## **Oral Presentations**

### October 3, Monday

#### 9:30 - Opening Session: Addresses and Lectures

Addresses	Chair: Yasuhiro Iwamura (ICCF20 Co-Chair, Tohoku Univ.)		
<b>Opening Address</b>	Jirohta Kasagi (ICCF20 Co-Chair, Tohoku Univ.)		
Welcome Address	Kimio Hanawa (Executive Vice President, Tohoku Univ.		
	Hiroyuki Hama (Director of ELPH, Tohoku Uiniv.)		
Welcome Message	from Emiko Okuyama (Mayer, Sendai City)		
10 min intermission			
Special Lecture			
CMNS Research; Past,	Present and Future (OP 1) (40)		
	Michael McKubre (Seashore Research, USA)		
	(Trevor Dardik (Seashore Research, USA))		
Present Status of Hydr	ogen Energy Policy in Japan (OP 2) (40)		
	Takao Kashiwagi (Tokyo Institute of Technology, Japan)		

11:20 – Coffee break

11:40 – Session I: Heat Production 1

Progress over the years Chair: Jean-Paul Biberian (Aix-Marseille France, France) Anomalous Heat Effects by Interaction of Nano-Metal and H(D)-Gas (A 81) (25) Akito Takahashi (Technova Inc., Japan) Improved stability and performance of surface-modified Constantan wires, by chemical additions and unconventional geometrical structures (A 9) (25) Francesco Celani (INFN-LNF, Italy)

12:30 – Lunch

#### $14{:}00-Session$ II: Heat Production 2

Gas Phase I Chair: Akira Kitamura (Technova Inc., Japan) MFMP \*GlowStick\* series, a high temperature experiment platform (A 25) (20) Robert Greenver (Martin Fleischmann Memorial Project, UK) Controlled Electron Capture: Enhanced Stimulation and Calorimetry Methods (A 83) (20) Francis Tanzella (SRI International, USA) Validation of Brillouin Energy Corporation: Hydrogen Hot Tube Experiments (A 32) (20) Michael Halem (LENR-Invest LLC, USA) Anomalous Excess Heat Generated by the Interaction between Nano-structured Pd/Ni surface and  $D_2/H_2$  gas (A 40) (20) Takehiko Itoh (Tohoku University and Clean Planet Inc, Japan) 15:20 -Coffee Break 15:40 - Session III: Unusual Intermediate State / Probe for Heat production Chair: Michael Melich (Naval Postgraduate School, USA) Synthesis of an Iron Pico-Hydride (Fe-pH). A permanent electric dipole of atomic size with high enthalpy of formation (A 15) (20) Jacques Dufour (S\*PIC\*E, France) Rydberg matter and Low Energy Nuclear Reactions (A 64) (20)Sveinn Ólafsson (University of Iceland, Iceland) Progress in Development of a Power Source Based on Low Energy Nuclear Reactions (LENRs) (A 54) (20)George Miley (University of Illinois, USA) Phonon Gain Heralds Successful Cold Fusion (A 79) (20)Mitchell Swartz (Nanortech, Inc., USA) Fluorescence Based Temperature Sensor for In-Situ Sub-Micron Heat Detection on D/H-Loaded Palladium Electrode Surfaces (A 7) (20) Sangho Bok (University of Missouri, USA)

18:20 – ISCMN General Meeting Gas Phase II Chair: Francesco Celani (INFN-LNF, Italy) Collaborative Examination on Anomalous Heat Effect Using Nickel-Based Binary Nanocomposites Supported by Zirconia (A 46) (25) Akira Kitamura (Technova Inc., Japan)

Replication Experiments at Tohoku University on Anomalous Heat Generation Using Nickel-Based Binary Nanocomposites and Hydrogen Isotope Gas (A 41) (25) Yasuhiro Iwamura (Tohoku University, Japan)

Investigations of  $Pd/D_2$  in Zeolite Systems (A 68) (20)

Iraj Parchamazad (University of La Verne, USA)

10:40 – Coffee Break

11:00 - Session V: Stimulation

Ultrasonic / Laser / Discharge Chair: Tomoyoshi Motohiro (Nagoya Univ., Japan) Electromagnetic Resonance in a Piezo Antenna Produces Heat and Tritium (A 78) (20) Roger Stringham (First Gate Energies, USA) Facility for studies with vibrating metal plates (A 29) (15) Florian Metzler (Massachusetts Institute of Technology, USA) Spectroscopy Analysis of Laser Abrasion and Laser Cavitation Induced by Pulse Laser (A 75) (20) Hitoshi Soyama (Tohoku University, Japan)

Helium Production in Plasma Arc Discharge: Successful Replication of Wendt & Irion Tungsten Wire Explosion (A 19) (20)

Max Fomitchev-Zamilov (Quantum Potential Corporation, USA)

12:15 – Group Photo Lunch 14:00 - Session VI: Theoretical Studies 1

Chair: Andrew Meulenberg (Science for Humanity Trust, Inc., USA) Models for quantum mechanical composites, and the coupling between the center of mass and relative degrees of freedom (A 30) (20)

Peter Hagelstein (Massachusetts Institute of Technology, USA) Catalytic mechanism of LENR in quasicrystals based on localized anharmonic vibrations and phasons (A 14) (20)

Volodymyr Dubinko (Kharkov Institute of Physics and Technology, Ukraine) Formation of Coherent Correlated States as the Universal Method of Explanation of LENR Paradoxes and Solving of LENR Problems (A 90) (20)

Vladimir Vysotskii (Kiev National Shevchenko University, Ukraine) Interactions of both protons and deuterons with valence d-electrons in transition metals (A 1) (20)

Dimiter Alexandrov (Lakehead University, Canada)

15:20 -

Coffee Break

15:40 – Poster Session I: Short Oral and Poster

3-minute Oral Presentations

Chairs: Tony La Gatta (University of Ferrara, TSEM, Italy) Hidetoshi Kikunaga (Tohoku University, Japan)

**Poster Presentations** 

18:30 -

IAC meeting (members only)

Chair: Tatsumi Hioki (Nagoya University, Japan)
Observation of <sup>141</sup> Pr by <sup>40</sup> Ar scattering (RBS) on Cs implanted Pd/CaO multi-layer foil
with $D_2$ gas permeation (A 43) (20)
Jirohta Kasagi (Tohoku University, Japan)
Evidence for Nuclear Transmutations in Ni-H Electrolysis (A 66) (20)
K P Rajeev (Indian Institute of Technology Kanpur, India)
(Mahadeva Srinivasan (BARC, retired, India))
Biotransmutation of Cs <sup>133</sup> and Biodeactivation of Cs <sup>137</sup> by Aerobic Microorganisms of
Methanogenic Sea Ooze (A 91) (20)
Vladimir Vysotskii (Kiev National Shevchenko University, Ukraine)
10:30 –
Coffee Break
10:50 – Session VIII: Theoretical Studies 2
Unconventional Nuclear Model /Exotic Particle / New approach
Chair: Peter Hagelstein (MIT, USA)
Nuclear Structure Aspects of Low-Energy Nuclear Reactions (LENR) (A 11) (20)
Norman D. Cook (Kansai University, Japan)
Role of the magnetic monopole as the catalyst in the cold nuclear fusion reaction (A 73)
(20)
(20) Tetsuo Sawada (Nihon University, Japan)

11:50 -

Lunch

13:20 – To take Sightseeing Bus at East Gate Square of Sendai Station

Excursion to Matsushima

18:30 – Return to East Gate Square of Sendai Station

#### 9:30 – Session IX: Heat Production 4

Electrolysis	Chair: Trevor Dardik (Seashore Research, USA)
Nickel and Light Water Electro	olysis Experiments (A 58) (20)
	David Nagel (The George Washington University, USA)
Effects of Cathode Pretreatme	nt and D/Pd on Excess Heats in Closed Pd   $D_2O+D_2SO_4$
Electrolytic Cells (A 92) (20)	
	Wu-Shou Zhang (Chinese Academy of Sciences, China)
ICARUS 9 Replication (A 6)	(20)
	Jean-Paul Biberian (Aix-Marseille University, France)
Features of the Fleischmann-F	Pons Isoperibolic Calorimetry (A 53) (20)
	Melvin H. Miles (University of La Verne, USA)

10:50 – Coffee Break 11:20 – Session X: Bombardment

Deuteron Beam / Super Jet / Laser Chair: Jinghao He (University of Missouri, USA) Enhancement of the DD Fusion Yield: Experimental Evidence for Interplay between the Threshold Resonance and the Electron Screening Effect (A 12) (25) Konrad Czerski (University of Szczecin, Poland) Low-energy cooperative DD collision in liquid metal and electron screening effect (A 36) (15) Yuki Honda (Tohoku University, Japan) Primitive experimental tests toward futural cold fusion engine based on pointcompression due to supermuit-jets colliding with pulse (Fusine) (A 62) (20)

Ken Naitoh (Waseda University, Japan) Plasmonic Concepts for Condensed-Matter Nuclear Fusion (A 82) (20) Katsuaki Tanabe (Kyoto University, Japan)

12:30 -

Lunch

 $14{:}00-Session$  XI: Theoretical Studies 3

Electron Deep Orbit / Others Advance on Electron Deep Orbits of the Hydrogen Atom for LENR (A 67) (20) Jean-Luc Paillet (Aix-Marseille University, France) Implications of the electron deep orbits for cold fusion and physics (A 51) (20) Andrew Meulenberg (Science for Humanity Trust, Inc., USA) Deep States from the Schrodinger Equation and Experimental Verification (A 56) (20) Trey Morris (Howard University, USA) Physical Model of Energy Fluctuation Divergence (A 63) (15) Ken-ichi Okubo (Kyoto University, Japan)

15:30 – Coffee Break 15:50 –Poster Session II

Poster Presentations

18:30 19:00 – Banquet (Hotel Metropolitan Sendai) 21:00

Chair: Sunwon Park (KAIST, Korea)
Hyperfine Interactions in Pd foils during D/H electrochemical loading (A 37) (20)
Jinghao He (University of Missouri, USA)
Stabilization of Nano-Size Pd Particles under Hydrogen Atmosphere (A 35) (20)
Tatsumi Hioki (Nagoya University, Japan)
Calorimetric study of hydrogen absorption in nanocomposite materials prepared from
$Pd_xNi_{30-x}Zr_{65} (0 \le x \le 35) a morphous alloys (A 49)$ (15)
Emanuele Marano (University of Turin, Italy)
Technology of Processing and Conditioning Uranium and Plutonium Fission Products
and Liquid Radioactive Waste (A 23) (20)
Igor Goryachev (Russian Academy of Sciences, Russia)
Responsibilities of U.S. Government Agencies for Support of Low Energy Nuclear
Reactions (A 27) $(15)$
Thomas Grimshaw (The University of Texas at Austin, USA)
11:00 -
Coffee Break
11:20 – Closing Session
Reports and/or Remarks Chair; Jirohta Kasagi (Tohoku University, Japan)

Yasuhiro Iwamura (Tohoku University, Japan) Mahadeva Srinivasan (BARC, retired, India) Jean-Paul Biberian (Aix-Marseille University, France) Francesco Celani (INFN-LNF, Italy) David Nagel (The George Washington University, USA)

12:30 - Dismissed

# Poster Presentations

Poster #	Presenter	Affiliation	Title	Abstr #
Pos 1	Orchideh Azizi	SKINR, Univ. Missouri, USA	Effect of mercury on the kinetics and mechanism of hydrogen/ deuterium loading into palladium in alkaline solution	A 2
Pos 2	Francesco Celani	INFN-LNF, Italy	The Zitterbewegung interpretation of quantum mechanics as theoretical framework for Ultra Dense Deuterium and Low Energy Nuclear Reactions	A 8
Pos 3	William Collis	ISCMNS, Italy	Minimal Exotic Neutral Particle Models	A 10
Pos 4	Volodymyr Dubinko	NSC KIPT, Ukraine	Radiation-induced formation of localized anharmonic vibrations as a method to trigger LENR	A 13
Pos 5	G. Egely	Egely Ltd., Hungary	Influencing Radioactivity via Transmutation	A16
Pos 6	Arik El-Boher	SKINR, Univ. Missouri, USA	Final report on SKINR replication experimental program to seek excess heat using Ni powders mixed with $LiAlH_4$ and free Li under high temperature Hydrogen gas	A 17
Pos 7	Max Fomitchev-Zamilov	Quantum Potential Corporation, USA	Neutron Synthesis via Arc Discharge in Low-Pressure Hydrogen Plasma: Successful Replication of Earnest Sternglass Experiment	A 20
Pos 8	I.V.Goryachev	Russian Academy of Sciences, Russia	Implementing Innovative Technologies for Cleaning Sea Areas from Solid Pollution	A 24
Pos 9	Robert Greenyer	Martin Fleischmann Memorial Project, United Kingdom	Live Open Science, experience in LENR research and techniques for future application to advance the scientific method	A 26
Pos 10	P. L. Hagelstein	Massachusetts Institute of Technology, USA	Statistical mechanics models for $PdH_x$ and $PdD_x$	A 31
Pos 11	Philippe Hatt	Independent, Belgium	Cold Nuclear Transmutations Theoretical models of atom nuclei	A 33
Pos 12	Philippe Hatt	Independent, Belgium	Cold Nuclear Transmutations Structural Anomaly of Palladium Nucleus	A 34
Pos 13	T. Itoh	Tohoku University, Japan	Pd, Se, Zr Transmutation Experiments induced by $D_2$ gas permeation with the nano-sized Pd complexes	A 39
Pos 14	Lutz Jaitner	www.condensed- plasmoids.com, Germany	Condensed Plasmoids – The Intermediate State of LENR	A 42
Pos 15	Andrew Meulenberg	Science for Humanity Trust, Inc., USA	Physical reasons for rejecting arguments against Deep-Dirac Levels - Physical reality vs mathematical models in LENR	A 50
Pos 16	Melvin H. Miles	University of LaVerne, USA	The Eyring Rate Theory Applied To Cold Fusion	A 52
Pos 17	Hidemi Miura	Independent, Japan	States of Hydrogen, Oxygen or Magnesium Atom in or with Cubic Ice Crystal-like Water Clusters	A 55
Pos 18	David J. Nagel	The George Washington University, USA	Gas-Phase Nickel Hydrogen Experiments in Nickel Tubes in a Furnace	A 57
Pos 19	David J. Nagel	The George Washington University, USA	Electrical Noise Spectroscopy of LENR Electrochemical Cells	A 59
Pos 20	David J. Nagel	The George Washington University, USA	Production of Clean Water by using Energy from LENR	A 60
Pos 21	Ken Naitoh	Waseda University, Japan	A new physical theory for describing and stabilizing cold fusion	A 61

Pos 22	Shinsuke Ono	KOUSHIRYOKU Lab.	Simulation of the neutron generator with a nickel-hydrogen	A 65
		Ltd., Japan	system	
Pos 23	Dennis Pease	SKINR, University of Missouri, USA	Measurement Errors and Artifacts in AHE and LENR Experiments	A 69
Pos 24	Jed Rothwell	LENR-CANR.org, USA	Cold Fusion Will Lower the Cost of both Energy and Equipment	A 70
Pos 25	Frank Smith	Independent, USA	Deuterium in 147-atom Pd nanoclusters embedded in zeolite cages	A 74
Pos 26	Slobodan Stankovic	Swiss Oxyhydrogen Energy, Switzerland	Measurements of temperature and electron density of oxyhydrogen (HHO) flame	A 76
Pos 27	Daniel S Szumski	Independent, USA	Laws of Nature are Precise and Reproducible	A 80
Pos 28	Tarassenko G.V.	Caspian State Univ. of Tech. Eng., Kazakhstan	Cold fusion on the basis of the model of the planet Earth	A 84
Pos 29	Zhongqun Tian	Xiamen University, China	A study on the excess heat generation in Ni-H gas discharge systems	A 85
Pos 30	Zhongqun Tian	Xiamen University, China	A study on Ni-H high-temperature devices	A 86
Pos 31	Ken-ichi Tsuchiya	National Institute of Technology, Japan	Explanation of nuclear reactions in solids by solving many-body problems of charged bose particles trapped at the bottom of the harmonic potentials	A 87
Pos 32	V.I. Vysotskii	Kiev National Shevchenko University, Ukraine	Experimental Observation and Theoretical Explanation of Effective Transmutation of Target Nuclei Under the Action of Shock Waves	A 89
Pos 33	V.F. Zelensky	NSC KIPT, Kharkov, Ukraine	Nuclear fusion reactions in vacuum and in matter and two ways of nuclear fusion energy mastering	AD 1
Pos 34	V.F. Zelensky	NSC KIPT, Kharkov, Ukraine	Pilot chemonuclear fusion energy generator development and testing («control experiment»)	AD 2
Pos 35	Tadahiko Mizuno	Hydrogen Eng. Appl. and Devel. Company, Japan	Recent development of CF reaction experiment	AD 3
Pos 36	C.R. Narayanaswamy	The Silcal Metallurgic Ltd., India	Observation of Anomalous Production of Si and Fe in an Arc Furnace Driven Ferro Silicon Smelting Plant at levels of Tons per day	AD 4