

REPORT DOCUMENTATION PAGE

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13. SUPPLEMENTARY NOTES					
14. ABSTRACT The ISSPIC10 meeting took place in Atlanta Georgia, October 11-15, 2000, at the Georgia World Congress Center. The meeting attracted over 300 participants, who came from all over the world (over 60% of the participants came from Europe and Asia). The participants in the meeting were comprised of scientists from academia, and from industrial and government laboratories, and a large fraction of the attendees were graduate students and post-graduate fellows in the initial stages of their career. The registration fee for the conference was \$410, with a reduced fee of \$270 for students. The Grant from the AFOSR partially allowed us to reduce the registration fee for students, which encouraged their participation.					
15. SUBJECT TERMS Clusters, Nano-technology, spectroscopy, International Symposium					
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FINAL REPORT

AFOSR GRANT NO. F49620-00-1-0293

**Support of the ISSPIC10 Conference
10th International Symposium of Small Particles and Inorganic
Clusters**

Prepared by Uzi Landman

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The ISSPIC10 meeting took place in Atlanta Georgia, October 11-15, 2000, at the Georgia World Congress Center. The meeting attracted over 300 participants, who came from all over the world (over 60% of the participants came from Europe and Asia). The participants in the meeting were comprised of scientists from academia, and from industrial and government laboratories, and a large fraction of the attendees were graduate students and post-graduate fellows in the initial stages of their career. The registration fee for the conference was \$410, with a reduced fee of \$270 for students. The Grant from the AFOSR partially allowed us to reduce the registration fee for students, which encouraged their participation.

The meeting was extremely successful with over 40 oral presentations, and over 350 posters that were presented in two poster sessions (2 days each). The oral and poster presentations were of very high technical level, and they focused on critical issues in the rapidly advancing field of clusters and nano-scale science and technology.

We attach in the following: (I) material from the website of the meeting, (II) the scientific program, and (III) the preface and list of papers which will be published as a special issue of *The European Journal D*, with Constantine

Yannouleas and Uzi Landman (Georgia Tech) as guest editors (the completed manuscripts have been sent to the publisher in June, and they are now being prepared for publication).

ISSPIC10 Conference Schedule

Georgia World Congress Center
Atlanta, GA, October 11-15, 2000

Wednesday, October 11

07:30 – 09:00 Registration
09:00 – 09:10 Opening Remarks, Gary B. Schuster, Dean COS Georgia Tech

Session W-I *Dedicated to the memory of W. D. Knight*

Chair: **U. Landman**

09:10 – 09:30 *In memorium* W. A. de Heer & V. Kresin
09:30 – 10:10 WI.1 **T. P. Martin** "Virus-like clusters of atoms"
MPI, Stuttgart, Germany
10:10 – 10:50 WI.2 **R. S. Berry** "Connecting cluster dynamics and
University of Chicago, USA protein folding"
10:50 – 11:15 **Break**

Session W-II

Chair: **O. Chesnovsky**

11:15 – 11:55 WII.1 **W. C. Lineberger** "The cage effect revisited in the gas
JILA & University of phase:
Colorado, USA solvent induced chemistry"
11:55 – 12:35 WII.2 **R. N. Compton** "Multipole-bound molecular anions"
University of Tennessee, USA
12:35 – 12:55 WII.3 **K. H. Bowen** "The insulator-to-metal transition in
Johns Hopkins University, magnesium clusters: a negative ion
USA photoelectron spectroscopic study of
magnesium cluster anions"
12:55 – 14:30 **Lunch break**

Session W-III

Chair: **L.J. de Jongh**

14:30 – 15:10 WIII.1 **K. Takayanagi** "Integral and fractional conductance
Tokyo Institute of quantization in nanowires at quantum
Technology, Japan point contacts"
15:10 – 15:50 WIII.2 **J. van Ruitenbeek** "Shell structure in alkali metal
Leiden University, nanowires"
Netherlands
15:50 – 16:10 WIII.3 **D. Ugarte** "Structural and Electrical properties of
LNLS, Campinas, Brazil atomic-scale gold wires generated by
mechanical stretching"
16:10 – 16:40 **Break**

Session W-IV

Chair: **T. Kondow**

16:40 – 17:20 WIV.1 **S. Nagel** "Snapoff, selective withdrawal and
University of Chicago, USA encapsulation: the role of singularities
in free surface flows"
17:20 – 17:40 WIV.2 **M. Moseler** "Nanojets"
Georgia Institute of
Technology, USA

17:40 – 19:45 **Dinner break // setup posters for Poster Session I**

19:45 – 20:30 **Reception**
20:30 – 23:00 **Poster session I**

20:30 – 23:00

Poster session I

next day

ISSPIC10 Conference Schedule

Georgia World Congress Center
Atlanta, GA, October 11-15, 2000

Thursday, October 12

Session T-I

Chair: **M.A. El-Sayed**

- | | | | |
|---------------|------|--|---|
| 08:30 – 09:10 | TI.1 | L. Wöste
Free University Berlin, Germany | "Real-time analysis and control of intramolecular dynamics in small aggregates" |
| 09:10 – 09:50 | TI.2 | V. Bonacic-Koutecký
Humbolt University Berlin, Germany | "Theoretical exploration of ultrafast spectroscopy of small clusters" |
| 9:50 – 10:20 | | Break | |

Session T-II

Chair: **O. Echt**

- | | | | |
|---------------|-------|--|---|
| 10:20 – 11:00 | TII.1 | A. W. Castleman
Pennsylvania State University, USA | "An ultrafast look at reaction dynamics in clusters" |
| 11:00 – 11:20 | TII.2 | B. v. Issendorff
Freiburg University, Germany | "Electron emission from highly excited sodium clusters" |

11:20 – 14:30 **Lunch break & Poster session I**
14:30 – 14:45 **Poster I -removal**

Session T-III

Chair: **H. Haberland**

- | | | | |
|---------------|--------|--|---|
| 14:45 – 15:25 | TIII.1 | F. Vallee
CNRS, Ecole Polytechnique
Palaiseau, France | "Ultrafast electron interactions in noble metal clusters" |
| 15:25 – 16:05 | TIII.2 | K. H. Meiwes-Broer
University of Rostock, Germany | "Clusters in intense laser fields" |
| 16:05 – 16:35 | | Break | |

Session T-IV

Chair: **H. Häkkinen**

- | | | | |
|---------------|-------|--|---|
| 16:35 – 16:55 | TIV.1 | S. Link
Georgia Institute of Technology, USA | "Interesting properties of precious metals confined in time and nanometer length scale of different shapes" |
| 16:55 – 17:15 | TIV.2 | J. Belloni
CNRS, University Paris-Sud, France | "Enhanced yield of photoinduced silver clusters in doped photographic emulsions" |
| 17:15 – 17:55 | TIV.3 | K. Mäder
Hoffmann-Laroche, Basle, Switzerland | "Colloidal drug carriers — an overview" |
| 17:55 – 20:00 | | Dinner break // setup posters for Poster Session II | |

20:00 – 23:00 **Poster session II**

[previous day](#) [next day](#)

ISSPIC10 Conference Schedule

Georgia World Congress Center
Atlanta, GA, October 11-15, 2000

Friday, October 13

Session F-I

Chair: **D. Davidovic**

- | | | | |
|---------------|------|--|--|
| 08:30 – 09:10 | FI.1 | L. Kouwenhoven
Delft University, Netherlands | "Quantum dots as artificial atoms and magnetic impurities" |
| 09:10 – 09:50 | FI.2 | C. Yannouleas
Georgia Institute of Technology, USA | "Electron molecules in artificial atoms" |
| 9:50 – 10:20 | | Break | |

Session F-II

Chair: **W.A. de Heer**

- | | | | |
|---------------|-------|---|--|
| 10:20 – 11:00 | FII.1 | R. Ashoori
Massachusetts Institute of Technology, USA | "Using single electrons to image potentials inside semiconductors" |
| 11:00 – 11:40 | FII.2 | M. Manninen
University of Jyvaskyla, Finland | "Magnetic properties of quantum dots & rings" |

11:40 – 14:45

Lunch break & Poster session II

Session F-III

Chair: **I. Rabin**

- | | | | |
|---------------|--------|--|---|
| 14:45 – 15:25 | FIII.1 | M. A. Duncan
University of Georgia, Athens, USA | "IR-REMPI spectroscopy of gas-phase metal-carbide clusters" |
| 15:25 – 16:05 | FIII.2 | L.-S. Wang
Washington State University & PNNL Richland, USA | "Probing the electronic structure of clusters using photoelectron spectroscopy" |
| 16:05 – 16:25 | | Poster removal (store poster material in the meeting room) | |
| 16:30 | | Bus departure for the Excursion to Stone Mountain
(Return to hotels about 11:00) | |

previous day next day

ISSPIC10 Conference Schedule

Georgia World Congress Center
Atlanta, GA, October 11-15, 2000

Saturday, October 14

Session SA-I

Chair: **E. Campbell**

08:30 – 09:10	SAI.1	Ph. Avouris IBM Watson Research Center, USA	"Carbon nanotubes: electrical properties and devices"
09:10 – 09:50	SAI.2	C. Colliex CNRS, University Paris-Sud, France	"Electron microscopy and spectroscopy on single nanotubes"
9:50 – 10:10	SAI.3	P. Poncharal University of Montpellier, France	"Probing single nanotube properties with in-situ TEM measurements"
10:10 – 10:40		Break	

Session SA-II

Chair: **A. Rosen**

10:40 – 11:20	SAII.1	M. Haruta Osaka Nat. research Institute, AIST, MITI, Japan	"Remarkable structure sensitivity in the catalysis of gold nanoparticles"
11:20 – 12:00	SAII.2	U. Heiz University of Lausanne, Switzerland	"Nanocatalysis: tuning efficiency and selectivity, atom by atom"
12:00 – 12:20	SAII.3	C. R. Henry CRNS Campus de Luminy, Marseille, France	"Size and shape effects in the reduction of NO by CO on Pd clusters supported on MgO (100)"
12:20 – 14:00		Lunch break	

Session SA-III

Chair: **R.L. Whetten**

14:00 – 14:40	SAIII.1	P. Alivisatos University of California, Berkeley, USA	"Electrical characteristics of colloidal semiconductor nanorod/polymer composites"
14:40 – 15:20	SAIII.2	D. J. Schiffrin University of Liverpool, United Kingdom	"From structure to function in organised nanoparticle systems"
15:20 – 16:00	SAIII.3	U. Banin Hebrew University, Jerusalem, Israel	"Combined optical and tunneling spectroscopy of semiconductor nanocrystals"
16:00 – 16:30		Break	

Session SA-IV

Chair: **J. Buttet**

16:30 – 16:50	SAIV.1	T. Telem-Shafir Tel Aviv University, Israel	"Long-range order of gold nanorods on silicon"
16:50 – 17:30	SAIV.2	W. Harbich EPFL Lausanne, Switzerland	"Structure and thermal stability of monodispersed Ag clusters on Pt(111)"
17:30 – 18:10	SAIV.3	C. Bréchnac CNRS University d'Orsay, France	"Control of structure and morphology of nanoscale islands from cluster beam deposition"
18:10 – 18:30	SAIV.4	L. Bolotov JRCAT Tsukuba, Japan	"Electronic properties of assembled islands of hydrogen-saturated silicon"

JRCAT Tsukuba, Japan

islands of hydrogen-saturated silicon
clusters on Si(111)-(7x7) surfaces
studied by scanning tunneling
spectroscopy"

previous day next day

ISSPIC10 Conference Schedule

Georgia World Congress Center
Atlanta, GA, October 11-15, 2000

Sunday, October 15

Session SU-I

Chair: **V. Kresin**

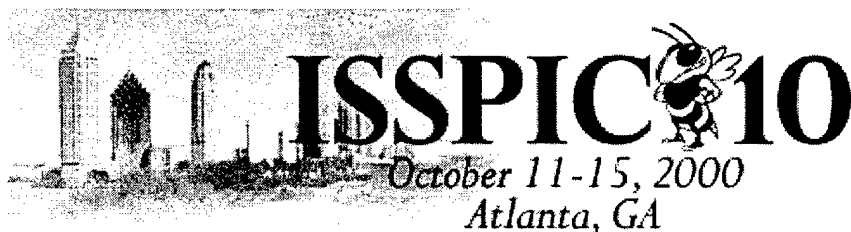
08:30 – 09:10	SUI.1	G. Scoles Princeton University, USA	"Liquid helium clusters as cool nanomatrices for infrared spectroscopy"
09:10 – 09:30	SUI.2	C. P. Schulz MBI, Berlin, Germany	"Short time dynamics of potassium clusters on the surface of superfluid helium droplets"
09:30 – 09:50	SUI.3	U. Even Tel Aviv University, Israel	"Spectroscopy of small He clusters on aromatic molecules"
09:50 – 10:30	SUI.4	R. E. Miller University of North Carolina, USA	"Liquid He nano droplets as a new growth medium: kinetic control of cluster growth"
10:30 – 11:00		Break	

Session SU-II

Chair: **C. Bréchnac**

11:00 – 11:20	SUII.1	P. Dugourd CNRS University of Lyon, France	"Electric dipole polarizability of one excess-electron alkali-halide clusters"
11:20 – 11:40	SUII.2	L.F. Dahl University of Wisconsin-Madison, USA	"Nanosized homometallic/heterometallic carbonyl clusters in the 21st century"
11:40 – 12:20	SUII.3	J. Jortner Tel Aviv University, Israel	<i>Conference summary</i>
12:20		<i>Conference adjourns</i>	

[previous day](#)

**New Addition:**

Conference Site
Transportation
Program
Posters & Manuscripts

Celebrate the tenth jubilee of ISSPIC
The original conference on the
Science of Nanoparticles and Nanosystems

Program
Posters & Manuscripts
Transportation
Conference Site
Second Circular
Registration Form
Abstract Preparation and
Submission Instructions
Hotel Accommodations
Information
Organizing & Advisory
Committees
Calendar
Atlanta Map
Contact
(for sharing hotel room)
Conference E-Mail
ISSPIC 10 Home

The ISSPIC conference started as an international symposium on small particles and inorganic clusters in 1976 and has evolved into a leading international nanoscience conference. The millennium year coincides with the tenth jubilee of this conference and with the announcement of the National Nanotechnology Initiative. The symposia topics present a balanced overview of new results, emerging trends and perspectives in the science of nanoparticles, and nanoscale systems. The conference provides an interdisciplinary forum for presentation and discussion of fundamental and technological developments.

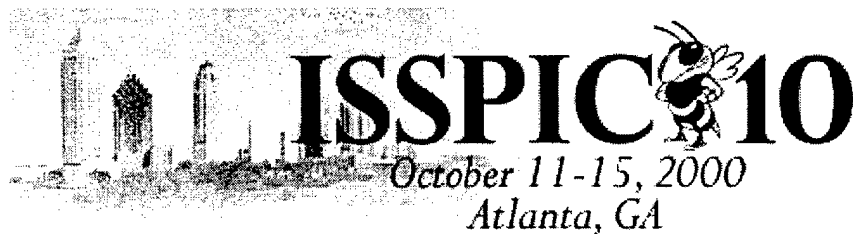
Confirmed Speakers

<u>P. Alivisatos</u>	<u>A.W. Castleman</u>	<u>J. Jortner</u>	<u>D.J. Schiffrin</u>
<u>R.C. Ashoori</u>	<u>C. Colliex</u>	<u>C. Lineberger</u>	<u>G. Scoles</u>
<u>Ph. Avouris</u>	<u>R. Compton</u>	<u>K. Maedar</u>	<u>K. Takayanagi</u>
<u>U. Banin</u>	<u>M. A. Duncan</u>	<u>M. Manninen</u>	<u>J. van Ruitenbeek</u>
<u>R.S. Berry</u>	<u>M. Haruta</u>	<u>T.P. Martin</u>	<u>F. Vallee</u>
<u>V. Bonacic-</u>	<u>W. Harbich</u>	<u>K-H. Meiwes-Broer</u>	<u>L-S. Wang</u>
<u>Koutecky</u>	<u>U. Heiz</u>	<u>R.E. Miller</u>	<u>L. Woeste</u>
<u>C. Brechignac</u>	<u>L. Kouwenhoven</u>	<u>S.R. Nagel</u>	<u>C. Yannouleas</u>

Symposia

Nano-crystals and self-assembly	Structure and Thermodynamics of clusters
Structure and conductance of nanowires	Helium clusters and spectroscopy
Carbon nanotubes	Nanoparticle-surface interactions and
Nanodrops and jets	Cluster deposition
Nanoparticles in medicine and biology	Charged clusters and
Nanoparticle reactivity and nano-catalysis	Photoelectron spectroscopy
Two-dimensional quantum dots	Fast laser spectroscopy and dynamics
Nanoparticles in atmospheric science	

For further information go to the
Second Circular

**New Addition:**

Conference Site
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Posters & Manuscripts

*Celebrate the tenth jubilee of ISSPIC
The original conference on the
Science of Nanoparticles and Nanosystems*

[Program](#)
[Posters & Manuscripts](#)
[Transportation](#)
[Conference Site](#)
[Second Circular](#)
[Registration Form](#)
[Abstract Preparation and
Submission Instructions](#)
[Hotel Accommodations
Information](#)
[Organizing & Advisory
Committees](#)
[Calendar](#)
[Atlanta Map](#)
[Contact](#)
(for sharing hotel room)
[Conference E-Mail](#)
[ISSPIC 10 Home](#)

Second Circular

CALL FOR ABSTRACTS AND REGISTRATION

(Updated June 21)

TO ACHIEVE MAXIMAL REPRESENTATION IN THE MEETING, PLEASE FORWARD THIS CIRCULAR TO INTERESTED COLLEAGUES AT AND OUTSIDE YOUR INSTITUTION.

Click Below to Download the Second Circular
Microsoft Word Format

The ISSPIC conference started as an international symposium on small particles and inorganic clusters in 1976 and has evolved into a leading international nanoscience conference. The millennium year coincides with the tenth jubilee of this conference and with the announcement of the National Nanotechnology Initiative. The symposia topics present a balanced overview of new results, emerging trends and perspectives in the science of nanoparticles, and nanoscale systems. The conference provides an interdisciplinary forum for presentation and discussion of fundamental and technological developments.

In this circular you will find a general description of the meeting, a planning calendar, [Registration Form](#), [Abstract Preparation and Submission Instructions](#), and [Hotel Accommodations Information](#) which we would like to ask you to complete and return.

MEETING DATES:

Wednesday, October 11 - Sunday, October 15, 2000

LOCATION:

Georgia World Congress Center (GWCC), Atlanta, GA

USA

SCOPE:

In keeping with the tradition of the ISSPIC meetings, the 10th anniversary symposium will be devoted to a broad and balanced overview of new results, emerging trends and perspectives pertaining to the experimental and theoretical investigations of the physics and chemistry of nanoscale systems, nanoparticles and small gas-phase and supported clusters and their assemblies. The Conference aims at providing an interdisciplinary forum for presentation and discussion of fundamental and methodological aspects as well as applications and technologically oriented developments.

SUGGESTED TOPICS INCLUDE:

- Electronic and structural properties of metal, semiconducting, insulating and molecular nanoscale materials systems;
- Electronic and vibrational excitations;
- Magnetism, superfluidity, superconductivity, metal-insulator transitions;
- Charging phenomena; collisions and fragmentation processes;
- Electron dynamics and time resolved spectroscopy; photochemical processes;
- Thermodynamics and phase transitions; mixed, layered and coated clusters;
- Free and supported clusters;
- Cluster-surface interactions;
- Tip-based and high-resolution spectroscopies;
- Chemical reactivity and nanocatalysis;
- Cluster deposition;
- Nucleation and growth of clusters and cluster-based thin film;
- Self-assembled structures;
- Nanocrystals and nanoscale cluster-based materials;
- Quantum dots and wires;
- Fullerenes, nanotubes, cage molecules.

Additionally, contributions are welcomed on cluster-related issues in other fields, such as atmospheric and environmental science, astrophysics, biomolecules, drugs, quantum and molecular devices.

FORMAT:

The scientific program will consist of plenary sessions where invited lectures and oral contributions selected from the submitted abstracts, will be presented. In addition there will be two poster sessions, with each scheduled both during the day time and at the evening for optimal viewing. The meeting will commence on Wednesday, October 11 at 9 a.m. and it will close on Sunday, October 15 at 2 p.m.

PROGRAM:

- **Nano-crystals and self-assembly**
- **Structure and conductance of nanowires**
- **Carbon nanotubes**
- **Nanoparticles in medicine and biology**

- Nanoparticle reactivity and nano-catalysis
- Two-dimensional quantum dots
- Nanoparticles in atmospheric science
- Structure and Thermodynamics of clusters
- Helium clusters and spectroscopy
- Nanoparticle-surface interactions and cluster deposition
- Fast laser spectroscopy and dynamics
- Charged clusters and photoelectron spectroscopy

INVITED SPEAKERS (confirmed):

Allvisatos P. UC Berkeley, CA, USA
 Ashoori R.C. MIT, Cambridge, MA, USA
 Avouris Ph. IBM, Yorktown Heights, NY, USA
 Banin U. The Hebrew University, Jerusalem, Israel
 Berry R.S. University of Chicago, USA
 Bonacic-Koutecky V. Humboldt University, Berlin, Germany
 Brechignac C. CNRS, Orsay, France
 Castleman A.W. Jr. Penn State University, College Park, PA, USA
 Compton R. University of Tennessee, Knoxville, TN, USA
 Gerber G. University of Wurzburg, Germany
 Haruta M. ONRI, AIST, Ikeda, Japan
 Harbich W. EPFL, Lausanne, Switzerland
 Heiz U. Free University, Berlin, University of Lausanne, Switzerland
 Kouwenhoven L. Technical University of Delft, The Netherlands
 Jortner J. Tel Aviv University, Israel
 Lieber C.M. Harvard University, Cambridge, MA, USA
 Lineberger C. JILA, University of Colorado, Boulder, CO, USA
 Maedar K. Free University, Berlin, Germany/
 Hoffman-LaRoche, Basel, Switzerland
 Manninen M. University of Jyvaskyla, Finland
 Martin T.P. MPI, Stuttgart, Germany
 Meiwes-Broer K-H. University of Rostock, Germany
 Miller R.E. University of North Carolina, Chapel Hill, NC, USA
 Nagel S.R. University of Chicago, IL, USA
 Schiffrin D.J. University of Liverpool, United Kingdom
 Scoles G. Princeton University, Princeton, NJ, USA
 Takayanagi K. Tokyo Institute of Technology, Yokohama, Japan
 van Ruitenbeek J. University of Leiden, The Netherlands

Vallee F. Ecole Polytechnique, Palaiseau, France
 Wang L-S. PNL, Washington State University, Richland, WA, USA
 Woeste L. Free University, Berlin, Germany
 Yannouleas C. Georgia Institute of Technology, Atlanta, GA, USA

ABSTRACTS: The abstracts of contributions to the meeting should be submitted electronically no later than July 30, 2000. An abstract

should not exceed one letter size page (21.6 cm x 28 cm), typed in 12-point font, and allowing for 2.5 cm margins on all sides. The Abstracts should be camera - ready.

The abstracts will be accumulated into a Book of Abstracts which will be printed and distributed to the participants at the meeting. Additionally, an electronic version of the Abstract Book will be available at the symposium web page.

Abstract submission must be made through the conference website at http://www.physics.gatech.edu/isspic10/ISSPIC10_abstract.html

HOT TOPICS: From the submitted abstracts, 10 to 15 contributions will be selected for oral presentation. The authors of these will be notified by August 20.

POSTERS: Participants are invited to prepare posters of their contributions, once they got notification of receipt/acceptance (but not selected for oral presentation). Details about poster preparation will be given in due course.

PROCEEDINGS: The proceedings of ISSPIC10 will be published as a regular volume of a scientific journal. Several options are being considered at this time, and further information pertaining to preparation of manuscripts for the proceedings will become available to registered participants by August 20.

CONFERENCE REGISTRATION: The conference fee is \$410 for registration prior to July 30, 2000, or \$270 for students. After this deadline, the regular fee will be \$450, or \$300 for students. The conference fee covers:

- entry to the scientific program,
- one copy of the ISSPIC10 Book of Abstracts,
- reception on Wednesday evening,
- all coffee-breaks,
- the conference outing on Friday (October 13) and banquet.

The fee does not cover ordinary meals nor the conference proceedings. A fee of \$80 will apply to accompanying persons who wish to participate in the Conference outing on Friday.

TO BE REGISTERED TO THE CONFERENCE PLEASE COMPLETE THE REGISTRATION FORM EVEN IF YOU HAD PRELIMINARY REGISTERED

Registration to the conference can be made only through the conference website at <http://www.physics.gatech.edu/isspic10/registration2.html>

SYMPOSIUM SITE AND ATLANTA: The conference will be held at the Georgia World Congress Center (GWCC), located in the City of Atlanta. It can be reached from the different hotels by foot or by local transportation.

For a map of Atlanta, please go to <http://www.physics.gatech.edu/isspic10/atlantamap.html>

The capital of Georgia, Atlanta is the premier transportation, commercial, financial, and cultural center in the Southeast. As of 1992, Atlanta was ranked as the 13th largest metropolitan area in the United States, with a total population of 3,142,857. In 1996, Atlanta was the host city for the Centennial Olympic Games, and in 1999, it hosted the Centennial Meeting of the American Physical Society.

Atlanta is located in north central Georgia, in the foothills of the Blue Ridge Mountains. The city's relatively high elevation (1,050 feet above sea level) yields a moderate climate. The average daily temperature for the month of October is a pleasant 65 degrees Fahrenheit (18 Celsius).

Atlanta's Hartsfield International Airport is among the nation's largest, and direct flights connect Atlanta to many cities worldwide.

Recreational and cultural opportunities suiting a wide range of tastes are available in Atlanta and its environs. These include classical and contemporary music, theater, fine dining, the Carter Center, the M.L. King Center, the Fabulous Fox Theater, the Atlanta Zoo, the Stone Mountain Park, sports events, and many historic landmarks from the American Civil War and the Civil Rights era.

For information about MARTA (Metropolitan Atlanta Rapid Transportation Authority), please go to <http://www.itsmarta.com>. There is a Marta station at the airport.

ACCOMMODATIONS: Hotels within a price range of \$60 to \$185 (plus 6% tax) per night have been negotiated, and blocks of rooms have been set aside.

Participants should make their hotel reservations by contacting any of the hotels listed below.

***** All Reservations Should be Made by Phone or Fax and in Making Your Reservation You Should State That You Are With The GEORGIA TECH /ISSPIC10 CONFERENCE*****

To obtain the prices listed below hotel reservation must be made by September 1, 2000.

ISSPIC10 HOTELS

- 1) Super 8 Hotel
111 Cone Street
Atlanta, GA 30303
Phone: 404-524-7000
Fax: 404-659-7521
100 rooms - \$60 Single/Double
- 2) Days Inn-Downtown
300 Spring Street
Atlanta, GA 30308
Phone: 404-523-1144
Fax: 404-522-1694
100 Rooms - \$65 Single/Double
- 3) Quality Hotel-Downtown
89 Luckie Street
Atlanta, GA 30303
Phone: 404-524-7991
Fax: 404-524-0672
50 Rooms - \$65 Single/Double
- 4) Hampton Inn & Suites
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50 Rooms - \$165 Single/Double
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To see a map of the area around the Georgia World Congress Center and the hotel locations, please go to the conference website at

<http://www.physics.gatech.edu/isspic10/atlantamap.html>.

SOCIAL PROGRAM: The conference outing will be held on Friday October 13, from 3:30 pm, to Stone Mountain Park, located 16 miles east of Atlanta and home of the world's largest relief carving on the world's largest mass of exposed granite. The outing will include a stroll in the park, a tour of the plantation, a banquet dinner, and a



laser show. Further information about the park can be found at:
<http://www.stonemountainpark.org>

CALENDAR: Updates and pertinent details will be placed periodically on the web site.

JULY 30, 2000 Deadline for Submission of Abstracts

JULY 30, 2000 Deadline for Early Registration Fees

SEPTEMBER 1, 2000 Deadline for Hotel Reservations

SEPTEMBER 1, 2000 Final Circular Sent to Registered Participants

OCTOBER 11, 2000 Opening of ISSPIC10 (9:00 AM)

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Preface

This special issue of *The European Journal D* contains papers presented at the 10th International Symposium on Small Particles and Inorganic Clusters, ISSPIC 10, which was held from October 11th to 15th, 2000, in Atlanta, Georgia, USA. The meeting was attended by over 300 scientists from all over the world, and in it 45 invited and hot-topic lectures were given, and 330 posters were presented. In keeping with the tradition of the ISSPIC meetings, the 10th anniversary symposium was devoted to a broad and balanced overview of new results, emerging trends and perspectives pertaining to the physics and chemistry of clusters. The meeting covered experimental and theoretical investigations of gas-phase and supported clusters, nanoscale cluster-based materials, and nanometer scale systems.

The sessions at ISSPIC 10 were organized as mini-symposia, and topics included: electronic and structural properties of clusters, charged clusters and photoelectron spectroscopy, fast laser spectroscopy and dynamics, cluster-surface interactions and cluster deposition, helium clusters and spectroscopy, structural evolution and thermodynamics of clusters, cluster reactivity and nano-catalysis, two-dimensional quantum dots, nano-crystals and self-assembly, mechanical, electronic and transport properties of carbon nanotubes, structure and conductance properties of nanowires, formation and stability of droplets and jets, and medical applications of colloidal clusters. Most importantly, the symposium provided an interdisciplinary forum for presentation and discussion of fundamental and methodological aspects as well as technologically oriented developments.

The opening session of ISSPIC 10 was dedicated to the memory of Professor Walter D. Knight, a pioneer in the field of clusters. The work of Walter and his research group at Berkeley on electronic shells in metal clusters opened new avenues in cluster science and contributed significantly to the rapid growth of this field.

We would like to take this opportunity to gratefully acknowledge the financial assistance extended to the symposium by the Georgia Institute of Technology and by the United States Air Force Office of Scientific Research. We also thank the participants for contributing to the success of ISSPIC 10 through communicating their latest scientific results during the meeting and via the papers appearing in these proceedings.

Uzi Landman, *Co-Editor and Chairman of ISSPIC 10*
Constantine Yannouleas, *Co-Editor*

LIST OF ACCEPTED PAPERS FOR THE ISSPIC10 PROCEEDINGS

**GUEST EDITORS: Constantine Yannouleas and Uzi Landman
Atlanta, 26 April 2001**

- 1) A. Glotov, O. Knospe, R. Schmidt, and E.E. Campbell,
MOLECULAR FUSION OF FULLERENES
R: 02 October 2000 A: 18 December 2000
f3aec@fy.chalmers.se
- 2) P. Piquini and S. Guerini,
SYSTEMATIC STUDY OF SMALL B_N CLUSTERS
R: 02 October 2000 A: 12 January 2001
ppiquini@ccne.ufsm.br
- 3) E.E.B. Campbell, K. Hoffmann, and I.V. Hertel,
THE TRANSITION FROM DIRECT TO DELAYED IONIZATION OF C60
R: 20 October 2000 A: 15 January 2001
f3aec@fy.chalmers.se
- 4) C. Brechignac, Ph. Cahuzac, B. Concina, and J. Leygnier,
DOUBLY CHARGED CLUSTERS - NEUTRAL ATOM CHARGE
TRANSFER: THE ROLE OF THE COULOMBIC REPULSION
R: 24 October 2000 A: 08 January 2001
jerome.leygnier@lac.u-psud.fr
- 5) J. Kortus, M.R. Pederson, C.S. Hellberg, and S.N. Khanna,
DFT STUDIES OF THE MOLECULAR NANOMAGNET Fe8 AND THE V15
SPIN SYSTEM
R: 30 October 2000 A: 15 January 2001
kortus@dave.nrl.navy.mil
- 6) M. Vogel, K. Hansen, A. Herlert, and L. Schweikhard,
DECAY PATHWAYS OF SMALL GOLD CLUSTERS
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- 7) Y. Chushak and L.S. Bartell,
MOLECULAR DYNAMICS SIMULATIONS OF THE FREEZING OF GOLD
NANOPARTICLES
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chushak@umich.edu

- 8) J. Akola, K. Rytönen, and M. Manninen,
METALLIC EVOLUTION OF SMALL MAGNESIUM CLUSTERS
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j.akola@fz-juelich.de
- 9) P. Melinon, F. Tournus, B. Masenelli, A. Perez, M. Pellarin, J. Lerme, M. Broyer,
and B. Champagnon,
Si-C BONDING IN (C60)_nSi_m CLUSTERS
R: 15 November 2000 A: 12 January 2001
pmelinon@dpm.univ-lyon1.fr
- 10) H. Portales, L. Saviot, E. Duval, M. Gaudry, E. Cottancin, J. Lerme, M. Pellarin,
M. Broyer, B. Prevel, and M. Treilleux,
RESONANCE AND COMPOSITION EFFECTS ON THE RAMAN
SCATTERING FROM SILVER-GOLD ALLOY CLUSTERS
R: 16 November 2000 A: 29 January 2001
portales@pcml.univ-lyon1.fr
- 11) Yu.D. Glinka, A.S. Zyubin, A.M. Mebel, S.H. Lin, L.P. Hwang, and Y.T. Chen,
PHOTOLUMINESCENCE PROPERTIES OF SILICA-BASED MESOPOROUS
MATERIALS SIMILAR TO THOSE OF NANOSCALE SILICON
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glinka@po.iams.sinica.edu.tw
- 12) R. Parajuli, S. Matt, O. Echt, A. Stamatovic, P. Scheier, and T.D. Mark,
DECAY REACTIONS OF RARE GAS CLUSTER IONS: KINETIC ENERGY
RELEASE DISTRIBUTIONS AND BINDING ENERGIES
R: 20 November 2000 A: 01 February 2001
olof.echt@unh.edu
- 13) F. Duque, L.M. Molina, M.J. Lopez, A. Mananes, and J.A. Alonso,
ASSEMBLING OF HYDROGENATED ALUMINUM CLUSTERS
R: 21 November 2000 A: 19 February 2001
jaalonso@wamba.cpd.uva.es
- 14) M. Gaudry, J. Lerme, E. Cottancin, M. Pellarin, B. Prevel, M. Treilleux,
P. Melinon, J.-L. Rousset, and M. Broyer,
SIZE AND CONCENTRATION EFFECTS IN THE OPTICAL PROPERTIES
OF ALLOYED (AuxAg1-x)_n AND CORE-SHELL (NixAg1-x)_n EMBEDDED
CLUSTERS
R: 21 November 2000 A: 29 January 2001
mgaudry@lasim.univ-lyon1.fr

- 15) Y. Yamaguchi and J. Gspann,
LARGE-SCALE MOLECULAR DYNAMICS SIMULATIONS OF HIGH
ENERGY CLUSTER IMPACT ON DIAMOND SURFACE
R: 22 November 2000 A: 16 March 2001
yasutaka.yamaguchi@imt.fzk.de
- 16) V. Kasperovich, K. Wong, G. Tikhonov, and V.V. Kresin,
AN INELASTIC THRESHOLD IN ELECTRON-ALKALI CLUSTER
COLLISIONS
R: 24 November 2000 A: 14 January 2001
KRESIN@PHYSICS.USC.EDU
- 17) W.L. Zhou, E.E. Carpenter, J. Lin, A. Kumblar, J. Sims, and C.J. O'Connor,
NANOSTRUCTURES OF GOLD COATED IRON CORE-SHELL
NANOPARTICLES AND THE NANOBANDS ASSEMBLED UNDER
MAGNETIC FIELD
R: 29 November 2000 A: 29 March 2001
wzhou@uno.edu
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seifert@phys.uni-paderborn.de
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OBSERVATION OF MULTIPLY CHARGED SILVER-CLUSTER ANIONS
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alexander.herlert@uni-mainz.de
- 20) V.R. Palkar,
EFFICIENCY OF Pd IMPREGNATED SOL-GEL DERIVED gamma-
ALUMINA POROUS SPHERES AS CATALYST
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palkar@tifr.res.in
- 21) A. Wurl, M. Hyslop, S.A. Brown, B.D. Hall, and R. Monot,
STRUCTURE OF UNSUPPORTED BISMUTH NANOPARTICLES
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a.wurl@phys.canterbury.ac.nz
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- 23) C. Herwig and J.A. Becker,
GROWTH OF TELLURIUM CLUSTERS IN PRESENCE OF METAL
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- 24) V. Rodrigues and D. Ugarte,
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ugarte@lnls.br
- 25) F. Baletto, C. Mottet, and R. Ferrando,
NON-CRYSTALLINE STRUCTURES IN THE GROWTH OF SILVER
NANOCLUSTERS
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ferrando@fisica.unige.it
- 26) F. Uhlik, Z. Slanina, and E. Osawa,
C78 IPR FULLERENES: COMPUTED B3LYP/6-31G*//HF/3-21G
TEMPERATURE-DEPENDENT RELATIVE CONCENTRATIONS
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uhlik@sals.natur.cuni.cz
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FAR-INFRARED RESPONSE OF QUANTUM-DOT MOLECULES
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DFSLSC4@clust.uib.es
- 28) T. Jacob, B. Fricke, J. Anton, S. Varga, T. Bastug, S. Fritzsche, and W.-D. Sepp,
CLUSTER-EMBEDDING METHOD TO SIMULATE LARGE CLUSTER-
AND SURFACE PROBLEMS
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timojaco@physik.uni-kassel.de
- 29) N. Toshima, Y. Shiraishi, A. Shiotsuki, D. Ikenaga, and Y. Wang,
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CORE/SHELL STRUCTURED Pd/Pt BIMETALLIC NANOCLUSTERS
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toshima@ed.yama.sut.ac.jp
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ATOM/CLUSTER FOLLOWED BY ANIONIC OLIGOMERIZATION OF
VINYL MOLECULES
R: 29 November 2000 A: 19 February 2001
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PHASE BEHAVIOR OF ORGANIC-INORGANIC CRYSTAL
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kwankim@plaza.snu.ac.kr
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MAGNETIC EXCITATION OF FERROMAGNETIC DIMER MOLECULES
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oda@cphys.s.kanazawa-u.ac.jp
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ELECTRON CAPTURE IN THE ION-CLUSTER COLLISION: EFFECT OF
THE ELECTRONIC INTERACTION
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tarento@lps.u-psud.fr
- 34) J. Bosbach, C. Hendrich, T. Vartanyan, F. Stietz, and F. Trager,
SPECTRAL HOLE BURNING IN ABSORPTION PROFILES OF METAL
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stietz@physik.uni-kassel.de
- 35) G. Bour, A. Reinholdt, A. Stepanov, C. Keutgen, and U. Kreibig,
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YTTRIUM NANOPARTICLES
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giorah.bour@physik.rwth-aachen.de
- 36) R.E. Benfield, D. Grandjean, J.C. Dore, Z. Wu, M. Kroll, T. Sawitowski, and G. Schmid,
STRUCTURE OF METAL NANOWIRES IN NANOPOROUS ALUMINA
MEMBRANES STUDIED BY EXAFS AND X-RAY DIFFRACTION
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R.E.Benfield@ukc.ac.uk
- 37) D.J. Kenny, S.C. Weller, M. Couillard, R.E. Palmer, C.F. Sanz-Navarro, and
R. Smith,
MEASURING THE IMPLANTATION DEPTH OF SILVER CLUSTERS IN
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D.J.Kenny@bham.ac.uk

- 38) C. McGinley, S.Al. Moussalami, M. Riedler, M. Pflughofft, H. Borchert, M. Haase, A.R.B. de Castro, H. Weller, and T. Moller,
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PHOTOELECTRON SPECTROSCOPY
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mcginley@mail.desy.de
- 39) S. Varga, K. Bolton, H. Gronbeck, A. Snis, A. Rosen, and B. Fricke,
ASSESSING THE VALIDITY OF THEORETICAL RESULTS
R: 30 November 2000 A: 09 March 2001
varga@gsi.de
- 40) S. Tomita, J.S. Forster, P. Hvelplund, A.S. Jensen, and S.B. Nielsen,
HIGH ENERGY COLLISIONS OF PROTONATED WATER CLUSTERS
R: 30 November 2000 A: 24 January 2001
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- 41) M. Dubiel, S. Brunsch, W. Seifert, H. Hofmeister, and G.L. Tan,
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SPECTROSCOPY
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- 42) H. Hess, K.R. Asmis, T. Leisner, and L. Woste,
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PROBED BY NeNePo FEMTOSECOND PUMP-PROBE SPECTROSCOPY
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asmis@physik.fu-berlin.de
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RARE GAS DROPLETS
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rabin@fhi-berlin.mpg.de
- 44) M. Hyslop, A. Wurl, S.A. Brown, B.D. Hall, and R. Monot,
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m.hyslop@phys.canterbury.ac.nz

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POLARIZATION DEPENDENCE OF THE PERMANENT DEFORMATION
OF SILVER NANOPARTICLES IN GLASS BY ULTRASHORT LASER
PULSES
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g.seifert@physik.uni-halle.de
- 46) U. Busolt, E. Cottancin, L. Socaciu, H. Rohr, T. Leisner, and L. Woste,
DIFFUSION AND AGGREGATION OF Ag_n-CLUSTERS (n=2-9) ON HOPG
PROBED BY TWO-PHOTON-PHOTOEMISSION
R: 30 November 2000 A: 26 February 2001
ulrike.busolt@physik.fu-berlin.de
- 47) W. Christen and U. Even
COLLISION-INDUCED FRAGMENTATION AND NEUTRALIZATION OF
METHANOL CLUSTER CATIONS
R: 30 November 2000 A: 26 January 2001
christen@chemie.hu-berlin.de
- 48) K. Esfarjani, A.A. Farajian, F. Ebrahimi, and Y. Kawazoe,
TRANSPORT PROPERTIES OF A NANOTUBE-BASED TRANSISTOR
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k1@imr.edu
- 49) Ch. Becker, J. Gspann, and R. Kramer,
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AND NON-REACTIVE ACCELERATED CLUSTER EROSION
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Juergen.Gspann@imt.fzk.de
- 50) L. Bolotov, N. Uchida, and T. Kanayama,
ELECTRONIC PROPERTIES OF ASSEMBLED ISLANDS OF HYDROGEN
SATURATED SILICON CLUSTERS ON Si(111)-(7x7) SURFACES STUDIED
BY SCANNING TUNNELING SPECTROSCOPY
R: 30 November 2000 A: 09 March 2001
bolotov@jrcat.or.jp
- 51) S. Suzuki, H. Yamaguchi, T. Ishigaki, R. Sen, H. Kataura, W. Kratschmer, and
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TIME EVOLUTION OF EMISSION BY CARBON NANOPARTICLES
GENERATED WITH A LASER FURNACE TECHNIQUE
R: 30 November 2001 A: 16 March 2001
suzuki-shinzo@c.metro-u.ac.jp

- 52) T. Matsuse, T. Hama, H. Kaihatsu, N. Toyoda, and T. Takizawa,
ELECTRONIC STRUCTURES IN COUPLED TWO QUANTUM DOTS BY
3D-MESH HARTREE-FOCK-KOHN-SHAM CALCULATION
R: 30 November 2000 A: 16 March 2001
matsuse@jolie.shinshu-u.ac.jp
- 53) S. Pokrant and J.A. Becker,
MAGNETIZATION CURVES OF Dy_N CLUSTERS
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pokrant@polycnrs-gre.fr
- 54) D.F. Underwood, T. Kippeny, and S.J. Rosenthal,
CHARGE CARRIER DYNAMICS IN CdSe NANOCRYSTALS:
IMPLICATIONS FOR THE USE OF QUANTUM DOTS IN NOVEL
PHOTOVOLTAICS
R: 30 November 2000 A: 26 February 2001
dave.f.underwood@vanderbilt.edu
- 55) H. Ohtsuka, K. Hojou, H. Maeta, H. Otsu, H. Sugai, and H. Yamamoto,
RADIATION DEFECTS IN NANO-STRUCTURED MATERIALS
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ohtsuka@popsvr.tokai.jaeri.go.jp
- 56) F. Ding, G. Wang, S. Yu, J. Wang, W. Shen, and H. Li,
FORMATION AND STABILITY OF LARGE B₆₀ CLUSTERS WITH
ICOSAHEDRAL STRUCTURE
R: 30 November 2000 A: 19 February 2001
ghwang@nju.edu.cn
- 57) N. Fujima
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AND Fe CLUSTERS
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fujima@eng.shizuoka.ac.jp
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STRUCTURES AND ITS EVOLUTION OF Ba_n (n=2~14) CLUSTERS
R: 01 December 2000 A: 12 March 2001
gong@theory.iissp.ac.cn
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G. Holzhuter, J. Bansmann, and K.-H. Meiwes-Broer,
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R: 01 December 2001 A: 15 March 2001

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- 60) T. Kaambre, L. Qian, J.-E. Rubensson, J.-H. Guo, C. Sathe, J. Nordgren,
J.-P. Palmqvist, and U. Jansson,
STUDY OF OXYGEN-C60 COMPOUND FORMATION BY NEXAFS AND
RIXS
R: 04 December 2000 A: 12 March 2001
Tanel.Kaambre@fysik.uu.se
- 61) C. Bobbert and C.P. Schulz,
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CLUSTERS
R: 04 December 2000 A: 01 March 2001
cps@mbi-berlin.de
- 62) R.S. Berry, A. Fernandez, and K. Kostov,
CONNECTING CLUSTER DYNAMICS AND PROTEIN FOLDING
R: 04 December 2000 A: 12 March 2001
berry@uchicago.edu
- 63) A. Bartelt, S. Minemoto, C. Lupulescu, S. Vajda, and L. Woste,
CONTROL OF WAVEPACKET DYNAMICS IN MIXED ALKALI METAL
CLUSTERS BY OPTIMALLY SHAPED fs PULSES
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bartelt@physik.fu-berlin.de
- 64) F. Despa and R.S. Berry,
RELAXATION DYNAMICS IN THE PRESENCE OF UNEQUALLY SPACED
ATTRACTORS ALONG THE REACTION COORDINATE
R: 04 December 2000 A: 12 March 2001
berry@uchicago.edu
- 65) F. Despa and R.S. Berry,
ON THE PROXIMITY RELATION BETWEEN TWO SURFACE-MELTED
CLUSTERS INVOLVED IN INTER-CLUSTER MASS TRANSFER
R: 04 December 2000 A: 02 March 2001
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- 66) M. Manninen, M. Koskinen, S.M. Reimann, and B. Mottelson,
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- 67) M. Mertig, R. Wahl, M. Lehmann, P. Simon, and W. Pompe,
FORMATION AND MANIPULATION OF REGULAR METALLIC
NANOPARTICLE ARRAYS ON BACTERIAL SURFACE LAYERS:
AN ADVANCED TEM STUDY
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10, 14, 21, 29, 34, 35, 38, 41, 44, 45, 54, 56, 73, 20, 28, 65
(a total of 16 papers)

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75, 50, 85, 11, 13, 17, 31, 46, 49, 83, 55, 80, 67, 77, 84, 87

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