Program of FUSION03 Conference

Matsushima, November 12-15, 2003

The allocated time in parenthesis includes discussion.

November 11 (Tuesday)

— Reception (19:00-21:30) —

November 12 (Wednesday)

I. Opening Address (9:00-9:10)

Chairperson: J. Kasagi (Tohoku)

N. Takigawa (Tohoku)

Opening address (10)

II. Opening Session (9:10-10:10)

Chairperson: M.S. Hussein (Sao Paulo)

D.J. Hinde (ANU)

Three steps to fusion: what are the questions, where are the answers? (30)

H. Esbensen (ANL)

Challenges in coupled-channels calculations (30)

— Coffee Break (10:10-10:30) —

III. Heavy Ion Fusion Reactions I (10:30-12:40)

Chairperson: G. Pollarolo (Torino)

P. Moller (Los Alamos)

Fission and fusion at the end of the periodic system (30)

F. Scarlassara (Padova)

Subbarrier fusion and barrier distributions of ^{48}Ca + ^{90,96}Zr (20)

M. Trotta (INFN-LNL)

Fusion hindrance and quasi-fission in ^{48}Ca induced reactions near the Coulomb barrier (20)

H. Ikezoe (JAERI)

Effect of closed shell on heavy-ion fusion reaction (20)

S. Mitsuoka (JAERI)

Dependence of heavy-ion fusion reaction on nuclear deformation (20)

C.L. Jiang (ANL)

Systematic study of heavy-ion fusion reactions at extreme subbarrier energies (20)

— Lunch (12:40-14:00) —

IV. Heavy Ion Fusion Reactions II (14:00-16:10)

Chairperson: A. Vitturi (Padova)

I.J. Thompson (Surrey)
Modelling effects of halo breakup on fusion (30)

K. Hagino (YITP)
Reaction dynamics for fusion of weakly bound nuclei (20)

T. Nakatsukasa (Tohoku)
Fusion reaction of halo nuclei: a time-dependent approach (20)

P.R.S. Gomes (Universidade Federal Fluminense)
Fusion of stable weakly bound nuclei (20)

A. Szanto de Toledo (Sao Paulo)
Study of the influence of projectile breakup on the fusion cross section of ^{6,7}Li + ^{12}C, ^{59}Co (20)

J.F. Liang (Oak Ridge)
Subbarrier fusion enhancement in neutron-rich radioactive ^{132}Sn on ^{64}Ni (20)

— Coffee Break (16:10-16:30) —

V. Heavy Ion Fusion Reactions III + Structure (16:30-19:00)

Chairperson: H. Esbensen (ANL)

G. de France (GANIL)
Fusion reactions involving radioactive beams at GANIL (30)

V.I. Zagrebaev (JINR)
Sub-barrier fusion enhancement due to neutron transfer (20)

L. Corradi (INFN-LNL)
Multinucleon transfer reactions studied with magnetic spectrometers (20)

A.N. Wilson (ANU)
Direct decays from superdeformed states in ^{192}Pb observed using time-correlated gamma-ray spectroscopy (20)

M.S. Hussein (Sao Paulo)
Decay out of a superdeformed band (20)

E. Maglione (Padova)
Theoretical description of proton decay (20)

M. Oi (Surrey)
Application of 3D-cranking model to even-even systems with triaxiality (20)

November 13 (Thursday)

VI. Heavy Ion Fusion Reactions IV (9:00-10:00)

Chairperson: C. Bertulani (MSU)

P.R.S. Gomes (Universidade Federal Fluminense)

A consistent description of the heavy-ion fusion and elastic scattering processes using a nonlocal model (20)

H.Q. Zhang (CIAE)

^{6}Li + ^{208}Pb near barrier fusion reaction (20)

C.J. Lin (CIAE)

Impacts of the cutoff of CC effects on heavy-ion fusion reactions at extreme sub-barrier energies (20)

— Coffee Break (10:00-10:20) —

VII. Heavy Ion Fusion Reactions V (10:20-12:00)

Chairperson: D. Hinde (ANU)

N. Takigawa (Tohoku)

Recent theoretical activities of heavy-ion fusion reactions in Sendai (30)

G. Pollarolo (Torino)

Fusion reactions as a probe for the nucleus-nucleus potential at short distances (30)

M. Dasgupta (ANU)

The nuclear potential in heavy-ion fusion (20)

W.Y. So (Sungkyunkwan)

Optical model analyses of elastic scattering, fusion, and breakup reaction induced by loosely bound nuclei (20)

— Free Time (12:00-17:00) —

— Coffee (16:40-17:00) —

VIII. Muon Catalyzed Fusion (17:00-17:40)

Chairperson: V. Fiorentini (Ferrara)

T. Matsuzaki (RIKEN)

Strong n-alpha correlations in the t + t fusion reactions observed in the muon catalyzed t-t fusion (20)

N. Kawamura (KEK)

Anomalous temperature-dependent phenomena of muon catalyzed fusion in solid D-T (20)

IX. Towards Energy Generation (17:40-19:00)

Chairperson: J. Kasagi (Tohoku)

Y. Arata (Osaka)

Intense solid-state nuclear fusion in highly deuterated pychnodeuterium-lumps (30)

H. Ikegami (Uppsala & Osaka)

Enormous entropy enhancement revealed in linked nuclear and atomic Li + D fusion in metallic Li liquid (30)

A. Bonasera (INFN-LNS)

Dynamics of fusion and energy production (20)

November 14 (Friday)

X. Tunneling/Fusion/Fission/Microcluster/Structure (8:40-10:20)

Chairperson: I.J. Thompson (Surrey)

D.M. Brink (Oxford)
Time dependent approach to quantum tunneling (20)

C. Signorini (Padova)
New data, puzzles, open questions in the interaction at the barrier of ^{9,10,11}Be, ^{6}Li with ^{208}Pb, ^{209}Bi (20)

P. Froebrich (HMI)
Present status of the theory of fission of hot nuclei (20)

S.M. Lee (Tsukuba Nanotechnology Co., Ltd.)
Formation mechanisms of hot atomic clusters analogous to IMF decay from the compound nucleus (20)

S. Oryu (Tokyo University of Science)
Polarization effects on the ^{3}He(d,p)^{4}He fusion reaction in the $3/2^{+}$ resonance region (20)

— Coffee Break (10:20-10:40) —

XI. Screening I (10:40-12:40)

Chairperson: N. Takigawa (Tohoku)

G. Shaviv (Israel Institute of Technology)
New screening results for dense plasma (30)

T. Kajino (National Astronomical Observatory)
Fusion reactions in supernovae and the early universe (20)

G. Fiorentini (Ferrara)
Nuclear reactions at very low energies: electron screening or what else? (30)

S. Kimura (INFN-LNS)
Influence of tunneling on electron screening in low energy nuclear reactions in laboratories (20)

C. Bertulani (MSU)
Stopping power vs. screeening effects in nuclear fusion reactions (20)

— Lunch (12:40-14:00) —

XII. Screening II (14:00-15:30)

Chairperson: C. Spitaleri (INFN-LNS)

G. Baur (Institut fur Kernphysik)

Theory of the Trojan Horse method (30)

A. Tumino (INFN-LNS)

Indirect study of the astrophysically relevant ^{6}Li(p,α)^{3}He reaction by means of the Trojan Horse method (20)

M.G. Pellegriti (INFN-LNS)

Coulomb suppression effects in the proton-proton elestic scattering extracted from the ^{2}H(p,pp)n reaction (20)

T. Itahashi (RCNP)

New experimental approach to determine the electron screening potential of various atomic configurations for fusion reaction (20)

— Coffee Break (15:30-15:50) —

XIII. Nuclear Reactions and Decays in Matter (15:50-18:40)

Chairperson: G. Shaviv (Israel Institute of Technology)

J. Kasagi (Tohoku)

Low energy nuclear reactions in metals (30)

C. Rolfs (Bochum)

The puzzle of electron screening in fusion reactions (30)

Yeong E. Kim (Purdue University)

Quantum many-body theory of low energy nuclear reaction processes in matter (30)

G.K. Hubler (U.S. Naval Research Laboratory)

Report on several on-going low energy nuclear reaction projects at NRL (20)

Il-Tong Cheon (The Korean Academy of Science and Technology)

Modification of the nuclear lifetime (20)

T. Ohtsuki (Tohoku)

Life-time measurement of ^{7}Be in the different chemical forms (20)

T. Sawada (Nihon University)

A rational example of the nuclear fusion reaction at extemely low energy (20)

— Banquet (19:00-21:00) —

November 15 (Saturday)

XIV. Super Heavy Elements I (9:00-10:30)

Chairperson: A. Iwamoto (JAERI)

V. Utyonkov (JINR)
Synthesis of superheavy nuclei in ^{48}Ca-induced reactions (30)

D. Fabris (Padova)
Dynamical effects in the super-heavy mass region (20)

Y. Abe (YITP)
Theoretical predictuions of cross-sections of the super-heavy elements (20)

C. Rummel (Technische Universitaet Muenchen)
Nuclear quantum transport for barrier problems (20)

— Coffee Break (10:30-10:50) —

XV. Super Heavy Elements II (10:50-12:00)

Chairperson: D.M. Brink (Oxford)

F. Hanappe (Universite Libre de Bruxelles)
Capture and dissipation in heavy ion induced reactions (30)

Y. Aritomo (University of Tokyo)
Problems of dynamical calculation for synthesis of superheavy elements (20)

T. Asano (Konan University)
Dynamical calculation of multi-modal nuclear fission of fermium isotopes (20)

XVI. Summary (12:00-12:30)

Chairperson: D.M. Brink (Oxford)

A.B. Balantekin (University of Wisconsin)
Summary talk (30)