 017      | 2       | Superconductivity and its Applications   | poster  | The cryogenic insulation characteristics of GFRP in Liquid Nitrogen   | Kim H.J.          | H. J. Kim, K. C. Seong, J. H. Choi , S. H. Kim   |
| 056      | 2       | Superconductivity and its Applications   | poster  | Superconducting unclosed shields for improving homogeneity of the magnetic field in magnetic systems                        | Kulikov E.        | Kulikov E., Agapov N., Dorofeev G.' Drobin V., Malinovski H., Prokofichev Yu., Smirnov A., Trubnikov G.                  |
| 011      | 2       | Superconductivity and its Applications   | poster  | Design and Manufacture of Cryogenic Sub-Cooler for High Temperature Superconductors   | Mahmoudian S.M.R. | Mahmoudian S.M.R., Alinejad N., Zandkarimi M., Zarvandi M.   |
| 042      | 2       | Superconductivity and its Applications   | lecture | Refrigeration Characteristics of Slush Nitrogen for High Temperature Superconducting Cable                                  | Nakamura N.       | Nakamura N., Komagome T., Lee Y., Ikeuchi M., Yaguchi H., Machida A, Boone J.  |



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| 026      | 2       | Superconductivity and its Applications            | lecture | Ronayette L.    | Ronayette L., Barbier R. , Bredy Ph. , Fazilleau Ph., Grandclement C., Hervieu B., Joss W., Juster FP., Pfister R.. Pugnat P. |
| 086      | 2       | Superconductivity and its Applications            | poster  | Sosnowski J.    | Sosnowski J.  |
| 062      | 3       | Cryocoolers and their Applications                | poster  | Behera U.       | Behera U , Kasthurirengan S.,Kamble B., Kuzhivel B., Krishnamoorthy V.  |
| 066      | 3       | Cryocoolers and their Applications                | lecture | Cao H.S.        | H.S. Cao, H.J. Holland, C.H. Vermeer, S. Vanapalli, D.R. Zalewski, H.J.M. ter Brake   |
| 038      | 3       | Cryocoolers and their Applications                | lecture | Farouk B.       | Antao, D. S., Farouk, B.  |
| 039      | 3       | Cryocoolers and their Applications                | lecture | Farouk B.       | Antao, D. S., Spoor, P., Corey, J., Farouk, B.  |
| 083      | 3       | Cryocoolers and their Applications                | poster  | Hou Y.          | Hou Y., Lai T., Zhao H., Chen R.  |
| 052      | 3       | Cryocoolers and their Applications                | lecture | Kuhn M.         | Kuhn M., Kaiser G., Schildbach T., Schroeder G., Klier J., Herzog R   |
| 043      | 3       | Cryocoolers and their Applications                | poster  | Liu H.          | Huiming Liu, Dong Xu, Peng Xu, Xiangdong Xu, Laifeng Li, Linghui Gong   |
| 068      | 3       | Cryocoolers and their Applications                | poster  | Thummes G.      | Sun J., Dietrich M., Thummes G.   |
| 008      | 3       | Cryocoolers and their Applications                | lecture | Winkelmann D.   | Winkelmann D., Oellrich L.R.  |
| 001      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Agapov N.       | Agapov N., Batin V , Emelianov N., Hisameev I., Krakovskv B..   |
| 010      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Anghel A.       | Anghel A., Jakob B., Bruegger M., Schmidt T., Tanaka T., Kohda T.   |



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| 018      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | The MITICA facility: a possible optimization of the Cryogenic Plant cooling capacity                     | Fellin F.         | Fellin F., Haas H., Hanke S., Meunier L., Passardi G., Scannapiego M., Valente M., Zaccaria P.                                  |
| 030      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Design, Manufacturing and Assembly of the Cryogenic Transfer Line for XFEL/AMTF                          | Fydrych J.        | Fydrych J., Chorowski M., Duda P., Grzegory P., Iluk A., Malcher K., Michalski G., Rusinski E., Strychalski G.                  |
| 045      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Numerical simulation of mixed convection heat transfer to forced flow supercritical helium               | Ghosh P.          | Rebelo N., Ghosh P.   |
| 009      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Development of a two-phase thermosiphon for extreme cooling requirements in the tritium source of KATRIN | Grohmann S.       | Grohmann S., Bode T., Hötzl M., Schön H., Süßer M., Wahl T.   |
| 021      | 4       | Cryogenics in Particle Physics / Space Cryogenics | poster  | Liquid cryogen targets for experiments in nuclear relativistic and particle physics                      | Konstantinov A.V. | Konstantinov A., Borzunov U., Shimanskiy S., Varava A.  |
| 065      | 4       | Cryogenics in Particle Physics / Space Cryogenics | poster  | Cryogenic System of Superconducting Separator for Kaon Channel of IHEP Accelerator                       | Kozub S.          | Kozub S., Ageyev A., Orlov A., Zinchenko S.   |
| 019      | 4       | Cryogenics in Particle Physics / Space Cryogenics | poster  | Cool-down processes of NICA accelerator complex  | Mitrofanova Y.A.  | Mitrofanova Y., Agapov N., Batin V., Emelianov N., Nikiforov D., Shvidkiy D.  |
| 035      | 4       | Cryogenics in Particle Physics / Space Cryogenics | poster  | Design, manufacturing and assembly of XATC test cryostats for AMTF                                       | Polinski J.       | Polinski J., Bozhko Y., Petersen P., Chorowski M., Duda P., Grzegory P., Michalski G., Schaffran J., Strychalski G., Zhirnov A. |
| 090      | 4       | Cryogenics in Particle Physics / Space Cryogenics | poster  | Status of the Cryogenic System for the Ariel E-LINAC at TRIUMF   | Sitnikov A.       | Sitnikov A., Bylinskii I., Koscielniak S., Koveshnikov A., Laxdal R., Yosifov D.  |



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| 055      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Presentation of the German DIN Working Group – Safety Devices for Helium Cryostats   | Süsser M.         | Grohmann S., Haberstroh Ch., Süßer M.   |
| 020      | 4       | Cryogenics in Particle Physics / Space Cryogenics | lecture | Design proposal for MITICA Cryogenic Plant   | Valente M.        | Valente M., Fellin F., Haas H., Hanke S., Scannapiego M., Zaccaria P.   |
| 048      | 5       | Cryomedicine, Therapy and Technology              | poster  | Dreams and Reality of Superhigh Frequency Cryogenic Technology in Surgery  | Butorina A.       | Butorina A., Arkharov A., Matveev V.  |
| 077      | 5       | Cryomedicine, Therapy and Technology              | lecture | Study of Contact Methods to Cool Biological Tissue in Local Cryosurgery  | Kondratenko R.    | Nesterov S., Kondratenko R.   |
| 006      | 5       | Cryomedicine, Therapy and Technology              | lecture | Cryotherapy state-of-art and challenges in Poland  | Piotrowska A.     | Chorowski M., Piotrowska A., Adamowicz B., Haladyn E.   |
| 004      | 6       | Cryobiology, Preservation and Technology          | lecture | Application of the Very Low Temperatures for the Preservation of Rare Plants' Seeds of Ukraine                                       | Arapetyan E.      | Arapetyan E., Usatenko Yu., Skubitska M.  |
| 064      | 6       | Cryobiology, Preservation and Technology          | lecture | Biological and technological challenges establishing a future-proof cryogenic biomaterialbank  | Ciba P.           | Ciba P., Böhmert B., Lermen D., Fuhr GR, Kruse C  |
| 089      | 6       | Cryobiology, Preservation and Technology          | lecture | State of Genetic Apparatus of Stem Compartment Cells of Cryopreserved Fetal Liver of Different Gestation Terms                       | Goltsev A.N.      | Goltsev A.N., Lutsenko E.D., Dimitrov A.Yu., Durava T.G., Ostankov M.V., Yampolskaya E.Ye., Gaevskaya Yu.A., Babenko N.N., Chelombitko O.V. |
| 046      | 6       | Cryobiology, Preservation and Technology          | lecture | Analysis on protein stability in Tris buffered purified bulk solutions during the freezing process                                   | Heidingsfelder J. | Heidingsfelder J., Reinsch H., Klier J., Herzog R.  |
| 070      | 6       | Cryobiology, Preservation and Technology          | lecture | Safety and Quality Assurance in Donation, Harvest and Preservation of Cells and Tissues of Human Origin – A Review of Own Experience | Měřička P.        | Měřička P., Straková H., Štěrba, L.   |



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| 087      | 6       | Cryobiology, Preservation and Technology        | lecture<br>Cryopreservation of mesenchymal stromal cells by vitrification in multicomponent solutions                     | Petrenko A.         | Petrenko A.Yu., Trufanova N.A., Petrenko Yu.A.                                   |
| 074      | 6       | Cryobiology, Preservation and Technology        | lecture<br>Standardization of the cryopreservation process for parathyroid glands   | Von Walcke-Wulffen, | Von Walcke-Wulffen, V.-J.  |
| 003      | 6       | Cryobiology, Preservation and Technology        | lecture<br>Coupled Transport of Water and Cryoprotectant across Cell Membranes and Applications to Cryopreservation       | Weng L.             | Weng L., Li W.   |
| 075      | 6       | Cryobiology, Preservation and Technology        | lecture<br>Cryomechatronics in the context of biobanking: The technology of the central HIV-biobank for vaccine research. | Zimmermann H.       | Zimmermann H.  |
| 022      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Enrichment of rare gases concentrates with application of diaphragm technologies                               | Bondarenko V.L.     | Bondarenko V.L., Losyakov N.P., Simonenko Yu.M., Chuklin A.P.                    |
| 023      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Mixtures on basis of rare gases. Application and methods of production  | Bondarenko V.L.     | Bondarenko V.L., Diachenko O.V.  |
| 024      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Cascade units for neon isotope production by rectification method  | Bondarenko V.L.     | Bondarenko V.L., Simonenko Yu.M., Simonenko O.Yu., Yemelyanov A.M., Luschik A.A. |
| 058      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Air Separation Unit installation and qualification at the French Guyana Space Centre                           | Burdaszewski P.     | Burdaszewski P   |
| 059      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Assessment of the Storage of Crude Helium in Reserves in Europe and elsewhere.                                 | Clarke R.           | Clarke R., Scurlock R.   |
| 014      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Analysis of precooling process in a helium liquefaction system with a G-M cryocooler                            | Gong L.H.           | Xu D., Xu X.D., Gong L.H., Liu H.M., Li L.F.                                     |
| 076      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Thermosiphon Tanks for reliable pump operation   | Hnizdil T.          | Hnizdil T., Lánský M., Chrž V.   |



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| 084      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Experimental investigation on the thermodynamic performance of turbo-expander in two phases   | Hou Y.          | Lai T., Hou Y., Niu L.                          |
| 027      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Design of a cryogenic helium plate-fin heat exchanger   | Hu Z.J.         | Hu Z.J., Qiu Y.N., Zhang N., Li Q.              |
| 047      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Exergy Analysis to Determine Appropriate Design and Operating Parameters for Collins Refrigerator-Liquefier under Mixed Mode Operation   | Chowdhury K     | Chowdhury K; Kundu A.; Thomas R. J; Ghosh P     |
| 085      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Oxygen Supply for CO <sub>2</sub> Capture by Oxyfuel Coal Combustion   | Kalbassi M.     | Kalbassi M., Higginbotham P., Gibson S.         |
| 007      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>Thermodynamic analysis of liquid oxygen production system based on coupling Joule-Thomson cooler with PSA  | Piotrowska A.   | Piotrowska A., Chorowski M.                     |
| 029      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Study concerning the possibility for increasing argon recovery from a cryogenic air separation process  | Popa V.         | Popa V., Cuzic M., Serban Al.                   |
| 060      | 7       | Liquefaction and Separation of Industrial Gases | lecture<br>The Future of Helium? A Global Agency to Oversee Production, Storage, Supply and Use of Helium Gas and Liquid.   | Scurlock R.     | Scurlock R., Clarke R., Glowacki B., Nuttall W. |
| 063      | 7       | Liquefaction and Separation of Industrial Gases | rejected<br>Energy Saving Opportunities In Oxygen Plant –A CASE STUDY   | Sonani B.J.     | Sonani B.J., Ratnadhariya J.K.                  |
| 028      | 7       | Liquefaction and Separation of Industrial Gases | poster<br>Development of an Equation of State for the Representation of Solid-Liquid, Solid-Vapour, and Liquid-Vapour Equilibria of Substances of Interest for the Air Distillation Process | Stringari P.    | Campestrini M., Stringari P.                    |
| 040      | 8       | Liquefied Natural Gas                           | lecture<br>LNG as vehicle fuel in Italy   | Arteconi A.     | Arteconi A., Polonara F.                        |
| 041      | 8       | Liquefied Natural Gas                           | lecture<br>A multiobjective optimization for micro-scale liquefaction plants  | Arteconi A.     | Arteconi A., Polonara F.                        |
| 031      | 8       | Liquefied Natural Gas                           | lecture<br>Conceptual Design of an Efficient Small LNG Production Facility  | Quack H.        | Quack H.  |



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| 057      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | poster                  | The possibility application of LNG heat of vaporisation in the oxygen production from the atmospheric air by TSA method.                  | Banaszkiewicz T.  | Banaszkiewicz T., Chorowski M.                                    |
| 061      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | The development of methods and means for long-term storage of liquid hydrogen of high purity  | Cheremnykh O. Ya. | Cheremnykh O. Ya.   |
| 069      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | poster                  | The development of methods and means of gasification of liquid hydrogen under supercritical parameters                                    | Cheremnykh O. Ya. | Cheremnykh O. Ya.   |
| 082      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | poster                  | The development of methods and means of evacuation of hydrogen from tanks of a space flying apparatus under supercritical parameters      | Cheremnykh O. Ya. | Cheremnykh O. Ya.   |
| 078      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | Feasibility Study of "CO2 free hydrogen chain" utilizing Australian brown coal linked with CCS  | Kenji I.          | Inoue Kenji, Yoshino Yasushi, Harada Eiichi                       |
| 050      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | A new cryogenic high-pressure H <sub>2</sub> test area: First results   | Klier J.          | J. Klier, G. Kaiser, M. Klupsch, A. Kade, M. Schneider, R. Herzog |
| 067      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | Thermophysical Properties of Hydrogen and Deuterium at all Ortho-Para Compositions  | Leachman J.       | Leachman J., Richardson I.  |
| 044      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | cancelled by the author | Integrated Refrigeration and Storage for Liquid Hydrogen Ground Servicing   | Notardonato W.    | Notardonato, W., Oliviera, J., Tomsik, T., Baik, J.               |
| 081      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | Search for the Best Processes to Liquefy Hydrogen in Very Large Plants  | Quack H.          | Quack H., Essler J., Haberstroh Ch.                               |
| 005      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | Liquid Natural Gas exergy utilization by coupling the LNG regasification unit and filling system for Natural Gas adsorption storage tanks | Rozsak E.         | Rozsak E., Chorowski M.   |
| 025      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture                 | Cryogenic hydrogen storage in highly porous materials – A modelling approach –  | Schlemminger C.   | Schlemminger Ch., Næss E., Bünger U.                              |



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| 080      | 9       | Cryogenic Energy Storage and Cryogenic Fuels | lecture | Principles for the liquefaction of hydrogen with emphasis on pre-cooling processes  | Walnum H.T. | Walnum H.T., Berstad D., Drescher M., Nekså P., Quack H., Haberstroh Ch., Essler J. |
| 034      | 10      | Industrial Applications of Cryogenic Gases   | poster  | Test procedures for cryogenic components and considerations for leakage measurement | Boersch M.  | Boersch, M., Holdener, F., Iten, E., Oertig, D.                                     |
| 032      | 10      | Industrial Applications of Cryogenic Gases   | lecture | Advanced Cryogenic Process for low Purity Oxygen Production                         | Kirchner L. | Kirchner, L., Lochner, S.   |