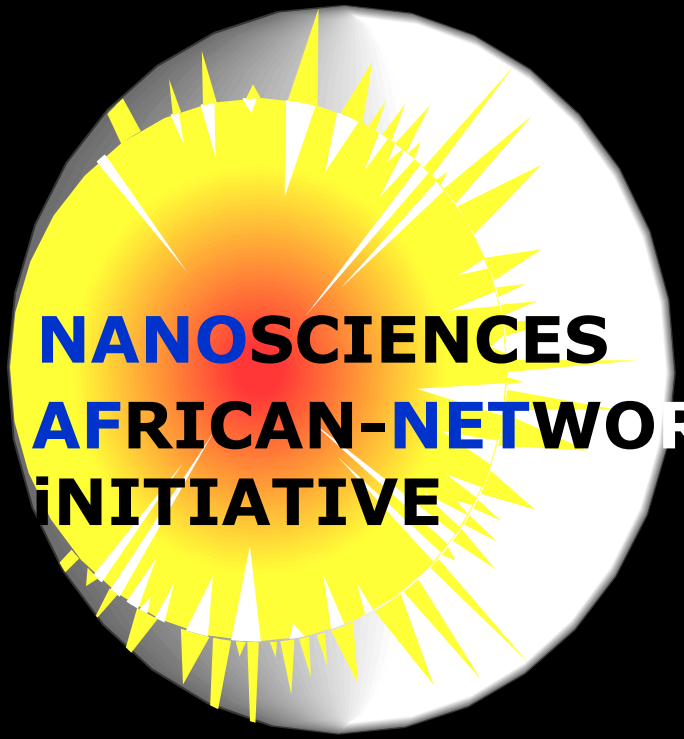
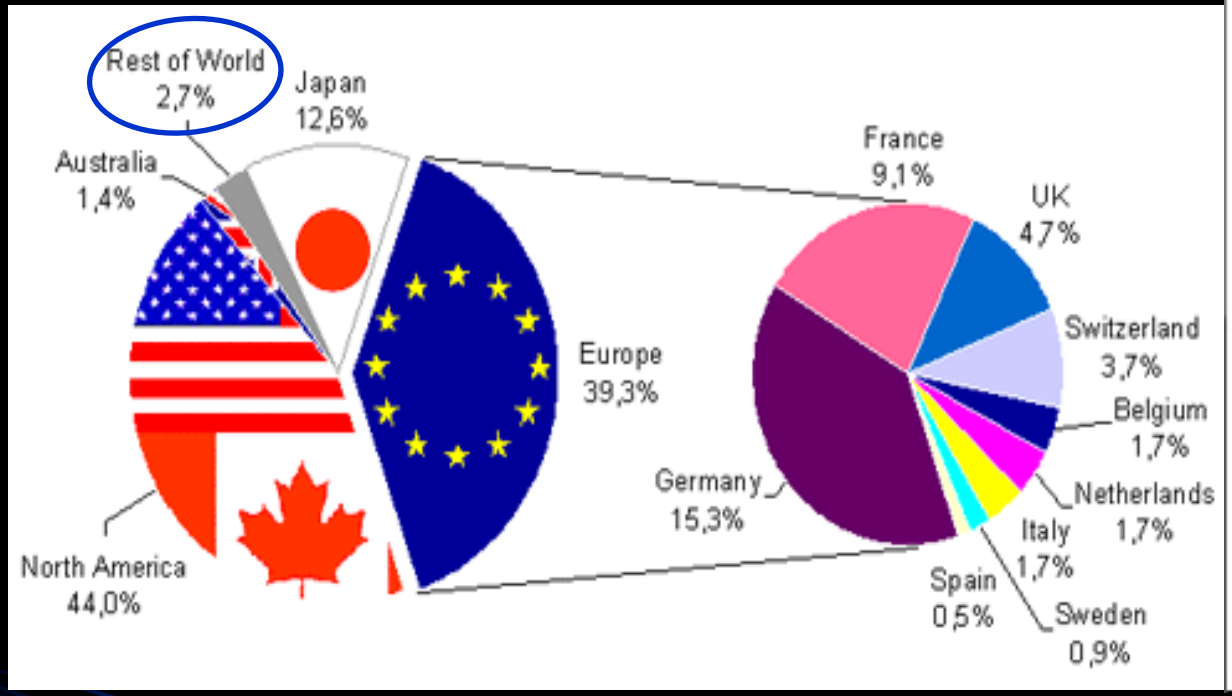
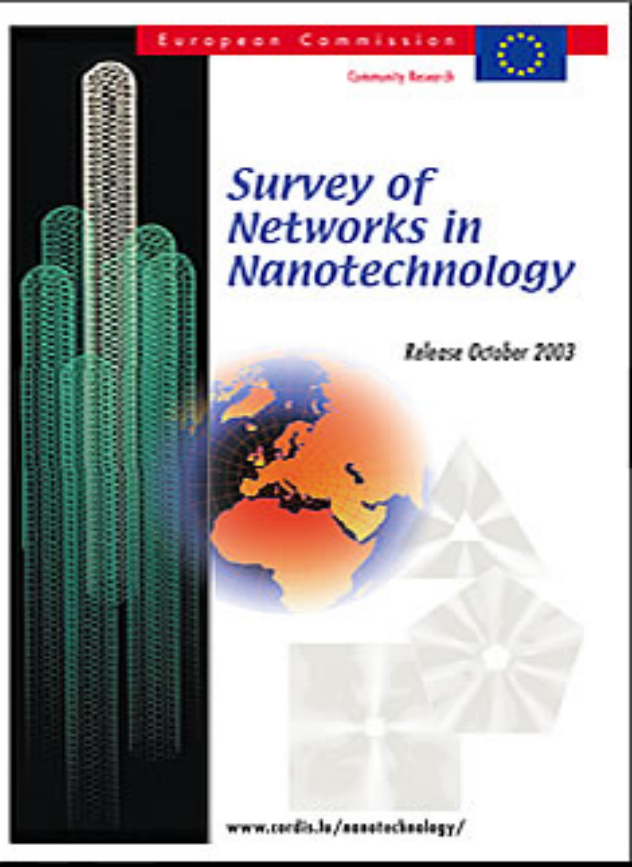
NANOAFNET



IUPAP-NANOsciences Working Group
Szeged-HUNGARY 2006

NANOGLOBAL





- 2002 **INDIA** Nano-Initiative,
- 2002 **BRAZIL** Nano-Initiative,
- **2003-5 AFRICAN** Nano-Initiatives

SANi (SA), AMANAT (Morocco), NANOAFNET (African Nano Network)

NANOAFNET: CREATION

NANOSCIENCES
AFRICAN-NETWORK
iNITIATIVE

1998 NNI-USA

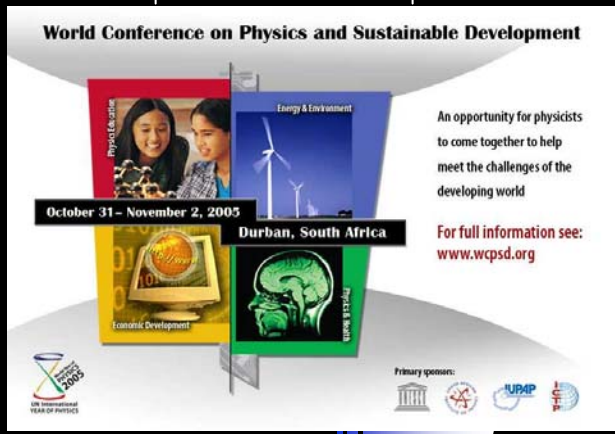
2001 Japan & EU Nano Networks & SANi

2003 Global NanoNetwork

2004 IBSA-NANO FORUM AMANAT

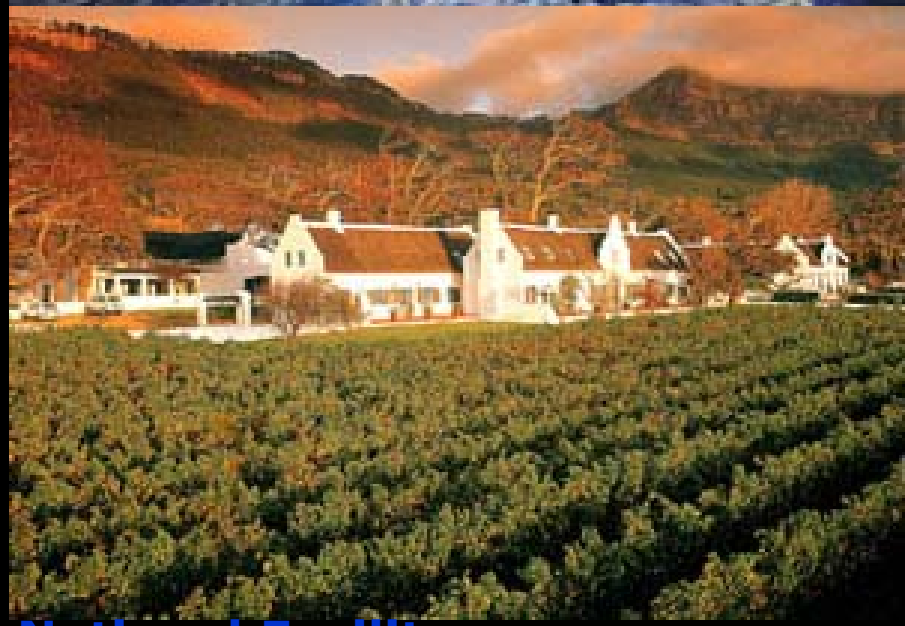
2005 ICS-UNIDO Trieste-Italy North-South Dialogue ICSU-IUPAP: Year of Physics Durban NANOAFNET

2007 NANO-EBASI NANO-ICTP College



Towards NANOSCIENCES in AFRICA

GEO-LOCATION



NANOSCIENCES AFRICAN-NETWORK iNITIATIVE

- iThemba LABS: National Facility
- iThemba LABS: UNESCO-TWAS CoE in the south
- iThemba LABS: ICTP associated centre

In addition to the onsite Zebras & Springbogs

MISSION

- **Cross-discipline** human mobility,

- **Sharing** user facilities based,

- **Addressing research & educational activities** proper to the continent in this emerging sphere of Nano–Sciences & Nano-Technology,

- **African visibility** throughout the continent to improve Africa's contribution in the Nano global wave in at least key areas such as cost effective green energy, water and health issues.

STRUCTURE

- **4 RCs**

(Regional Coordinators),

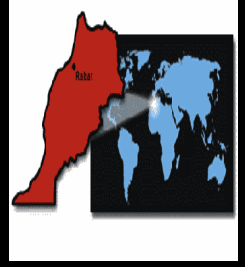
- **13 NCPs**

(National Contact Points),

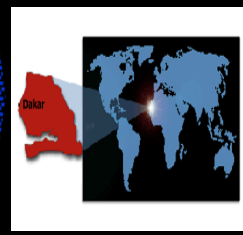
- **e-DESK**

(e-Assistance)

NORTH Regional coordinator
Prof. I. ZORKANI
Vice-President of Moroccan Association of Nanosciences



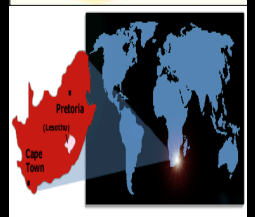
WEST-Regional Coordinator
Prof. A.C.BEYE
AMRS Founding President,
VICE-CHAIR



EAST-Regional Coordinator
Prof. T.OTITI
Founding AMRS Member

- **ADVISORY BOARD**

(C.N.R. RAO JNCASR-Bangalore)
(A. CHEETHAM ICMR-Santa Barbara)
(W. SOBOJEYO AMI-Princeton)
(T. KISHI NIMS-Tsukuba)
(M. HENINI Notthingham)
(A. MTINGWA MIT-Boston)



SOUTH-Regional Coordinator
Dr. N. MANYALA

CHAIRMAN Elect
Dr. M. MAAZA
Initiator of South African Nanotechnology initiative)

SPONSORS & SUPPORT

- **ICSU**
  (Africa office-Pretoria),
- **TWAS & AAS**
  (Africa office-Nairobi),
- **ICTP**
  (Abdus Salam ICTP-Trieste)
- **ALC**
  (African Laser Centre)
- **ICMR-NSF/AMI-NSF**
  (Intern. Centre for Maters. Santa Barbara/
  Africa Materials Institute-Princeton)
- **NRF-SA**
  (National Research Foundation-South Africa)
- **IPPS**
  (Intern. Program for Physical Sciences)
- **GNN**
  (Global Nanotechnology Network)

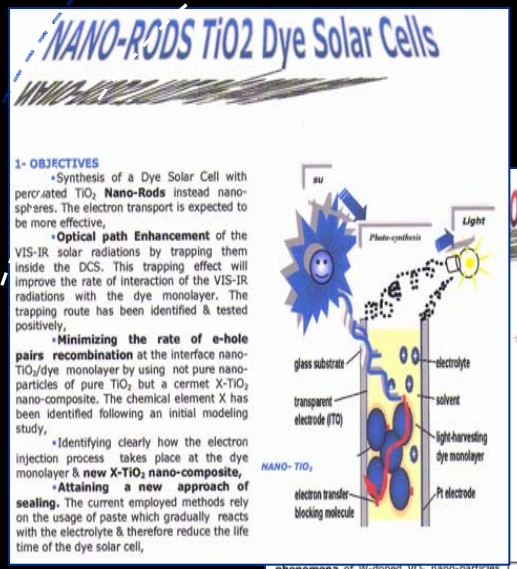
ONGOING R-D PROGRAMS

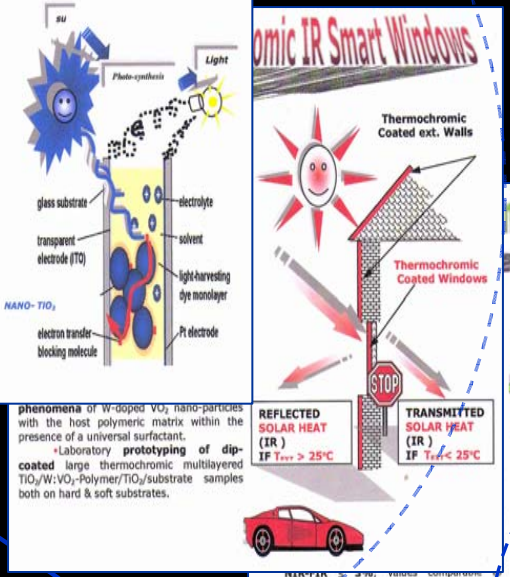
- **APPLIED STREAM**

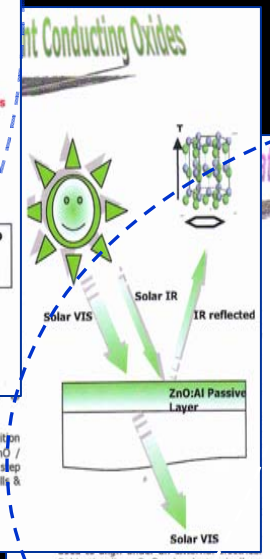
(Societal impact)

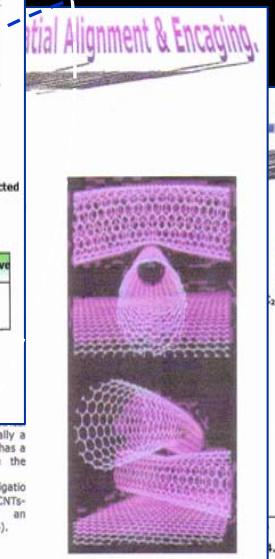
- **FUNDAMENTAL STREAM**

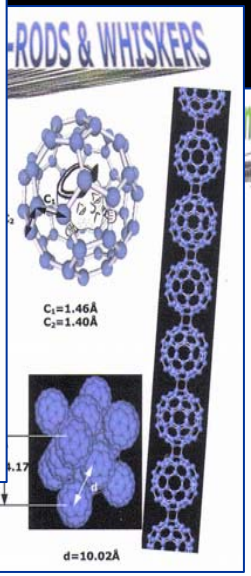
(Capacity Building)

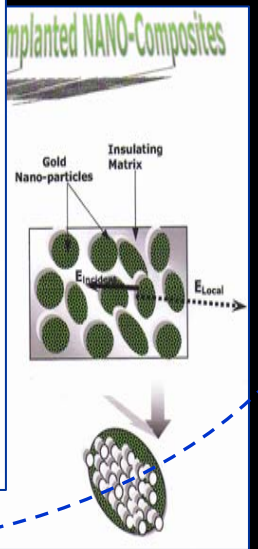












MAJOR ACHIEVEMENTS

Int. J. Nanotechnology, Vol. x, No. x, xxxx

On the possible optical resonance in carbon nanotubes based cavities

M. Maaza*

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Materials Research Group, iThemba LABS,
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Western Cape, South Africa
E-mail: Maaza@tlabs.ac.za
*Corresponding author

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and M.O. Ndwandwe

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Private Bag X1001, Kwadlangezwa, South Africa
E-mail: Thembi.Mhlungu@eskom.co.za
E-mail: Omndwandwe@pan.uzulu.ac.za

N. Cingo

Chemistry Department,
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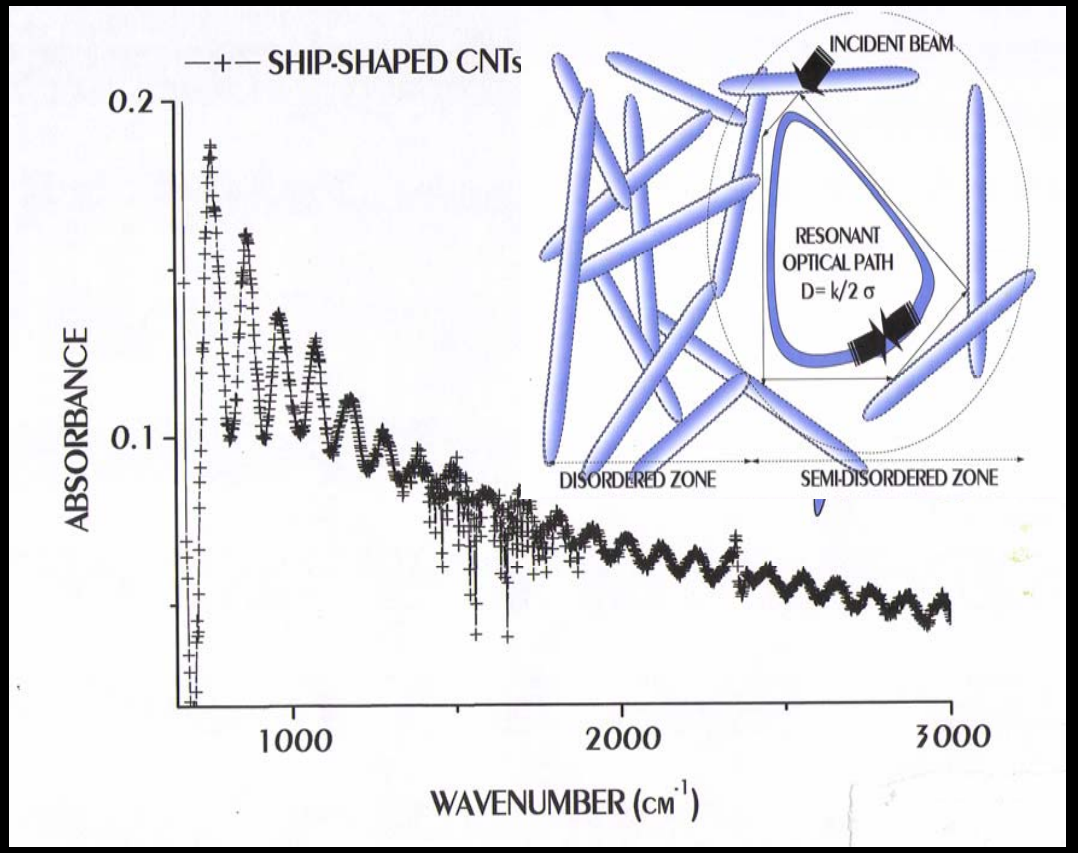
Preller Street, Muckleneuk,
Pretoria, UNISA, South Africa
E-mail: Cingon@unisa.ac.za

A.C. Beye

Physics Department,
University of Cheikh Anta-Diop of Dakar,
Dakar-Fann, Senegal, African Laser Centre,
CSIR National Laser Centre,
Pretoria 0001, South Africa

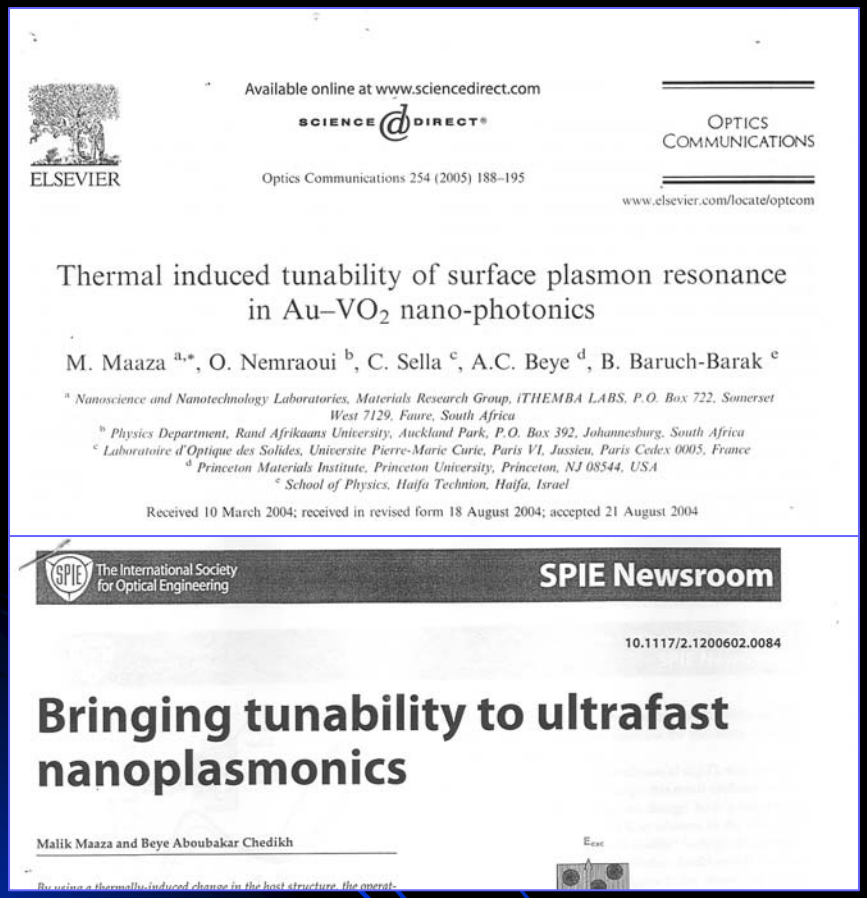
Princeton Materials Institute,
Bowen Hall, 70 Prospect Av.,
Princeton, NJ 08540-5211, USA
E-mail: Acbeye@refer.sn



- **1st observation of an Anderson type electromag. localization in ship-shaped CNTs.**

(International J. Nanotech. Vol.4. N.3, 2006)

MAJOR ACHIEVEMENTS



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Optics Communications 254 (2005) 188–195

OPTICS COMMUNICATIONS

www.elsevier.com/locate/optcom

Thermal induced tunability of surface plasmon resonance in Au–VO_2 nano-photonics

M. Maaza [a,*], O. Nemraoui [b], C. Sella [c], A.C. Beye [d], B. Baruch-Barak [e]

[a] Nanoscience and Nanotechnology Laboratories, Materials Research Group, iTHEMBA LABS, P.O. Box 722, Somerset West 7129, Faure, South Africa

[b] Physics Department, Rand Afrikaans University, Auckland Park, P.O. Box 392, Johannesburg, South Africa

[c] Laboratoire d'Optique des Solides, Universite Pierre-Marie Curie, Paris VI, Jussieu, Paris Cedex 0005, France

[d] Princeton Materials Institute, Princeton University, Princeton, NJ 08544, USA

[e] School of Physics, Haifa Technion, Haifa, Israel

Received 10 March 2004; received in revised form 18 August 2004; accepted 21 August 2004

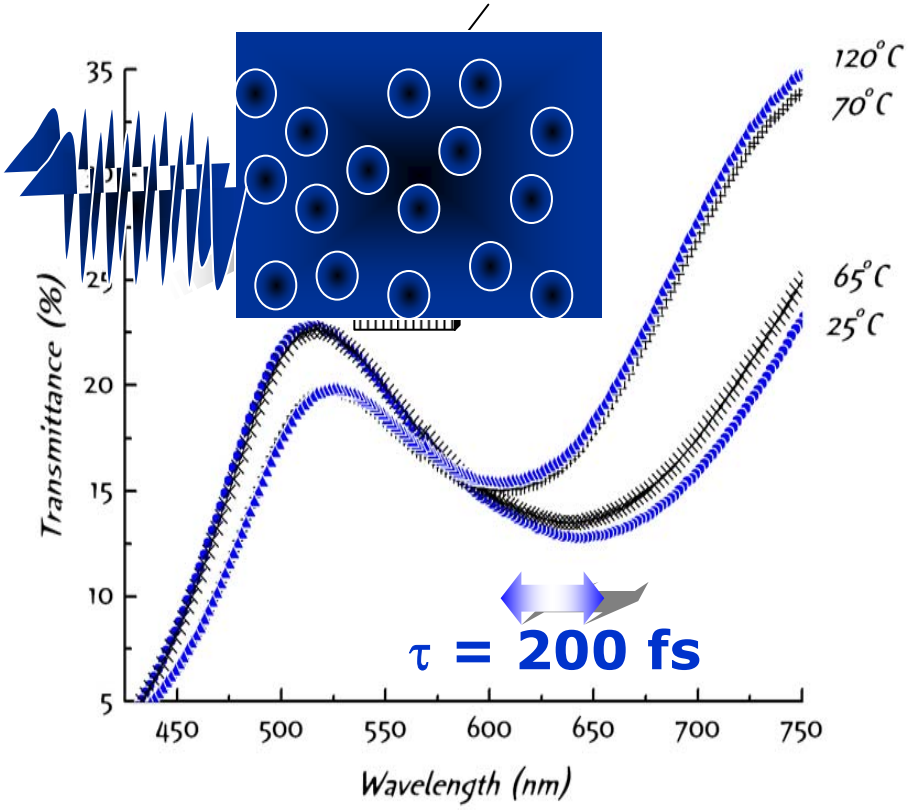
The International Society for Optical Engineering

SPIE Newsroom

10.1117/2.1200602.0084

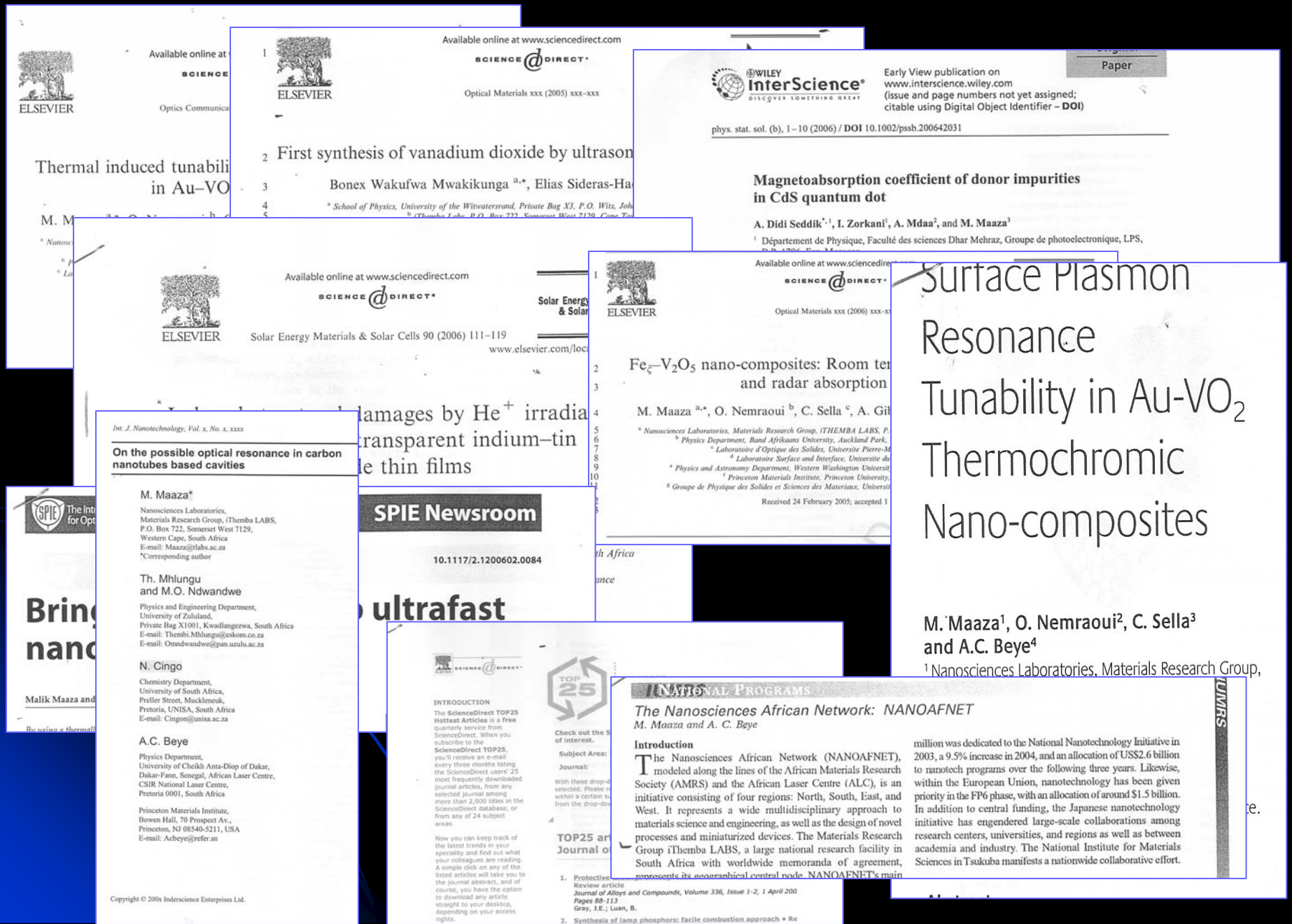
Bringing tunability to ultrafast nanoplasmonics

Malik Maaza and Beye Aboubakar Chedikh



- 1st demonstration of plasmon frequency Reversible Thermal Tunability in Femtosec nanoplasmonics (Optics Comm.2005, SPIE 2006)

ACTIONS: VISIBILITY



Thermal induced tunabili
in Au–VO

Available online at www.sciencedirect.com
SCIENCE DIRECT
Optical Materials xxx (2005) xxx–xxx
ELSEVIER

First synthesis of vanadium dioxide by ultrason

Bonex Wakufwa Mwakikunga [a,*], Elias Sideras-Ha

Paper
WILEY InterScience
Early View publication on www.interscience.wiley.com
(issue and page numbers not yet assigned; citable using Digital Object Identifier – DOI)
phys. stat. sol. (b), 1–10 (2006) / DOI 10.1002/pssb.200642031

Magnetoabsorption coefficient of donor impurities in CdS quantum dot

A. Didi Seddik*,[1], I. Zorkani[1], A. Mdaa[2], and M. Maaza[3]

[1] Département de Physique, Faculté des sciences Dhar Mehraz, Groupe de photoelectronique, LPS,

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Solar Energy Materials & Solar Cells 90 (2006) 111–119
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damages by He^+ irradia
transparent indium–tin
le thin films

Available online at www.sciencedirect.com
SCIENCE DIRECT
Optical Materials xxx (2006) xxx–x
ELSEVIER

Fe_ξ–V_2O_5 nano-composites: Room te
and radar absorption

M. Maaza [a,*], O. Nemraoui [b], C. Sella [c], A. Git

[a] Nanosciences Laboratories, Materials Research Group, iTHEMBA LABS, P.
[b] Physics Department, Rand Afrikaans University, Auckland Park,
[c] Laboratoire d'Optique des Solides, Universite Pierre-M
[d] Laboratoire Surface and Interface, Universite d
[e] Physics and Astronomy Department, Western Washington Universit
[f] Princeton Materials Institute, Princeton University,
[g] Groupe de Physique des Solides et Sciences des Materiaux, Universit

Received 24 February 2005; accepted 1

Surface Plasmon Resonance Tunability in Au-VO_2 Thermochromic Nano-composites

M. Maaza[1], O. Nemraoui[2], C. Sella[3] and A.C. Beye[4]

[1] Nanosciences Laboratories, Materials Research Group,

Int. J. Nanotechnology, Vol. x, No. x, xxxx

On the possible optical resonance in carbon nanotubes based cavities

M. Maaza*
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Western Cape, South Africa
E-mail: Maaza@tlabs.ac.za
*Corresponding author

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Dakar-Fann, Senegal, African Laser Centre,
CSIR National Laser Centre,
Pretoria 0001, South Africa

Princeton Materials Institute,
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Princeton, NJ 08540-5211, USA
E-mail: Acbeye@refer.sn

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SPIE Newsroom
10.1117/2.1200602.0084
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INTRODUCTION
The ScienceDirect TOP25 Hottest Articles is a free quarterly service from ScienceDirect. When you subscribe to the ScienceDirect TOP25, you'll receive an e-mail every three months listing the ScienceDirect users' 25 most frequently downloaded journal articles, from any selected journal among more than 2,000 titles in the ScienceDirect database, or from any of 24 subject areas.

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TOP 25

1. Protective
Review article
Journal of Alloys and Compounds, Volume 336, Issue 1-2, 1 April 200
Pages 88-113
Gray, J.E.; Luan, B.
2. Synthesis of lamp phosphors: facile combustion approach * Re

NATIONAL PROGRAMS

The Nanosciences African Network: NANOAFNET

M. Maaza and A. C. Beye

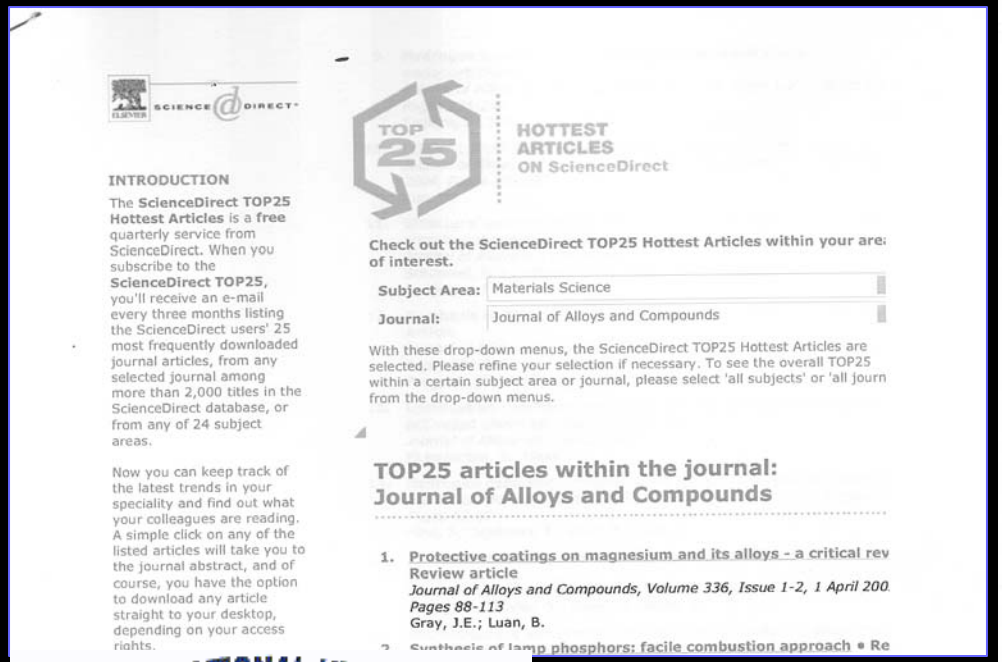
Introduction

The Nanosciences African Network (NANOAFNET), modeled along the lines of the African Materials Research Society (AMRS) and the African Laser Centre (ALC), is an initiative consisting of four regions: North, South, East, and West. It represents a wide multidisciplinary approach to materials science and engineering, as well as the design of novel processes and miniaturized devices. The Materials Research Group iThemba LABS, a large national research facility in South Africa with worldwide memoranda of agreement, represents its geographical central node. NANOAFNET's main

million was dedicated to the National Nanotechnology Initiative in 2003, a 9.5% increase in 2004, and an allocation of US$2.6 billion to nanotech programs over the following three years. Likewise, within the European Union, nanotechnology has been given priority in the FP6 phase, with an allocation of around $1.5 billion. In addition to central funding, the Japanese nanotechnology initiative has engendered large-scale collaborations among research centers, universities, and regions as well as between academia and industry. The National Institute for Materials Sciences in Tsukuba manifests a nationwide collaborative effort.

MRS

ACTIONS: VISIBILITY



SCIENCE DIRECT

TOP 25 HOTTEST ARTICLES ON ScienceDirect

INTRODUCTION

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Subject Area: Materials Science

Journal: Journal of Alloys and Compounds

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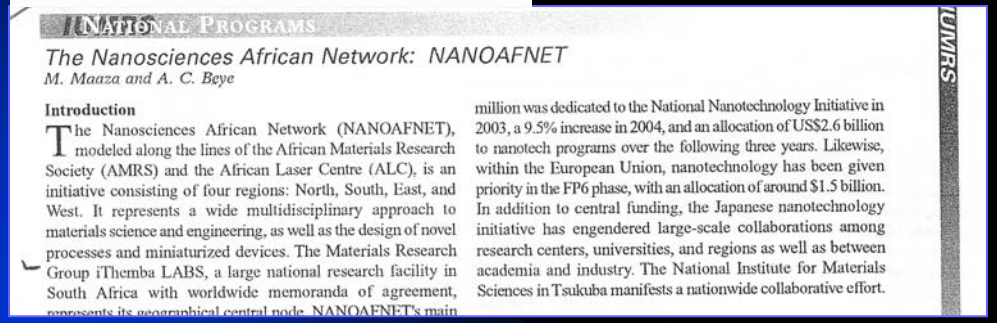
TOP25 articles within the journal: Journal of Alloys and Compounds

1. Protective coatings on magnesium and its alloys - a critical rev
   Review article
   Journal of Alloys and Compounds, Volume 336, Issue 1-2, 1 April 200
   Pages 88-113
   Gray, J.E.; Luan, B.

2. Synthesis of lamp phosphors: facile combustion approach • Re

INTERNATIONAL UNION OF MATERIALS RESEARCH SOCIETIES



NATIONAL PROGRAMS

The Nanosciences African Network: NANOAFNET

M. Maaza and A. C. Beye

Introduction

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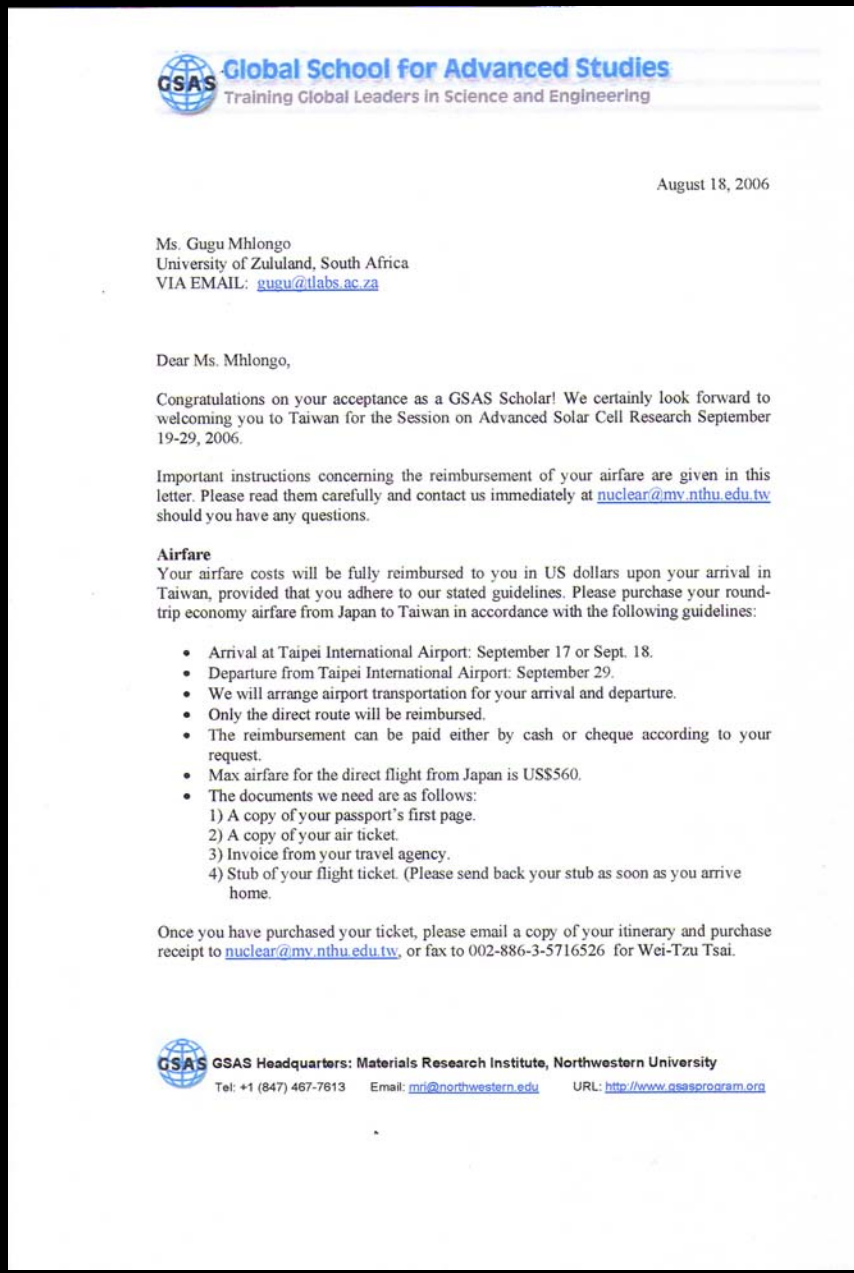


GSAS Global School for Advanced Studies
Training Global Leaders in Science and Engineering

August 18, 2006

Ms. Gugu Mhlongo
University of Zululand, South Africa
VIA EMAIL: gugu@tlabs.ac.za

Dear Ms. Mhlongo,

Congratulations on your acceptance as a GSAS Scholar! We certainly look forward to welcoming you to Taiwan for the Session on Advanced Solar Cell Research September 19-29, 2006.

Important instructions concerning the reimbursement of your airfare are given in this letter. Please read them carefully and contact us immediately at nuclear@my.nthu.edu.tw should you have any questions.

Airfare

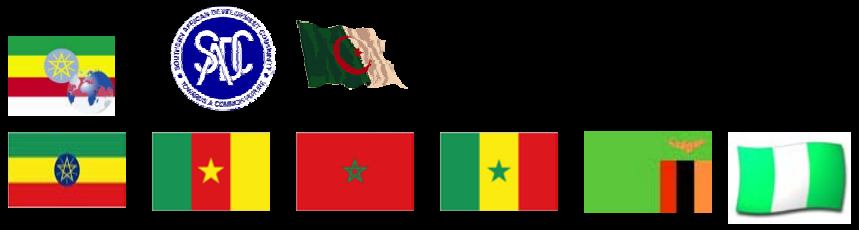
Your airfare costs will be fully reimbursed to you in US dollars upon your arrival in Taiwan, provided that you adhere to our stated guidelines. Please purchase your round-trip economy airfare from Japan to Taiwan in accordance with the following guidelines:

- Arrival at Taipei International Airport: September 17 or Sept. 18.
- Departure from Taipei International Airport: September 29.
- We will arrange airport transportation for your arrival and departure.
- Only the direct route will be reimbursed.
- The reimbursement can be paid either by cash or cheque according to your request.
- Max airfare for the direct flight from Japan is US$560.
- The documents we need are as follows:
  1) A copy of your passport's first page.
  2) A copy of your air ticket.
  3) Invoice from your travel agency.
  4) Stub of your flight ticket. (Please send back your stub as soon as you arrive home.

Once you have purchased your ticket, please email a copy of your itinerary and purchase receipt to nuclear@my.nthu.edu.tw, or fax to 002-886-3-5716526 for Wei-Tzu Tsai.

GSAS GSAS Headquarters: Materials Research Institute, Northwestern University
Tel: +1 (847) 467-7613 Email: mri@northwestern.edu URL: http://www.gsasprogram.org

ACTIONS: CAPACITY BUILDING



1-Ms. Th. MHLUNGU, MSc-2005
(Female, South Africa)
2-Ms. Th. NTSHANGASE, MSc-2005
(Female, South Africa)
3-Mr. P. SIBUYI, MSc-2005
(University of Western Cape, South Africa)
4-Ms. G. MHLUNGU, MSc-2006
(Female, South Africa)
5-Mr. S. SIBIYA, MSc-2006
(University of Zululand, South Africa)
6-Mr. C. MTSHALI, MSc-2006
(University of Zululand, South Africa)

7-Ms. S. LAKAJIE, PhD
(Female, South Africa)
8-Ms. V. JACOBS, PhD-2006
(Female, South Africa)
9-Mr. B.D. NGOM, PhD
(University of Cheikh Anta Diop, Senegal)
10-Mr. J. KANA KANA, PhD
(University of Yaounde, Cameroon)
11- Mr. G. GEBRESENBUT, PhD
(University of Addis Ababa, Ethiopia)
12-Ms. G. REAMA, PhD
(University of Obafemi Awolowe, Nigeria)
13-Ms. P. KALEBWE, PhD
(University of Zambia, Zambia)

14-Dr. I. ADRAOUI, Post-Doc
(University of Mohammedia, Morocco)

PIPE-LINE ACTIONS

- **GSAS-2006**
  (Global School for Advanced Studies NSF-TAIWAN, 09/2006, Taipei, 2006)
- **EBASI-2007**
  (Edward Bouchet- Abdus Salam Institute NSF-ICTP-NRF, 01/2007, Cape, South Africa)
- **US- AFRICA MATERIALS INSTITUTE**
  (African Institute of Sciences & Technology, 01/2007, Abuja, 2007)
- **PHYSICS WITHIN THE MEDITERANEAN LANDSCAPE**
  (French Physical Society, 02/2007, Marackech, Morocco)
- **ADVANCED MATERIALS INSTITUTE 2007**
  (NSF-Africa, October 2007, Cairo, Egypt)
- **SPECIAL ISSUE IN "IN. J.N."**
  (Nanosciences in Africa, Guest editors: A.C.Beye & M. Maaza, L. Vayssieres, 2007)
- **START UP OF THE "AFRICAN PHYSICAL REVIEWS"**
  (Special review in the first volume, APS-ICTP-IOP electronic initiative)
- **FULL PARTNERSHIP WITH ALC**
  (Special Program)

NANOAFNET: FOLLOW UP

- **Sustainable partnership with IUPAP**
  (Joint events in Africa & representativity)
- **Access to large Infrastructure pool**
  (Synchrotrons, Femtosec lasers)
- **Joint events: Nano-college Africa 2007**
  (Currently with ICTP, ICSU, TWAS)
- **Joint award**
  (Lack of award culture in Africa)
- **Access to e-Nano-literature**
  (IOP-UK, e-ICTP, e-APS in process)
- **FP-7 and Nanoafnet's senior scientists involvement**
  (Currently with NSF-Africa & Japan-Africa)
- **Juniors & joint Marie Curie fellowships**

ACKNOWLEDGMENTS & MOTO

- **IUPAP & ALL SPONSORS**

- **MOTO:**

"Nous irons,
Nous irons au bout,
Nous irons au bout de nos reves,
Nous irons la ou la raison humaine s'acheve"
(J. Jacques GOLDMAN)

- **HOME MADE COOLING SYSTEM**

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