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Practical Hints for Success in Science. Success or value?

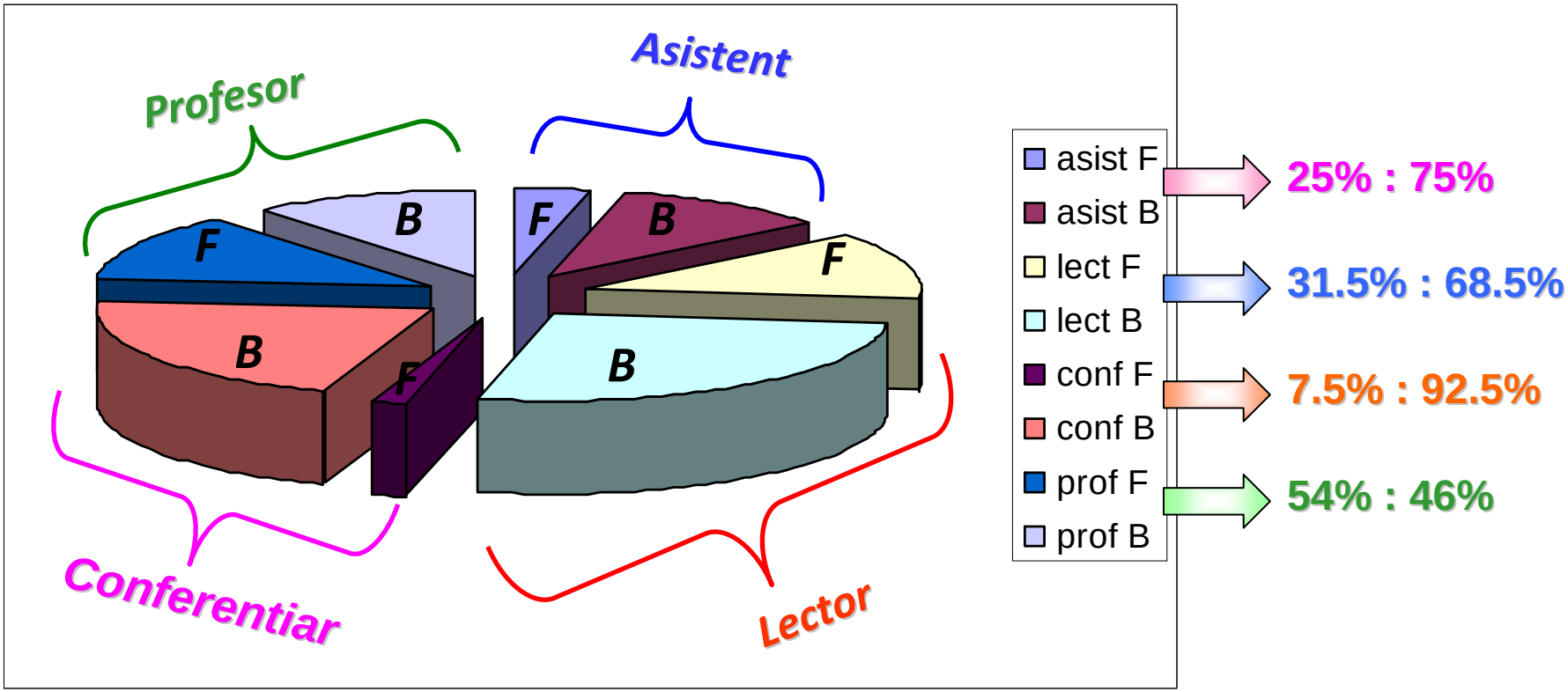
Liliana Mitoseriu

Faculty of Physics, University "Alexandru Ioan Cuza" Iasi

Faculty of Physics (oct. 2012)

Total - 56 fixed positions (17 F, 39 B)

- **assistants: 8 (2F, 6B)**
- **lecturers: 22 (7F, 15B)**
- **associate professors: 13 (1F, 12B)**
- **full professors: 13 (7F, 6B)**



Observations

Opinion, arguments & analyses from the editors of *Scientific American*

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How to Succeed in Science: Lindau Nobel Laureate Meeting, Day 4

By Mariette DiChristina | July 5, 2012 | 3

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On the last day of formal plenary talks at the 62nd Lindau Nobel Laureate Meeting, the laureates dispensed several lessons while describing their research experiences to the attending students, from developing expertise to enduring in the face of doubt.

(You can read all our coverage of the Lindau meeting this week, including the "30 under 30" profiles series of young scientists attending, in this In-Depth Report. Also see the Lindau Nobel Community blogs.)

Dan Shechtman, who won the 2011 Nobel in Chemistry for the discovery of

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How to Have a Successful Academic Career in Science

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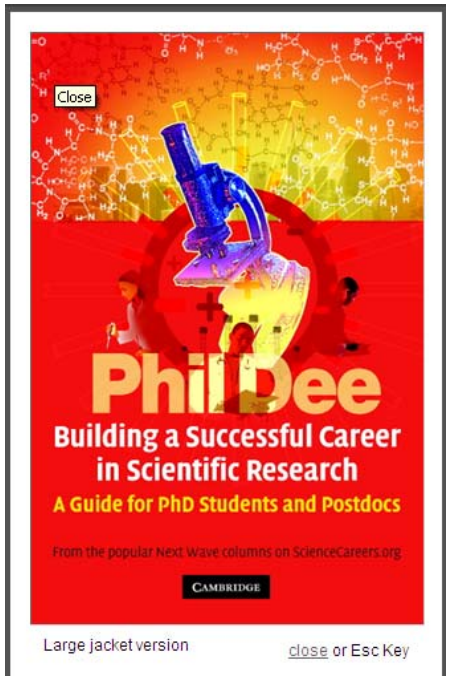
By Pablo Artal, OSA Fellow

OSA Fellow Pablo Artal has kindly allowed OPN's Bright Futures career blog to republish content from his popular blog Optics Confidential. In his blog, Artal fields questions from students, colleagues and other researchers on science, society and managing a career in optics.

Dear Prof. Artal: After several years working as a post-doc, I have just obtained a tenure-track academic position. What advice do you have for someone who is looking to embark on a successful independent career as a scientist. --*Helena, North Carolina, U.S.A.*



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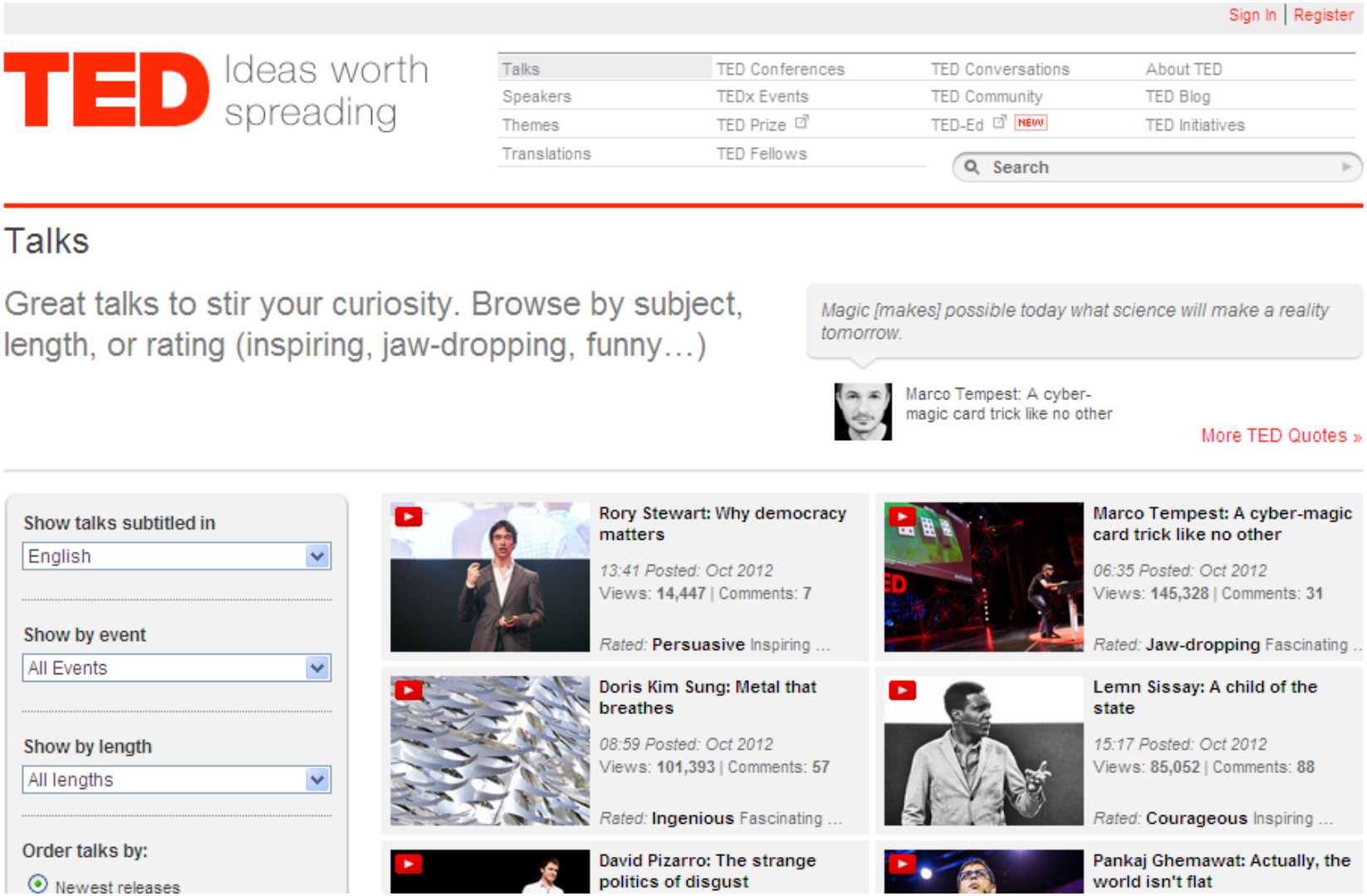
Career Q&A: A Successful Career Without Credentials

By Elisabeth Pain
May 11, 2012

John "Jack" R. Horner is Regents Professor of Paleontology at Montana State University and the curator of paleontology at

http://www.ted.com/talks

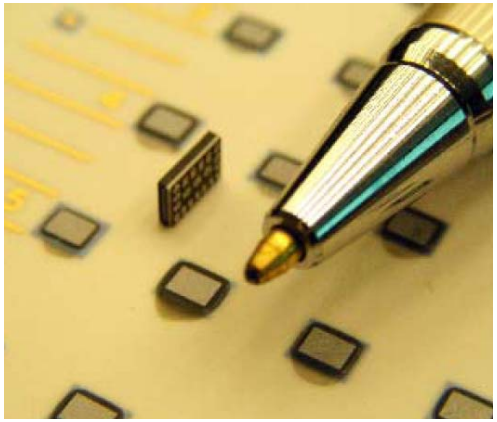


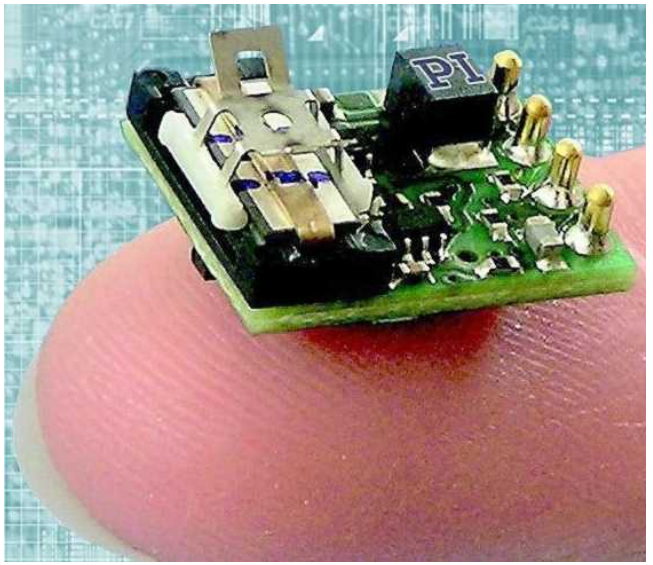
and many others…

Our research field

Field: Dielectrics, ferroelectrics and multiferroics

- “smart” materials with applications in microelectronics





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Recent publications

2004

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43. "Calculations of R(T) and I(V) characteristics of the n-doped B... M.T. Buscaglia, V. Buscaglia, A. Testino, P. Nanni, Key. Eng. M...
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56. "Characterisatio... Mitoseriu, A. St...
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58. "Relaxor prope... Mitoseriu, A. St...
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2007

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73. „Properties of the $Pb(Mg_{1/3}Nb_{2/3})O_3$ Ceramics Prepared by Using Two Different Mg Precursors", L. Mitoseriu, A. Ianculescu, M.M. Carnasciali, A. Braileanu, L. Curecheriu, Ferroelectrics 369, 157-169 (2008)
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75. „Compositionally induced ferroelectric-relaxor crossover in Ba(Zr,Ti)O3 ceramics", C.E. Ciomaga, M.T. Buscaglia, M. Viviani, L. Mitoseriu, V. Buscaglia, P. Nanni, J. Optoel. & Adv. Mater. 10, No. 9, 2367 – 2372 (2008)
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2005: 4 ISI papers
2006: 14 ISI papers
2007: 8 ISI papers
2008: 9 ISI papers
2009: 8 ISI papers
2010: 13 ISI papers (IF = 30.159)
2011: 13 ISI papers (IF = 33.780)
2012: 14 ISI papers

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Group

Prof. univ. dr.
Liliana Mitoseriu

Dr. Cristina Ciomaga
Post-doc

Dr. Lavinia Curecheriu
Post-doc

Dr. Cristina Olariu
Post-doc

Dr. Sorin Balmus
Post-doc

Dr. Felicia Gheorghiu
Researcher

Nadejda Horchidan
Researcher

Zina Mocanu
PhD Student

Leontin Padurariu
PhD student

Dr. Vasilica Pascariu
Post-doc

Dr. Mirela Airimioaei
Post-doc

Mihai Pop
PhD student

Alexandra Neagu
Master student

Geanina Apachitei
Master student

Cipriana Padurariu
Master student

Work in a group.
Collaborate rather than compete.

GOOD & ACTIVE collaborations

- dr. V. Buscaglia, dr. M. Viviani, dr. M.T. Buscaglia, IENI-CNR, prof. P. Nanni, Dept. of Chemical & Process Eng., Univ. Genoa, ITALY

- Dr. C. Galassi, ISTEC-CNR Faenza, ITALY

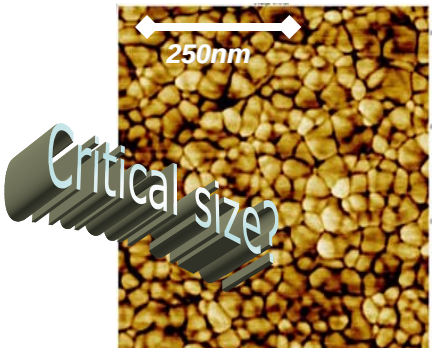
- prof. A. Ianculescu, Polytechnics University of Bucharest, ROMANIA

- dr. C. Harnagea, INRS-EMT, Univ. Québec, Varennes, CANADA

- dr. D. Ricinschi, Tokyo University, JAPAN

Select your collaborators wisely.
Create human contacts besides the scientific ones in the scientific community.

Results: Grain size effects in $BaTiO_3$ ceramics - *Most cited paper with UAIC and UNIGE affiliation and second in Romania*



~250citations

PHYSICAL REVIEW B **70**, 024107 (2004)

Grain-size effects on the ferroelectric behavior of dense nanocrystalline $BaTiO_3$ ceramics

Zhe Zhao,[1] Vincenzo Buscaglia,[2,*] Massimo Viviani,[2] Maria Teresa Buscaglia,[2] Liliana Mitoseriu,[3,4] Andrea Testino,[3] Mats Nygren,[1] Mats Johnsson,[1] and Paolo Nanni[3]

[1]*Department of Inorganic Chemistry, Arrhenius Laboratory, Stockholm University, S-106 91 Stockholm, Sweden*

[2]*Institute for Energetics and Interphases, Department of Genoa, National Research Council, via De Marini 6, I-16149 Genoa, Italy*

[3]*Department of Process and Chemical Engineering, University of Genoa, Fiera del Mare, I-16129 Genoa, Italy*

[4]*Department of Electricity and Electronics, University Al. I. Cuza Iasi, 700504, Romania*

(Received 28 April 2004; published 30 July 2004)

The group of papers on GSE ~400 citations

PHYSICAL REVIEW B 73, 064114 (2006)

High dielectric constant and frozen macroscopic polarization in dense nanocrystalline $BaTiO_3$ ceramics

Maria Teresa Buscaglia,[1] Massimo Viviani,[1] Vincenzo Buscaglia,[1,*] Liliana Mitoseriu,[2,3] Andrea Testino,[1,3] Paolo Nanni,[1,3] Zhe Zhao,[4,†] Mats Nygren,[4] Catalin Harnagea,[5] Daniele Piazza,[6] and Carmen Galassi[6]

[1]*Institute for Energetics and Interphases, Department of Genoa, National Research Council, Via de Marini 6, I-16149 Genoa, Italy*

[2]*Department of Solid State and Theoretical Physics, Al. I. Cuza University, Bv. Carol I 11, 700506 Iasi, Romania*

[3]*Department of Chemical and Process Engineering, University of Genoa, Piazzale Kennedy, I-16129 Genoa, Italy*

[4]*Department of Inorganic Chemistry, University of Stockholm, S-106 91 Stockholm, Sweden*

[5]*INRS-Energie, Matériaux et Telécommunications, University of Québec, 1650 Lionel-Boulet, Varennes, Quebec, Canada J3X 1S2*

[6]*Institute of Science and Technology for Ceramics, Via Granarolo 64, I-48018 Faenza, Italy*

(Received 6 October 2005; revised manuscript received 2 December 2005; published 24 February 2006)

INSTITUTE OF PHYSICS PUBLISHING

Nanotechnology **15** (2004) 1113–1117

Ferroelectric properties of dense nanocrystalline $BaTiO_3$ ceramics

Maria Teresa Buscaglia[1], Vincenzo Buscaglia[1,7], Massimo Viviani[1], Jan Petzelt[2], Maxim Savinov[2], Liliana Mitoseriu[3,4], Andrea Testino[3], Paolo Nanni[3], Catalin Harnagea[5], Zhe Zhao[6] and Mats Nygren[6]

[1] Institute for Energetics and Interphases-CNR, Via de Marini 6, Genoa I-16149, Italy
[2] Institute of Physics, Academy of Sciences, Na Slovance 2, 18221, Prague 8, Czech Republic
[3] Department of Chemical and Process Engineering, University of Genoa, Piazzale Kennedy, I-16129 Genoa, Italy
[4] Department of Electricity, Al. I. Cuza University, Boulevard Carol I 11, Iasi 700506, Romania
[5] INRS-EMT, University of Québec, 1650 Lionel-Boulet, Varennes, QC, J3X 1S2, Canada
[6] Department of Inorganic Chemistry, Arrhenius Laboratory, University of Stockholm, S-106 91 Stockholm, Sweden

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Nanostructured barium titanate ceramics

V. Buscaglia[a], M. Viviani[a,*], M.T. Buscaglia[a], P. Nanni[b], L. Mitoseriu[b], A. Testino[b], E. Stytsenko[c], M. Daglish[c], Z. Zhao[d], M. Nygren[d]

[a]*Institute for Energetics and Interphases, National Research Council, Via De Marini 6, 16149 Genoa, Italy*
[b]*Department of Chemical and Process Engineering, University of Genoa, P.le Kennedy, Pad. D, 16129 Genoa, Italy*
[c]*Industrial Research Limited, Gracefield Road, PO box 31-310, Lower Hutt, New Zealand*
[d]*Department of Inorganic Chemistry, Arrhenius Laboratory, Stockholm University, 10691, Stockholm, Sweden*

Available online 2 November 2004

APPLIED PHYSICS LETTERS VOLUME 84, NUMBER 13 29 MA

Local switching properties of dense nanocrystalline $BaTiO_3$ ceramics

Liliana Mitoseriu
Department of Chemical and Process Engineering, University of Genoa, P.le Kennedy 1, I-16129, Italy and Department of Electricity and Electronics, Al.I. Cuza University, Bv. Carol I, 11, Iasi 700506, Romania

Catalin Harnagea
INRS-EMT, University of Quebec, 1650 Lionel-Boulet, Varennes, Quebec J3X 1S2, Canada

Paolo Nanni[a)] and Andrea Testino
Department of Chemical and Process Engineering, University of Genoa, P.le Kennedy 1, I-16129, Italy

Maria Teresa Buscaglia, Vincenzo Buscaglia, and Massimo Viviani
Institute for Energetics and Interphases—CNR, Via De Marini 6, I-16149 Genoa, Italy

Zhe Zhao and Mats Nygren
Department of Inorganic Chemistry, Arrhenius Laboratory, Stockholm University, S-10691 Stockholm, Sweden

(Received 6 October 2003; accepted 7 February 2004)

Good & interesting topic

~20 years of work in GSE

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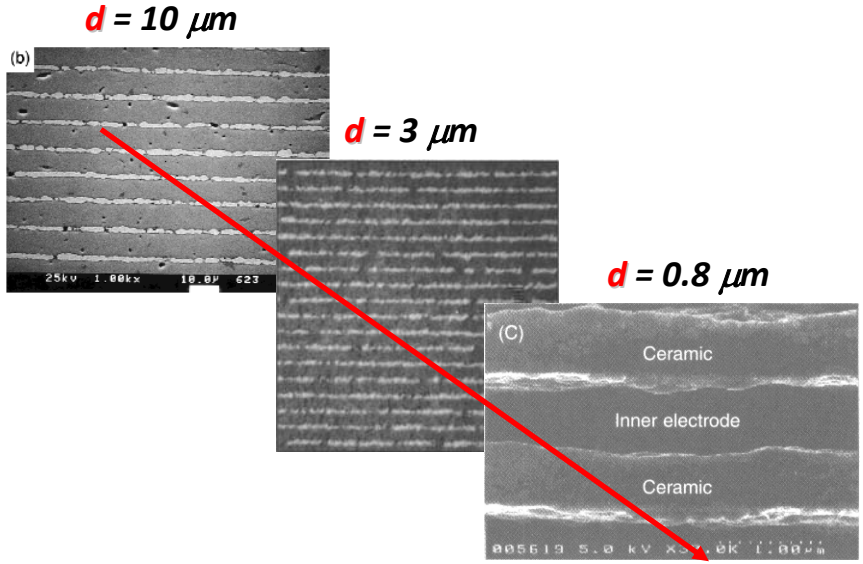

Ferroelectrics, 1999, Vol. 223, pp. 99-106
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A Comparative Study of the Grain Size Effects on Ferro-Para Phase Transition in Barium Titanate Ceramics

LILIANA MITOSERIU[a], VASILE TURA[a], CONSTANTIN PAPUSOI[a], TOSHIO OSAKA[b] and MASANORI OKUYAMA[c]

[a]*Dept. of Electricity, Faculty of Physics, Al. I. Cuza University, Bd. Copou 11, Iasi, 6600, Romania,* [b]*Dept. of Applied Physics, Faculty of Science, Science University of Tokyo, Kagurazaka 1–3, Shinjuku-ku, Tokyo 162, Japan and* [c]*Dept. of Electrical Engineering, Graduate School of Engineering Science, Osaka University, 1–3 Machikaneyama-cho, Toyonaka, Osaka 560, Japan*

Jpn. J. Appl. Phys. Vol. 35 (1996) pp. 5210–5216
Part 1, No. 9B, September 1996

Grain Size Dependence of Switching Properties of Ferroelectric $BaTiO_3$ Cer

Liliana MITOSERIU, Dan RICINSCHI, Catalin HARNAGEA, Masanori OKUYAMA[1], Takeyo TSUKAMOTO[2] and Vasile TURA*

Department of Electricity and Magnetism, Faculty of Physics, Al. I. Cuza University, Iasi, 6600, Romania
[1]*Department of Electrical Engineering, Faculty of Engineering Science, Osaka University, 1-3 Machikaneyama-cho, Toyonaka, Osaka 560, Japan*
[2]*Department of Applied Physics, Faculty of Science, Science University of Tokyo, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162, Japan*

(Received May 29, 1996; accepted for publication June 13, 1996)

Ferroelectrics, 2000, Vol. 240, pp. 51-58
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Grain Size Dependence of the Rayleigh Coefficients in Barium Titanate Ceramics

LILIANA MITOSERIU, VASILE TURA, DAN RICINSCHI and CATALIN HARNAGEA

"Al. I. Cuza" Univ., Faculty of Physics, Dept. of Electricity, Blv. Copou, 11, Iasi, 6600, ROMANIA

(Received July 12, 1999)

Good professor

PhD advisor:
prof. Constantin Papusoi

- **Choose an interesting research topic.**

- **Choose a good professor in your field.**

- How you can evaluate your professor? Criteria.

- If his/her experience is limited in what you are interested to do, find more coordinators in the country and abroad.

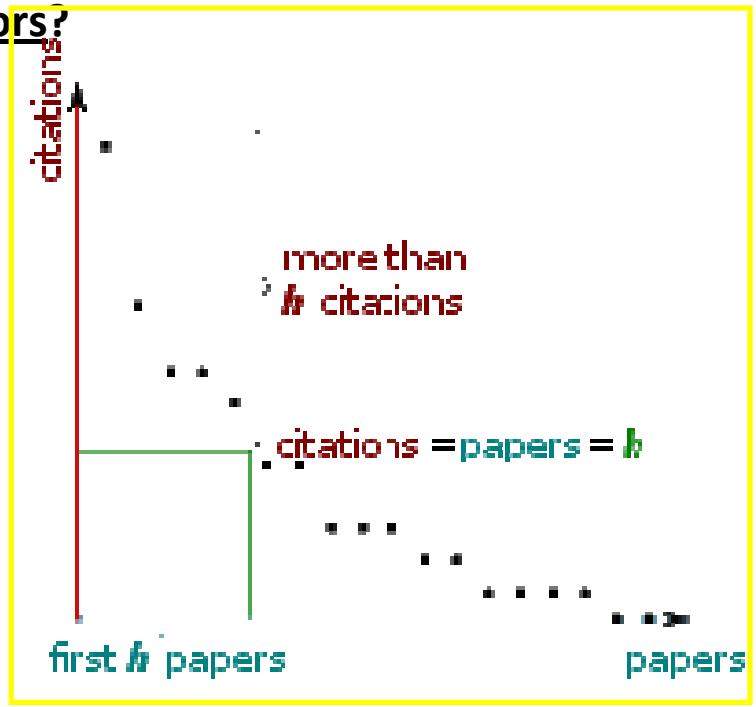
- **Orient your carrier**
- **Read a lot of papers in your field**
- **Publication policy.**

- Why? When? How? Where? Co-authors. Bibliometric records

- **ISI Web of Science (ISI WoS). Impact factor. Hirsch index.**
- **H index - attempts to measure both the <u>productivity</u> and <u>impact</u> of the published work of a scientist or group. The index is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications.**

- **Why articles in high-impact factor have <u>more coauthors</u>?**

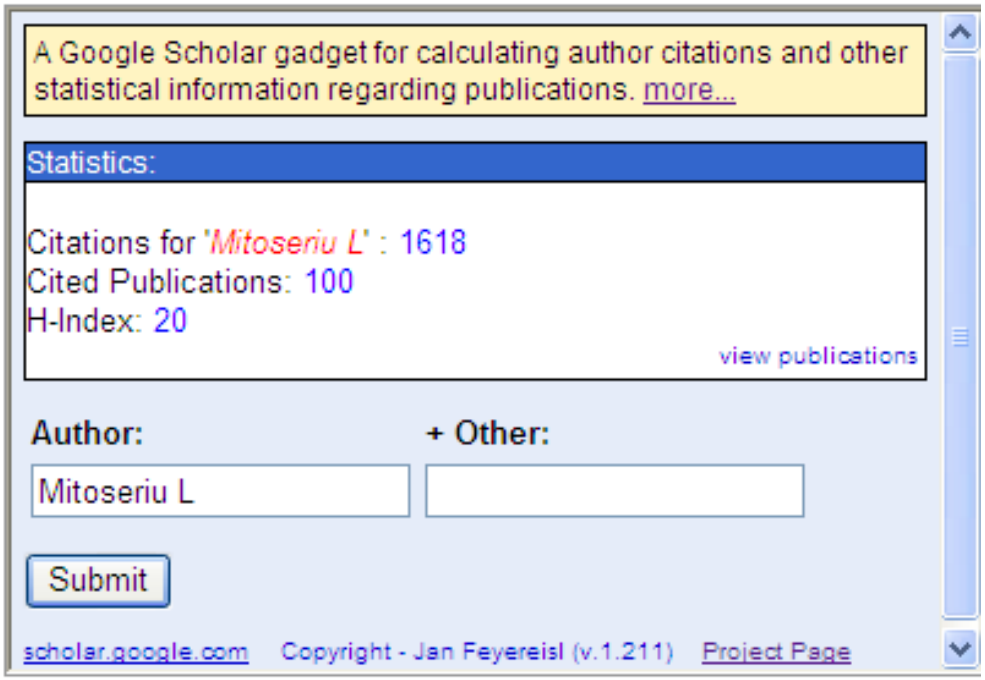
Average no. of co-authors (3 years):
Physical Review B: 4.5
Physical Review Letters: 4.6
Nature Physics: 7.0
Nature Nanotechnology: 6.3



<u>Dilema:</u> **Productivity *vs.* Creativity.**

Google Scholar - sites and programs that can help you calculate the h-index. These are generally free and quality varies. Recommended sites and services:

1. Quadsearch http://quadsearch.csd.auth.gr/index.php?lan=1&s=2 (i.e. the 'Science' search)
2. Scholar H-index Calculator https://addons.mozilla.org/en-US/firefox/addon/45283
(add-on for Mozilla Firefox browser, adds metrics to the standard Google Scholar site, easy to use but only calculates for the articles on the current page, a maximum of 100)
3. Scholarometer http://scholarometer.indiana.edu/
(add-on for Mozilla Firefox and Google Chrome browsers – appears as a sidebar when installed)
4. Publish or Perish http://www.harzing.com/pop.htm
(application that calculates a wide variety of metrics)



Benefits

- Covers a wider range of sources, (especially conferences, technical reports and eprints).
- Easier to calculate some of the less common metrics (since it isn't linked to proprietary data – thus more innovation)
- Free

Disadvantages

- May be considered a less authoritative than Web of Science
- More difficult to search where there are multiple authors with the same family name & initials – limited options to refine

Practical Hints for Success in Science & Academia.

- **To become an university professor you should be also a scientist in your field. You cannot make university career without scientific research.**
- **Be sure you like to be a scientist. If not, choose another field.**
- **Be aware that scientist does not become rich (even in developed countries!)**
- **Realize that science requires more self-discipline than many other majors, but offers more rewards.**
- **Be organized. Persevere and be determined to succeed. Be ready to deal with strict deadlines.**
- **Do not believe in your results, check!**
- **Focus and finish.**
- **Work hard and manage your time wisely. Hard work and organizational skills are key factors. Be generous with your time and efforts. The most difficult balance to strike is between work and your family or personal life. Learn to take time off, and don't work on holidays.**
- **Be prepared for insuccess.**

Dan Shechtman **(2011 Nobel in Chemistry for the discovery of quasicrystals)**

- From 1912 to 1982, all materials found were ordered and periodic "The story of my discovery is a paradigm shift in that science, he said." When he found a quasimaterial, which is ordered but not periodic, the first paper he submitted in 1984 to a physics journal was "like a tennis match":

- "It was one-two and it was back on my desk." A second journal published it many months later. Finally, a paper in Physical Review Letters got through to the community: "When this paper appeared, all hell broke loose."

Shechtman said he had many years of rejection. "For some time I felt quite lonely." Linus Pauling, for instance, objected to the idea of quasiperiodicity:

"There are no quasicrystals, just quasiscientists." **Ultimately, "When he died, so died the opposition," said Shechtman.**

• **Funds: Learn as soon as possible to write grants.**

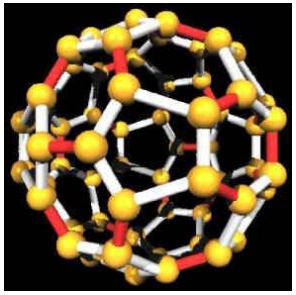
• **Balance exposure and modesty.**

You should actively participate in scientific events, but you should also try to balance your exposure with reasonable modesty. We always know less than we should, and there will always be somebody else who is better or smarter. Be sure that you never underestimate any of your audiences.

• **Quality over quantity. In the long term, the quality of your research will outweigh its quantity. Keep your own standards high. This will help you to establish a (good) reputation in the field. That will be your most important asset.**

• **Enjoy yourself: Of course, this will not be possible every minute, but you need to have fun and enjoy what you do. Then you will be able to transfer this enthusiasm to others and engage them in your research.**

• **Write high quality papers, and thereby publish in mainstream journals. Read papers and learn how to write well.**



Kroto (Nobel 1996, Chemistry): "The best reason to be a scientist: We are the only truly international family, not beholden to any particular country's interests. It is the universe that is our master."

Success at any cost?

- manage the pressure to publish
- publish only when you have understood your results
- avoid speculations
- be honest
- avoid multiplication of results
- be an active co-author
-pay attention on what you put your name!

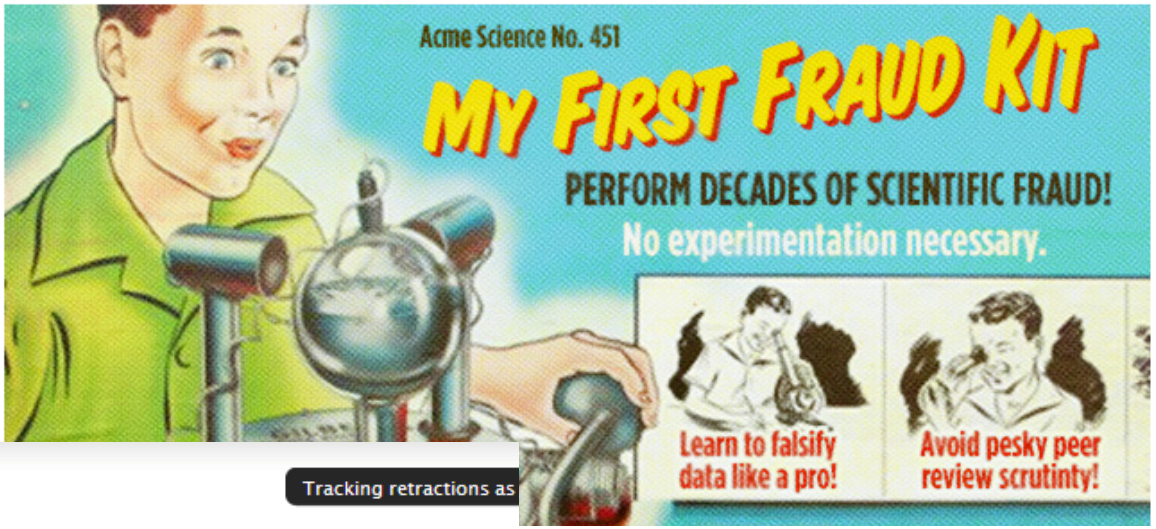
SCIENTIFIC METHOD / SCIENCE & EXPLORATION

Epic fraud: How to succeed in science (without doing any)

Envy those who succeed by making up their data? Here's how you can, too!

by John Timmer - July 19 2012, 4:30am -300

SCIENCE POLICY AND EDUCATION 287



Retraction Watch

Tracking retractions as

Major fraud probe of Japanese anesthesiologist Yoshitaka Fujii may challenge retraction record

with 10 comments

We have learned that a widely published Japanese anesthesiologist is under investigation by his university over concerns that he engaged in repeated fraud for decades that has tainted roughly 180 articles—many of which may be retracted as a result.

In a related move, the journal *Clinical Therapeutics* is retracting papers by the researcher, Yoshitaka Fujii, most recently of Toho University, in Tokyo. Judy Pachella, managing editor of the journal, confirmed the retractions but would not state how many papers were affected. *Clinical Therapeutics* published 17 articles by Fujii, between 2003 and 2010.

Advices

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19 February 2011

Increasing your h-index by reclaiming misspelled citations

Otto Muskens 

Tags: citations, h-index, web of science
Posted in Tips

Here is a short contribution on how to correct misspelled citations in Web of Science. Citations have become the currency of science, which is used to reward scientists and scientific institutions. Small variations in citation scores can make millions of pounds difference in the financial outcomes of national Research Assessments .

ISI Web of SCIENCE.

Therefore keeping your citation record updated is of critical importance.

ISI Web of Science has the possibility of reclaiming citations which have been misspelled in the original manuscripts. To do this, go to 'Cited Reference Search' and type in your name and initials in the author field. You will get a list of articles with the number of citations. Importantly, the articles which do not have a record assigned to them (i.e. the 'View Record' link) have not been correctly assigned to your citation record. This may be because the year, volume number, or page is incorrectly referred.

Next thing to do is select the miscited articles and click 'Finish Search'.

resentations | Tips | PhD life | Buy the

14 September 2012

My group, Your group, or Our group

Ad Lagendijk 

Tags: exploitation, group leader, science
Posted in PhD life, politics, Tips

In science the dilemma of either cooperating or competing is everywhere. The situation is never black or white and depends on the discipline. In this post I will limit myself to the typical small-science group model: one group leader, one or two postdocs and a number – typically between 4 and 6, of PhD students.

Pressure

All the group member are under pressure. PhD students have to finish their thesis in time, with preferably a couple of first-author articles in glossy magazines.

On the level of PhD students there is already possibly competition if the work of PhD students overlap either with respect to subject or when equipment is shared.

The postdoc's first aim is to get at some academic place a tenure track position. He needs papers. The PhD students might not want him on their papers, or the other way around.

Satisfaction? Success & Recognition?

- (maybe) not in your country, nor in your institution;
- reputation in the international community in your field.

ECAPD IX Roma

SAPIENZA UNIVERSITÀ DI ROMA

9th European Conference on Applications of Polar Dielectrics
Roma, August 25th-29th 2008

Award

The International Advisory Board of the 9th European Conference on Applications of Polar Dielectrics (ECAPD9) held in Roma (Italy) from August 25th to 29th 2008 selected the contribution titled

Functional properties of the
$(1-x)BiFeO_3 - xBaTiO_3$ solid solutions

presented by

Felicia Prihor

as one of the six best works of the conference.

Roma, August 29th 2008

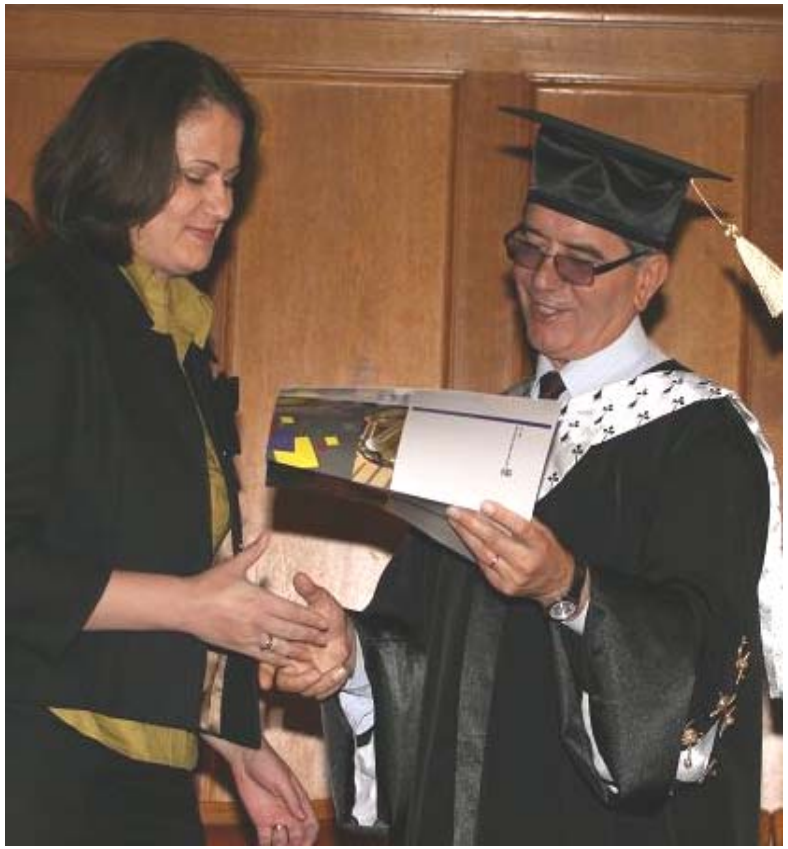
On behalf of the International Advisory Board
Prof. Francesco Michelotti
Conference Chair

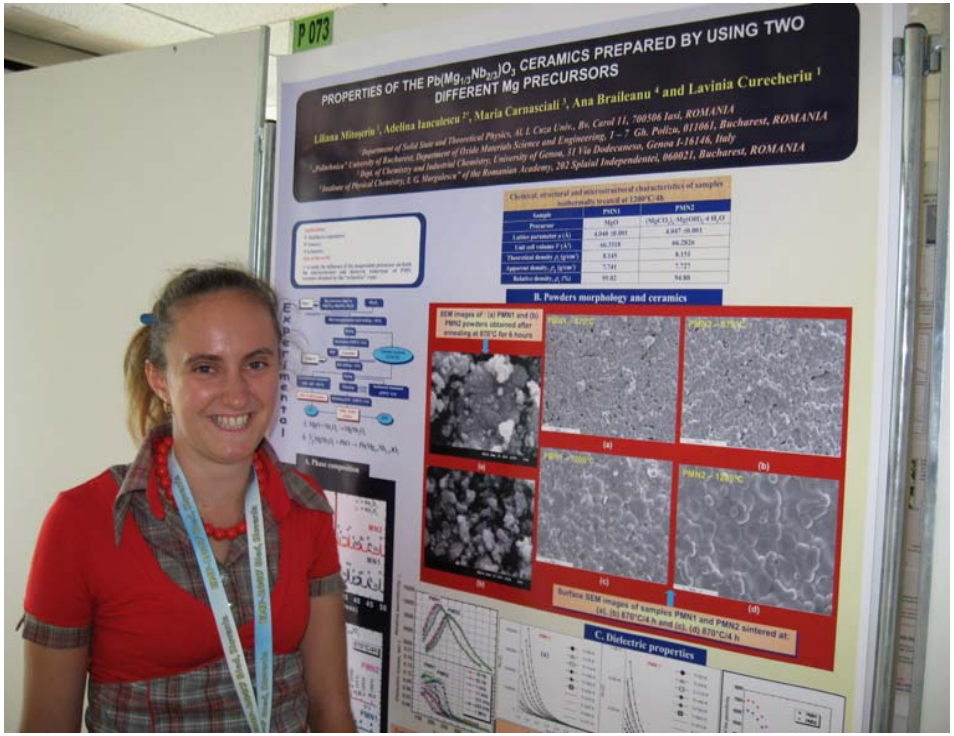
Sponsored by

LOT Oriel Group Europe

HAMAMATSU

Cristina Elena Ciomaga – premiul Universitatii “Al.I. Cuza” pentru ***cea mai buna teza de doctorat la Fizica in 2007***





Dr. Lavinia Curecheriu, premiul I in competitia nationala a Societatii Romane de Ceramica, reprezentant al Romaniei la *Student contest of the European Ceramic Society, Cracovia, 2009*

Universitatea Alexandru Ioan Cuza

Centrul de Cercetări Aplicate în Fizică şi Tehnologii Avansate
Centre for Applied Research in Physics and Advanced Technologies

CARPATH
IASI - ROMANIA

Se acordă doamnei

Cristina CIOMAGA

Pentru lucrarea
"Magnetoelectric ceramic composites with double-resonant permittivity and permeability in GHz range: A route towards isotropic metamaterials"
publicată în ***Scripta Materialia*** *de către*
Cristina Ciomaga, Ioan Dumitru, Liliana Mitoseriu, Carmen Galassi, Alexandra Iordan, Mirela Airimioaei şi Mircea Palamaru

PREMIUL CENTRULUI DE EXCELENŢĂ CARPATH PENTRU ANUL 2010

Director,
Profesor Dr. Alexandru STANCU

2010

Universitatea Alexandru Ioan Cuza

Centrul de Cercetări Aplicate în Fizică şi Tehnologii Avansate
Centre for Applied Research in Physics and Advanced Technologies

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Se acordă domnişoarei

Lavinia CURECHERIU

Pentru lucrarea
"Functional properties of $BaTiO_3$-$Ni_{0.5}Zn_{0.5}Fe_2O_4$ magnetoelectric ceramics prepared from powders with core-shell structure"
publicată în ***Journal of Applied Physics*** *de către*
Lavinia Curecheriu, Maria Teresa Buscaglia, Vincenzo Buscaglia, Liliana Mitoseriu, Petronel Postolache, Adelina Ianculescu şi Paolo Nanni

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Centre for Applied Research in Physics and Advanced Technologies

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Se acordă doamnei

Felicia GHEORGHIU

Pentru lucrarea
"Non-linear dielectric properties of $BiFeO_3$ ceramics"
publicată în
Applied Physics Letters

PREMIUL CENTRULUI DE EXCELENŢĂ CARPATH PENTRU ANUL 2011

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Profesor Dr. Alexandru STANCU

2011

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Centre for Applied Research in Physics and Advanced Technologies

CARPATH
IASI - ROMANIA

Se acordă domnului

Leontin PĂDURARIU

Pentru lucrarea
"Tailoring non-linear dielectric properties by local field engineering in anisotropic porous ferroelectric structures"
publicată în
Applied Physics Letters *de către*
Leontin Pădurariu, Lavinia Curecheriu, Carmen Galassi, şi Liliana Mitoşeriu

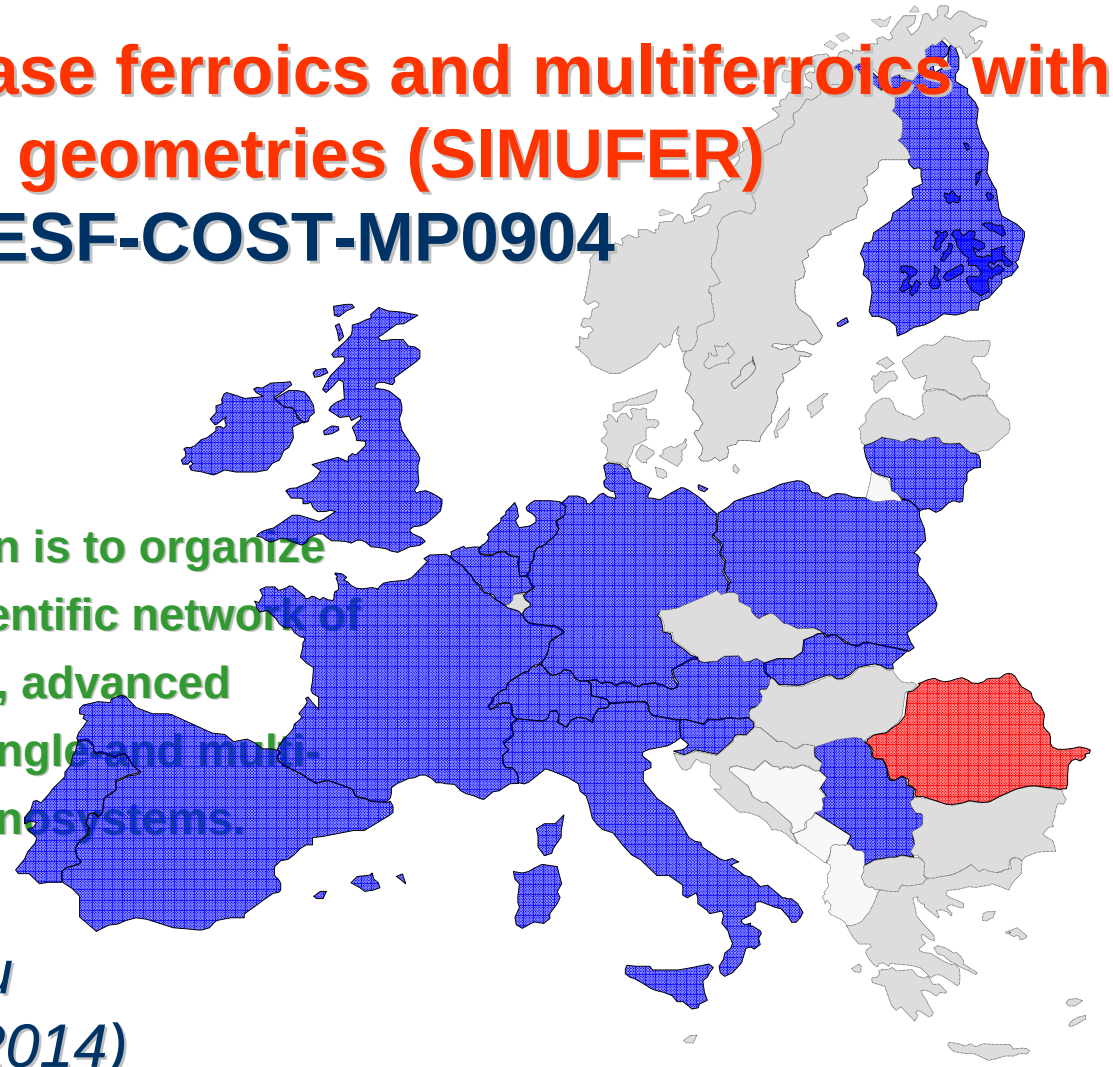
PREMIUL CENTRULUI DE EXCELENŢĂ CARPATH PENTRU ANUL 2012

Director,
Profesor Dr. Alexandru STANCU

2012

Primul proiect FP7-ESF-COST coordonat de ROMANIA:

Single- and multiphase ferroics and multiferroics with restricted geometries (SIMUFER)
FP7-ESF-COST-MP0904



Objectives

The main goal of SIMUFER Action is to organize a multidisciplinary European scientific network of groups experienced in synthesis, advanced characterization and modeling single- and multi-phase ferroic and multiferroic nanosystems.

Chair: Liliana Mitoseriu
(running 2010-2014)

Benefits for being a scientist:

Kroto: ***"The best reason to be a scientist: We are the only truly international family, not beholden to any particular country's interests. It is the universe that is our master."***

"Science only tells you how to think," he concluded. "Others tell you what to think. Think about it."

Prepare yourself to be host

Zhenmian Shao, Univ. Lille, France

Georgio Schileo, Hallam University, Sheffield, UK

Hana Ursic, Raluca Frunza, Josef
Stefan Institute, Slovenia

Daniel Popovici & group, Univ. Osaka, Japonia

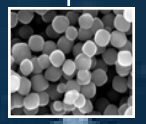
Catalin Harnagea, Univ. Quebecq, Canada

Merry Christmas and a Happy New Year!

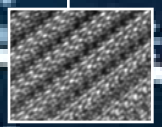
Team bulding...

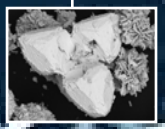
DIELECTRICS
FERROELECTRICS
& MULTIFERROICS
GROUP

$BiFeO_3$



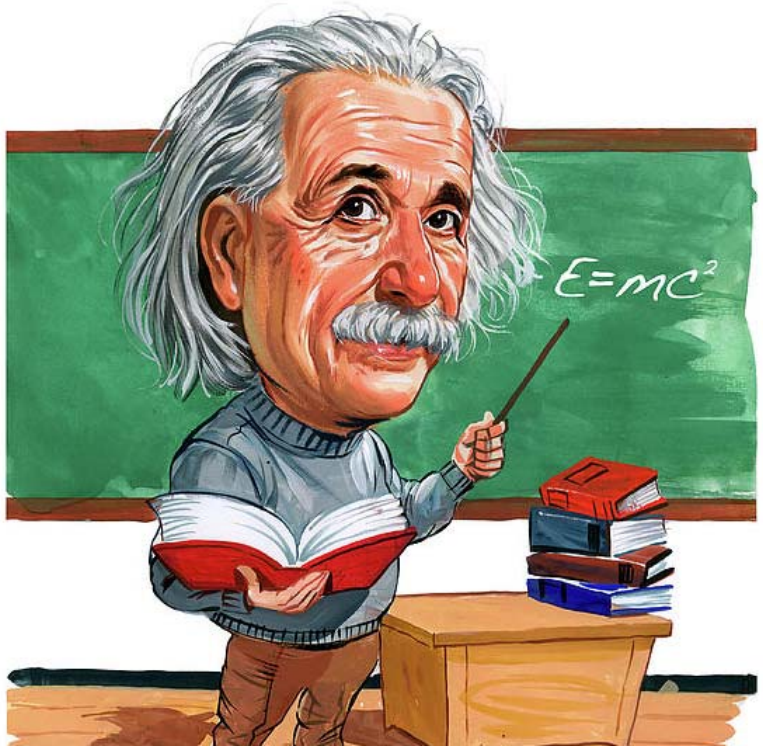
$Ba_{12}Fe_{28}T_{15}O_{84}$





$BaTiO_3$

December 2010



“Try not to become a person of success rather try to become a person of value.”

Albert Einstein