

Workshop Schedule

Sunday	May 25th	
08.00pm	Informal welcome dinner: Ristorante-Pizzeria ALLA MOSTRA, Trento	
Monday	May 26th	
09.00am	Arrival and registration	
	Chairperson: Paulo Gomes	
09.30am	Mahananda Dasgupta (ANU, Australia)	“Dynamics and time-scales in reactions with weakly bound nuclei”
10.30am	Coffee	
11.00am	Pierpaolo Figuera (INFN-LNS Catania, IT)	“Collisions around the Coulomb barrier induced by halo and/or weakly bound nuclei: Results at INFN-LNS Catania”
12.00pm	Alinka Lepine-Szily (USP, Brazil)	“Recent results on reactions with radioactive beams at RIBRAS”
1.00pm	Lunch at ECT*	
	Chairperson: Andrea Vitturi	
02.30pm	Marco Mazzocco (Padova U, IT)	“Reaction dynamics for the system $7\text{Be} + 58\text{Ni}$ at near-barrier energies”
03.30pm	Coffee	
04.00pm	Paulo Gomes (Fluminense U, Brazil)	“Nuclear and Coulomb breakup of 6Li at near-barrier energies: their interference and effects on fusion”
05.00pm	Arturo Gomez-Camacho (ININ, Mexico)	“CDCC study of the effect of resonances of 6Li on breakup and elastic scattering”
06.00pm	Alexis Diaz-Torres (ECT*, IT)	“Role of the Coulomb-nuclear interference in the elastic scattering of halo nuclei”
07.00pm	Dinner at ECT*	
Tuesday	May 27th	
	Chairperson: Jeff Tostevin	
09.30am	Pierre Descouvemont (ULB, Belgium)	“A microscopic version of CDCC”
10.30am	Coffee	
11.00am	Antonio M. Moro (Sevilla U, Spain)	“Dynamic core excitation effects in reactions with exotic nuclei”
12.00pm	Jose A. Lay-Valera (Padova U, IT)	“Core excitation in breakup reactions: semi-microscopic folding models for the structure of halo nuclei”
01.00pm	Lunch at ECT*	
	Chairperson: Horst Lenske	

02.30pm	Ricardo A. Broglia (Milan U, IT)	“Pairing in nuclei with Cooper-pair transfer”
03.15pm	Enrico Vigezzi (INFN Milan, IT)	“Absolute cross sections for two-nucleon transfer reactions”
04.00pm	Coffee	
04.30pm	Francisco Barranco (Sevilla U, Spain)	“Role of core ground-state correlations in one-particle transfer reactions”
05.15pm	Andrea Vitturi (Padova U, IT)	“Pairing interaction and transfer reactions”
06.00pm	Guillaume Scamps (GANIL, France)	“Influence of pairing on nuclear reactions”
07.30pm	Dinner at Restaurant LA BARACCA, near the ECT*	
Wednesday	May 28th	
	Chairperson: Gurgen Adamian	
09:30am	David Hinde (ANU, Australia)	“Quasi-fission reaction dynamics observables”
10.30am	Coffee	
11.00am	Katsuhisa Nishio (JAEA, Japan)	“Heavy-ion fusion and fission studies at JAEA”
12.00pm	Walter Loveland (ONID, USA)	“Uncertainties in heavy-ion fusion reaction studies”
01.00pm	Lunch at ECT*	
	Chairperson: David Hinde	
02.30pm	ECT* Colloquium: Sigurd Hofmann (GSI, GE)	“Research on super-heavy nuclei”
03.30pm	Coffee	
04.00pm	Sophie Heinz (GSI, GE)	“Multi-nucleon transfer reactions: A new way to exotic nuclei?”
05.00pm	Nikolai Antonenko (JINR Dubna, RUS)	“Role of structure of heaviest nuclei in their production”
08.00pm	Dinner at Hotel America, Trento	
Thursday	May 29th	
	Chairperson: Mahananda Dasgupta	
09.30am	Alberto Stefanini (INFN-Legnaro, IT)	“Transfer couplings and the hindrance phenomenon in deep sub-Coulomb heavy-ion fusion”
10.30am	Coffee	
11.00am	Vazgen Sargsyan (JINR Dubna, RUS)	“The influence of the neutron-pair transfer on fusion”
12.00pm	Giovanna Montagnoli	“From fusion hindrance to oscillations in

	(Padova U & INFN Padova)	the $^{28}\text{Si} + ^{28}\text{Si}$ system”
01.00pm	Lunch at ECT*	
	Chairperson: Nikolai Antonenko	
02.30pm	Shan-Gui Zhou (ITP Beijing, China)	“Langevin dynamics in nuclear fusion emerging from quantum molecular dynamics simulations”
03.30pm	Coffee	
04.00pm	Eryk Piasecki (Warsaw U, Poland)	“Weak channels and barrier distributions”
05.00pm	Gurgen Adamian (JINR Dubna, RUS)	“Derivation of capture and reaction cross sections from elastic and quasi-elastic back-scattering data”
08.00pm	Workshop Dinner at Restaurant ORSO GRIGIO, Trento	
Friday	May 30th	
	Chairperson: Shan-Gui Zhou	
9.00am	Horst Lenske (Justus-Liebig U, GE)	“Spectroscopy at the particle threshold”
9.45am	Lorenzo Fortunato (Padova U, IT)	“Low-lying continuum states in ^6He ”
10.30am	Coffee	
11.00am	Simone Bottoni (INFN Milan, IT)	“Nuclear structure studies with heavy-ion transfer reactions: present status and perspectives with stable and RIBs”
11.45am	Lorenzo Corradi (INFN-Legnaro, IT)	“Pair correlations in heavy-ion transfer reactions”
01.00pm	Close of Workshop, Lunch at ECT* and Farewells	
08.00pm	Dinner at Ristorante-Pizzeria ALLA MOSTRA, Trento	



THE ECT* COLLOQUIUM

RESEARCH ON SUPERHEAVY NUCLEI

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Darmstadt, Germany**



Nuclear theory predicts an 'island of stability' for nuclei far beyond the naturally occurring isotopes. In particular, the nuclear shell model calculates that these nuclei should be located in a region with closed shells for the protons at $Z = 114, 120$ or 126 and for the neutrons at $N = 184$. The outstanding aim of experimental investigations is the exploration of this region of spherical 'Super-Heavy Nuclei' (SHN).

Experimental methods are described, which allowed for the identification of elements 107 to 112 at GSI in Darmstadt and of 113 to 118 at FLNR in Dubna. Systematic studies of heavy ion reactions for the synthesis of SHN revealed production cross-sections which reached values down to one picobarn and even below for the heaviest species. The measured decay properties of the new isotopes are dominated by alpha emission, not fission. Decay properties as well as reaction cross-sections are compared with results of theoretical investigations.

Finally, plans are presented for the further development of the experimental set-ups. The application of new techniques, as for instance the precise mass measurement using ion traps, will provide additional information on the properties of the produced nuclei. At increased sensitivity, the detailed exploration of spherical SHN will continue, after first steps on the island of SHN were made in recent years.



Where? Rustico at the ECT*, Villa Tambosi, Villazzano (TN)

When? Wednesday, May 28, 2014, at 2:30pm



<http://www.ectstar.eu/node/780>