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Ferroelectricity Newsletter, 2002-2005

2002

Ferroelectricity Newsletter / v.10:no.1/2
Winter/Spring 2002

Monterey, California, Naval Postgraduate School

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Ferroelectricity Newsletter

A quarterly update on what's happening in the field of ferroelectricity

Volume 10, Numbers 1&2

Winter/Spring 2002

HIGHLIGHTS OF THE 10TH INTERNATIONAL MEETING ON FERROELECTRICITY IN MADRID

The first *Ferroelectricity Newsletter* of 2002 comes to you as a double issue, mainly because of the large number of presentations (917) at the **10th International Meeting on Ferroelectricity (IMF-10)**, held last September in Madrid, Spain.

The importance of this conference does not only lie in the high number of participants (701), representing 44 countries from the five continents, but also in the fact that the IMF-10 Organizing Committee made a special effort to enable the participation of young researchers, as well as senior scientists from countries with emerging economies, such as Latin America, eastern Europe, northern Africa, and certain Asian countries. Please turn to page 2 for a table and two figures showing details about participants and contributions.

The proceedings of IMF-10 will be published by the international journal *Ferroelectrics* in less than a year after the closing of the meeting. Because of the huge number of presentations, the organizers decided to accept only one paper from each registered participant for publication in *Ferroelectrics*. The 424 articles included in the proceedings reflect the variety of topics presented at the meeting, including the poster sessions, and the specific weight with respect to the number of communications of each topic covered at the conference.

As a special service to our readers, this double issue of *Ferroelectricity Newsletter* lists the authors and titles of all the 917 presentations given at IMF-10. We want to thank Dr. Rafael J. Jiménez Riobóo of the Instituto de Ciencia de Materiales de Madrid for his report on IMF-10, which you will find on pages 2 and 3. Apart from providing an informative write-up, Dr. Jiménez Riobóo distinguished himself by having sent us the piece very soon after the close of the conference.

As usual, we inform you about upcoming meetings: The **7th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity**, the **6th European Conference on Applications of Polar Dielectrics**, and the **10th European Meeting on Ferroelectricity**, as well as an overview of what's happening in the field of ferroelectricity through the Calendar of Events on page 40.

Rudolf Panholzer
Editor-in-Chief

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Ferroelectricity Newsletter

Volume 10, Numbers 1&2
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The *Ferroelectricity Newsletter* is published quarterly by the Naval Postgraduate School, Space Systems Academic Group, Monterey, California, with the support of the Office of Naval Research (ONR).

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<http://www.sp.nps.navy.mil/projects/ferro/ferro.html>

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CONFERENCE REPORT

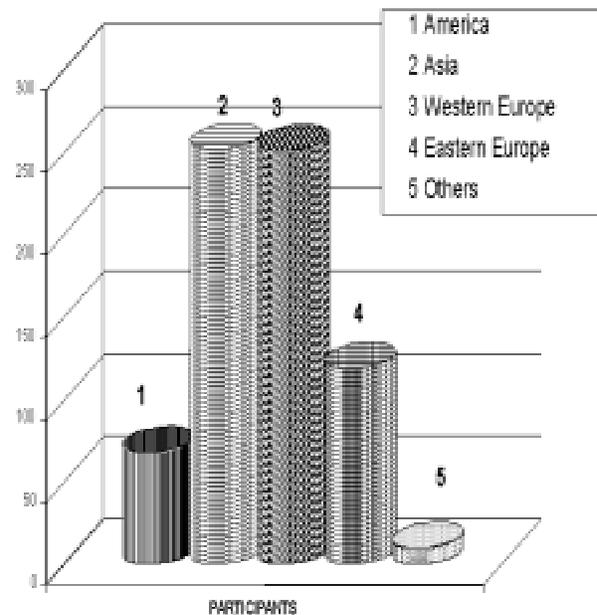
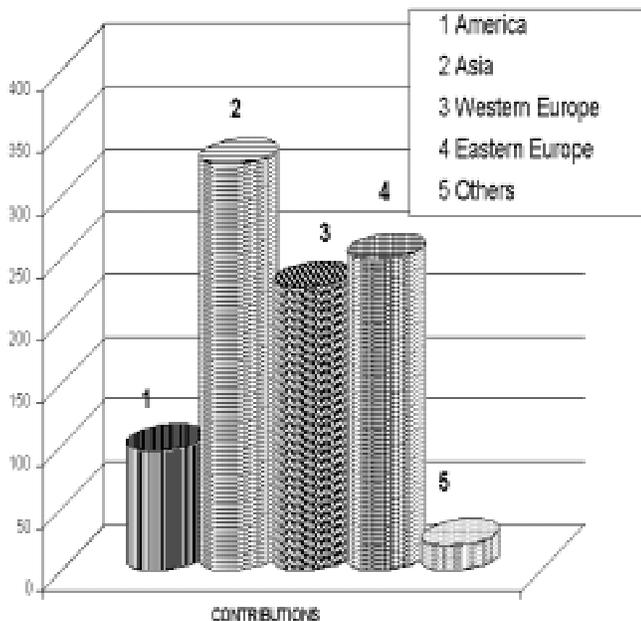
10TH INTERNATIONAL MEETING ON FERROELECTRICITY (IMF-10)

International Meetings on Ferroelectricity have been uninterruptedly taken place every four years since 1960. The aim of these reunions is to provide a global vision of the research activities in the field of ferroelectricity, not only from the point of view of basic research but from the point of view of material preparation and final application of ferroelectrics. These meetings promote the exchange between participants stemming from universities and research centers located on the five continents. The International Advisory Committee decided in 1997 to organize the 10th International Meeting on Ferroelectricity in Spain. Madrid was the selected to be the site of the congress, and from 3-7 September 2001 Madrid hosted researchers from all over the world to participate in this event.

The IMF-10 Organizing Committee made a big effort to enable the participation of young researchers, as well as senior scientists coming from countries with emerging economies, e.g., Latin America, eastern Europe, northern Africa, and Asia. As a result, one third of the participants received some kind of financial support in order to be able to take part in the meeting.

America			Asia			Western Europe			Eastern Europe			Others		
Country	P	C	Country	P	C	Country	P	C	Country	P	C	Country	P	C
USA	34	47	Japan	135	141	Spain	110	75	Russia	41	130	Israel	3	8
Brazil	10	11	Korea	79	103	France	32	48	Poland	29	43	Morocco	3	5
Mexico	13	16	China	18	48	Germany	53	43	Ukraine	8	27	Turkey	2	4
Cuba	1	4	Taiwan	6	12	Portugal	14	20	Czech Rep.	16	20	Egypt	1	2
Canada	2	8	India	2	10	U.K.	16	19	Slovenia	8	8	Australia	1	1
Argentina	5	5	Hong Kong	10	8	Switz.	6	7	Romania	1	4			
Colombia	2	1		1	1	Italy	7	4	Belorussia	1	3			
Ecuador	1	4		1	2	Sweden	3	4	Armenia	2	2			
						Finland	4	4	Estonia	1	1			
						Ireland	1	1	Uzbekistan	1	1			
						Holland	5	1	Latvia	1	1			
										10	9			
TOTAL	68	96		252	325		251	226		119	249		10	20

P: participants
C: Contributions



CONFERENCE REPORT

The high number of participants (701) from 44 countries representing the five continents (see figure and table above), as well as the great number of contributions (917) of high scientific interest and technological significance reflect the importance of this reunion.

The scientific presentations were distributed in the following way: 8 plenary talks, 35 invited talks (30 minutes), 35 invited presentations (20 minutes), 51 oral presentations (15 minutes), and 740 posters. In order to offer a reasonable time frame for this program, oral presentations were held simultaneously each day (three in the morning and three in the afternoon) and poster sessions were held in parallel (one at noon and one in the evening). The opening session took place on Monday, 3 September morning. On Wednesday there was a special plenary symposium, "Great 20th century solid state physicists."

The scientific presentations covered the whole field of ferroelectricity. It is very important to stress the big number of communications devoted to thin film ferroelectric materials. In fact, this topic was the one with the highest number of contributions and the Scientific Programme Commission had to include many of them covering the characterization and fabrication of ferroelectric materials, new applications, as well as sensors and actuators in other sessions. This decision allowed the participants to obtain a multidisciplinary view of the field. Four oral sessions were exclusively devoted to thin films, the same number as those devoted to the classical field of ferroelectricity, phase transition and critical phenomena. Other relevant sessions were dielectric properties and microwaves.

From the very beginning, the aim of the Organizing Committee was to send the IMF-10 proceedings as soon as possible to the journal *Ferroelectrics* so that they could be published less than a year after the closing of the meeting. Because of the huge number of participants, the organizers decided to accept only one paper from each registered participant. As a result, in many cases the participants selected the best contribution to be included in the proceedings. This fact has been certified by the referees in their reports. The IMF-10 Proceedings Committee finally sent 424 articles to *Ferroelectrics*. These 424 articles reflect the variety of topics presented in the poster sessions and conferences, as well as the specific weight (in number of communications) of each topic within the meeting.

The opening session on Monday, 3 September, was devoted to the history of ferroelectricity and its evolution since the beginning of the international meetings. On Wednesday the attention of the meeting was focused on the personalities of prominent solid state physicists of the 20th century. Peter Debye, John Bardeen, L. D. Landau, and the Braggs were the subject of this special symposium.

To finish this brief report about the IMF-10, it is worth mentioning the two decisions taken by the International Steering Committee at the end of the Madrid meeting. The first one is that the next International Meeting on Ferroelectricity (IMF-11) will be held on the American continent, at the frontier between Argentina and Brazil. The second one is the election of Professor Dr. Julio Gonzalo (chairman of IMF-10) as chairman of the International Steering Committee.

Dr. Rafael J. Jiménez Riobóo
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IMF-10 PAPERS

10TH INTERNATIONAL MEETING ON FERROELECTRICITY (IMF-10)

The 10th International Meeting on Ferroelectricity, held on 3-7 September 2002 in Madrid, Spain, provided an up-to-date general view of the current activity in the field of ferroelectricity and related areas.

The scientific program included three plenary lectures at the opening session, five additional plenary lectures at a special symposium, "Great 20th century solid state physicists," 39 invited talks, 33 invited presentations, 57 oral presentations and more than 700 poster presentations by scientists from all over the world.

The proceedings of IMF-10 will be published in the journal *Ferroelectrics*.

PLENARY LECTURES

Ferroelectrics 1966-2001: An overview

R. Blinc

Phase transitions in ferroelectrics: Some historical and other remarks

V. Ginzburg

On ferroelectrics and high temperature superconductors

K.A. Müller

PLENARY SPECIAL SYMPOSIUM**Great 20th Century Solid State Physicists**

The Braggs

A.M. Glazer

Peter Debye

E. Courtens

John Bardeen

F. Sols

L.D. Landau

V. Ginzburg

The relevance of materials physics

S.L. Jaki

ADVANCES IN THEORY

Recent developments in *ab-initio* calculations in ferroelectrics with effective Hamiltonians

A. Garzia

Bond geometry and charge transfer in hydrogen-bonded ferroelectrics

A. Bussmann-Holder

First-principles calculations on isotope effect on $K_3(H,D)(SO)_2$ of hydrogen-bonded dielectric materials: Approach with dynamic extended molecular orbital method

M. Tachikawa

Novel ferroelectricity in II-VI semiconductor ZnO

A. Onodera

Phase transitions and the domain structure in epitaxial ferroelastic films

A.M. Bratkovsky

Fractal diffusion path and energy landscape for bound charges explain dielectric, NMR, and nonergodic behavior in DRADP glass

V.H. Schmidt

The effect of phonon-electron interactions in electronic charge transport in ferroelectric thin films

M. Dawber

DIELECTRIC & MICRO-WAVE PROPERTIES

Soft mode behavior in $SrTiO_3$ and BST films and ceramics

J. Petzelt

Impurity-induced ferroelectric phase transitions and giant dielectric relaxation in incipient ferroelectrics

V.V. Lemanov

Dielectric dispersion of the new compound betaine rubidium iodide dihydrate

A. Almeida

Dynamic theory of nonlinear response in relaxors

R. Pirc

Phase transitions and dielectric relaxation in dyeing KDP

B.A. Strukov

Strain-induced diffusion of dielectric anomaly in ferroelectric thin films

A. Tagantsev

Low-frequency dielectric properties of Rochelle salt and its deuterated analogue

I.A. Malyshkina

Radio and microwave spectroscopy of the betaine phosphate/betaine phosphite mixed crystal: Influence of deuteration

J. Banys

Temperature dependence of electrical properties for $SrBi_2Ta_2O_9$ thin films

N. Ichinose

IMF-10 PAPERS

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Antiferroelectric thin films and their applications in MEMS

S.B. Krupanidhi

Electromechanical response of ferroelectric thin films: Microscopic vs. local behavior

A. Kholkin

Ferroelectric and electric properties of PZT-ZnO hybrid thin films

S.H. Lee

Ferroelectric medical microsystems

D. Polla

Sol-gel derived SBT films crystallized with low temperatures and short times

L. Calzada

Pulsed laser deposition of epitaxial $\text{SrBi}_2\text{Ta}_2\text{O}_9$ films with controlled orientation

A. Garg

Metal organic chemical vapor deposition of $(\text{BaSr})\text{TiO}_3/\text{Pt}/\text{SiO}_2/\text{Si}_2$ heterostructures

J. Lindner

Thermal focusing and optical bistability in ferroelectrics

J. Scott

The effect of repeated sol infiltrations on the microstructure and electrical properties of PZT composite sol-gel films

R.W. Whatmore

Top electrode induced self-polarization in CSD processed SBT thin films

R. Jiménez

Structural and dielectric properties

of $(\text{BaTiO}_3/\text{SrTiO}_3)_{15}$ superlattices

R. Pantou

Chemical solution deposition of ferroelectric thin films: State of the art and recent trends

T. Schneller

PZT-based thick films on silicon

M. Kosec

PHASE TRANSITIONS & CRITICAL PHENOMENA

Atomistic mechanism of relaxor ferroelectrics

T. Egami

Low-T ferroelectricity in antiphase domain boundaries of SrTiO_3

E. Courtens

First-principles study of the role of hydrogen in ferroelectric perovskite oxides

C.H. Park

Random fields at transitions from relaxor to glassy and ferroelectric states

W. Kleemann

Empirical modeling of relaxor-ferroelectric behavior of PMN-PZ ceramics

V.K. Wadhawan

Bioferroelectricity, nanotechnology and related problems

V.S. Bystrov

Thermodynamic instability of relaxation processes TGS near Curie point

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On the morphotropic phase boundaries

Y. Ishibashi

Ferroelectric ceramics: A crash of the thermodynamic approach and necessity of using the statistical approach

A.N. Turik

The structural phase transitions sequence of bis-butylammonium tetrachloro cuprate $(\text{C}_4\text{H}_9\text{NH}_3)_2\text{CuCl}_4$

M.J. Tello

Effect of oxygen octahedral tilting on the properties of Sr-doped PZT ceramics

H. Zheng

Pyroelectric response of PZT-PVDF nanocomposites of (0-3) connectivity

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The mechanism of proton conductivity in quasi-one-dimensional hydrogen-bonded crystals

D. Michel

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Mesoscopic structures in ferroelastic and coelastic materials

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X-diffraction quantitative analysis of Ca-modified lead titanate thin structures combining texture, structure and stress determinations

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Accurate charge densities of crystalline materials obtained by third generation Sr and MEM/Rietveld analysis

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IMF-10 PAPERS

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A new candidate material for use in ferroelectric random access memory (FRAM): Lanthanum-substituted bismuth titanate

T.W. Noh

Langmuir-Blodgett ferroelectrics

S. Ducharme

Phase transitions and microscopic environments in TiH_2PO_4 (TDP) and TiH_2AsO_4 (TDA) systems

C.E. Lee

50 YEARS OF PZT

Low symmetry phases in PZT and related piezoelectric systems

B. Noheda

The new monoclinic phase and elastic-matching features in $\text{PbZr}_{1-x}\text{Ti}_x\text{O}_3$ solid solutions

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Processing of porous PZT materials for underwater acoustics

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Oxygen vacancies migration influence upon some dielectric properties of perovskite oxide thin films

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Ca- and La-modified lead titanate sol-gel thin films by UV-assisted processing for piezoelectric sensors

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Maxwell-Wagner piezoelectric relaxation in ferroelectric heterostructures

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Piezoelectric properties of the modified $\text{SrBi}_2\text{Nb}_2\text{O}_9$ ceramics

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Fine mechanisms of polarization switching in KTiOPO_4 ferroelectric crystals

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Domain related nonlinear effects in piezoelectric materials

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Nanoscale theory of ferroelectric surface predicting skin-deep quantized twodimensional electron gas

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Nanoscale measurement of three-dimensional ferroelectric polarization distribution using scanning nonlinear dielectric microscopy

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A sublattice model for the incom-
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Ferroelectric behavior of P(VDF-
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Domain response features of
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Stress induced depolarization of
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Ferroelastic phase transition in a
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Direct observation of fluctuations in
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Phase diagrams of thick epitaxial
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Motion of extended defects in
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Photo-induced ferroelectricity at
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M.H. Lemée-Cailleau

Ab initio quantum mechanical
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Directional dispersion of polar
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Surface phonons in ferroelastic
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Ferroelectric soft modes and central
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S. Kamba

Neutron, X-ray, and Raman studies
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C. Menoret

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Ferroelectric ceramic/polymer composite materials and their electro-active properties

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Phonon spectra and phase transitions in $\text{CuInP}_2(\text{Se}_x\text{S}_{1-x})_6$ and $\text{Sn}_2\text{P}_2(\text{Se}_x\text{S}_{1-x})_6$ ferroelectrics

Y. Vysochanskii

Novel BST:MgTiO₃ composites for frequency agile applications

E.F. Alberta

Phase transitions in the ferroelectric lead-rich PbTiO_3 - $\text{Na}_{0.5}\text{TiO}_3$ solid solutions

S. Sad

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Current status of FRAM development and future direction

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Conversion of low-grade heat to electricity using pyroelectric copolymers

M. Ikura

Morphotropic phase boundary materials: Device applications

K. Sambasivarao

Novel piezoelectric actuators

A. Safari

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Transition mechanism in ferroelectrics with N-HN⁺ hydrogen bonding

M. Szafranski

Elementary excitations in solids with incommensurate phases as revealed by NMR

J. Petersson

Interaction between ferroelectricity and nonstoichiometry in lithium niobate and related compounds

B. Elouadi

EPR studies of the order-disorder behavior of chromium-doped dimethylammonium gallium and aluminum sulfate hexahydrate (DMAGAS and DMAAS)

G. Völkel

OPTICAL PROPERTIES

Ferroelectricity in unconventional liquid crystal and superconducting phases

P. Toledano

Electrical characteristics of sol-gel derived (100) oriented $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ thin films on LaAlO_3 (100) substrates

R.S. Katiyar

Official characterization of PZT 65/35 thin films deposited by sol-gel

I. Boerasu

Defeating the ionic conductivity of tunnel-structured polars for optical applications: Theory and experiments

Q. Jiang

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Critical heat anomaly in antiferroelectric liquid crystals crossover and multicritical behaviors

K. Ema

Thermal studies of PbZrO_3 nickel doped

M. Hafid

Development of novel high temperature, high performance piezoelectrics on the basis of structure

R.E. Eitel

Specific heat and heat conductivity of thin ferroelectric films

S.T. Davitadze

HIGH PRESSURE

Vanishing of transition temperatures in hydrogen bond crystals under high pressure

M. Tokunaga

Dielectric study on pressure-induced phases in $\text{Ca}_2\text{Ba}(\text{C}_2\text{H}_3\text{COO})_6$ (DBA) and $\text{Ca}_2\text{Ba}(\text{C}_3\text{H}_7\text{COO})_6$ (DBB)

K. Gesi

Dielectric properties of KNbO_3 under pressure

E. Moya

RELAXORS AND GLASSES

Some new $\text{Pb}(\text{B}_3+\text{Nb})\text{TiO}_3$ - PbTiO_3 systems: Ceramics and thin films

A. Sternberg

Effect of microstructure on dielectric, relaxor, ferroelectric and piezoelectric properties of La_2O_3 modified $x\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ -(1-x) $\text{Pb}(\text{Zr}_{0.55}\text{Ti}_{0.55})\text{O}_3$ systems

K.V.S. Ramam

Nanocrystalline ferroelectric/relaxor multilayers

H. Schmitt

STRUCTURAL AND RELATED PROPERTIES

Dynamic elastic response of inhomogeneous structures

M.W. Schranz

IMF-10 PAPERS

Temperature evaluation of structure and lattice dynamics of cubic relaxor ferroelectrics

S.B. Vakhrushev

Hetero-epitaxial MOCVD growth of $\text{PbZr}_x\text{Ti}_{1-x}\text{O}_3$ film on SrTiO_3 for electrooptical devices

M. Moret

POSTERS

ADVANCES IN THEORY

Dipolar glass phases and nonergodic behavior of $\text{BP}_{1-x}\text{BA}_x$

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Charge transfer in perovskite oxides: Mode softening and lattice instability

A. Bussmann-Holder

Isotope induced ferroelectricity in quantum paraelectrics

A. Bussmann-Holder

Ab initio design of perovskite alloys with optimum electromechanical properties

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Model of appearance of ferroelectricity in amorphous materials

B.M. Darinskii

Correlation between the Rhodes-Wolfarth ratio and effective field higher order contributions in PZT ferroelectrics

C. Arago and J.A. Gonzalo

Photorefractive double phase conjugation using a novel quasi-geometrical model of beam fanning in barium titanate

C. Mailham, N. Fressengeas, M.

Goetz, and G. Kugel

Saturation of an inhomogeneously broadened dielectric response in disordered systems

I.V. Kondakova

Thermodynamics of the cluster model for SASD and SASeD type crystals

N.A. Korinevskii

A microscopic model for elastic, piezoelectric and dielectric properties of Rochelle-type crystals

R.R. Levitskii

New type charge transfer states in ferroelectric oxides: Theoretical and experimental studies of charge transfer vibronic exciton phase

V.S. Vikhnin

Simulation of the charge transport across grain boundaries in P-type SrTiO_3 under large-signal DC load

Th. Holbling

A six-well model with elongated nanodomains

S.A. Prosandeev

Processes of aging and degradation of ferroelectric materials

A.S. Sidorkin

Dipole kinetics and relaxation in $(\text{K}, \text{Li})\text{TaO}_3$ crystals

A.V. Turik

Ferroelectric-antiferroelectric superlattice from Ising model in a transverse field

C.L. Wang

Scaling and universality class in Ising nanotubes

C. Garcia, M.I. Marques, and

J.A. Gonzalo

MD calculation for modulated phase in quartz

D.A. Semagin

Finite-element analysis for ceramic densification process

H. Camacho

Fluctuation effects in ferroelectric polarization switching

M.I. Molotskii

O-site disorder in mixed perovskite $\text{A}(\text{B}'\text{B}'')\text{O}_3$ from *ab initio* cluster calculations

O.E. Kvyatkovskii and M.G. Shelyapina

Stark-ladder resonances in piezocomposite systems

G. Monsivais

The origin of ferroelectricity in hydrogen-bonded KDP crystals

R.L. Migoni

Competition between short range order and coulomb interaction in $\text{A}(\text{B}'_x\text{B}''_{1-x})\text{O}_3$ ferroelectric relaxors

E.E. Tomau

Electronic and dynamical properties of BaZrO_3 and BaHfO_3 from first principles

S. Tinte

Ferroelectricity and domain wall motion in ultrathin perovskite epitaxial films

M.G. Stachiotti

On the effective properties of matrix ferroelectric composites

V.M. Levin and A.G. Luchaninov

IMF-10 PAPERS

Influence of mobility of the 90° domain walls on the effective properties of PbTiO_3 ceramics

V.I. Aleshin and A.G. Luchaninov

Computational model of the novel perovskite sodium bismuth titanate

V.I. Jennings

A novel approach to modeling the polarization in ferroelectric materials

V. Meyer

A model of polar clusters in ferroelectric relaxors: Interacting charge transfer and lattice distortions and local configuration instability effects.

V.S. Vikhnin

Computer simulation of atomic structure of amorphous PbTiO_3

V.V. Posmetyev

Anisotropy of electromechanical properties in ferroelectrics and related materials with inhomogeneity on different levels: A review

V.Yu. Topolov

Modeling very high piezoelectric activity in heterophase $x\text{PbTiO}_3$ -($1-x$) $\text{Pb}(\text{Zn}_{1/3}\text{Nb}_{2/3})\text{O}_3$ crystals

V.Yu. Topolov

3-3-composites "ferroelectric ceramic-polymer" as potential high-sensitive piezoactive materials

V.Yu. Topolov and C.R. Bowen

Polarization and pyroelectricity of temperature-graded ferroelectric film

C.L. Wang

Phase transition properties of

ferroelectric superlattice from the transverse Ising model with four-spin interactions

C.L. Wang

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MANUFACTURING LICENSES

AVAILABLE FROM THE DEPARTMENT OF THE ARMY

The Department of the Army announces the general availability of exclusive, partially exclusive or non-exclusive licenses (manufacturing only) relative to U.S. Patent No. 5,486,491, issued 23 Jan 1996, entitled "Ceramic Ferroelectric Composite Material - BSTO-ZRO2"; U.S. Patent No. 5,312,790, issued 17 May 1994, entitled "Ceramic Ferroelectric Material"; and U.S. Patent No. 5,427,988, issued 27 Jun 1995, entitled "Ceramic Ferroelectric Composite Material -BSTO-MGO". Licenses shall comply with 35 U.S.C. 209 and 37 CFR 404.

For further information contact:

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Attn: AMSRL-CS-TT/Bldg. 459, Aberdeen Proving Ground, Maryland 21005-5425; phone: +410-278-5028

UPCOMING MEETINGS**The 7th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity (RCBJSF-7)****24 - 28 June 2002****St. Petersburg, Russia**

The 7th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity succeeds six previous meetings, in Novosibirsk (1976 and 1984), Kyoto (1980), Tsukuba (1988), Moscow (1994), and Noda (1998). The program of the symposium will cover all the basic and applied aspects of ferroelectricity and related phenomena. Both oral and poster sessions are planned.

Organizing Committee**Honorary Chairmen:**

K.S. Aleksandrov, L.A. Shuvalov, J. Kobayashi, and Y. Ishibashi

Chairmen:

V.V. Lemanov and Y. Uesu

Vice-Chairmen:

A.S. Sigov, B.A. Strukov, and T. Yagi

Program Committee:

S.V. Vakhrushev and A. Onodera

Proceedings

The proceedings of the symposium will be published in the international journal *Ferroelectrics*.

Contact

Organizing Committee of RCBJSF-7, Ioffe Physico-Technical Institute

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phone: +7-812-247-9377; fax: +7-812-247-5894; email: RCBJSF@vul.ioffe.rssi.ru

www.ioffe.rssi.ru/RCBJSF**6th European Conference on Applications of Polar Dielectrics (ECAPD-6)****2 - 5 September 2002****Aveiro, Portugal**

The 6th European Conference on Applications of Polar Dielectrics (ECAPD-6) continues a series of meetings initiated by Prof. Peter Günter: Zürich (Switzerland) -1988; London (United Kingdom) - 1992; Bled (Slovenia) - 1996; Montreux (Switzerland) - 1998; and Riga (Latvia) - 2000. The main purpose of ECAPD is to bring together scientists and engineers involved in fundamental and application-oriented research on polar dielectrics and to facilitate further development of this important class of materials.

The conference will comprise 12 technical sessions, including plenary talks, invited talks, and contributed talks covering original unpublished work related to conference topics. Contributed talks will be accepted in either oral or poster form. Posters will be accompanied by short oral presentations (2-3 minutes). Companies willing to exhibit their products and services are requested to contact the Organizing Committee.

Topics

- Materials research on inorganic and organic single crystals, thin films, ceramics, polymers, composites, and liquid crystals
- Fundamental research on application-oriented physical properties of dielectrics: ferro-, piezo- and pyroelectric properties, electrooptical and nonlinear effects, photorefractivity, and photoconductivity

UPCOMING MEETINGS

- Device research: Piezoelectric transducers, smart sensors and actuators, pyroelectric detectors, electrooptic modulators and displays, 2D and 3D optical storage devices, optical signal processors, optical frequency converters, periodically poled ferroelectric devices, ferroelectric memories and integrated optical devices, microelectromechanical systems
- Processing and fabrication technologies, technology transfer from research to industry

Chairman

Dr. Andrei Kholkin, Department of Ceramic and Glass Engineering
University of Aveiro, 3810-193 Aveiro, Portugal
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Mrs. Alexandra Vale, Conference Secretariat, Department of Ceramic and Glass Engineering
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www.cv.ua.pt/ecapd6

**The 10th European Meeting on Ferroelectricity (EMF2003)
3 - 8 August 2003
Cambridge, UK**

The conference will cover topics across the breath of ferroelectric research interests from fundamentals to advanced applications. We expect that EMF 2003 will be the largest European ferroelectrics conference ever. It will include a wide range of special sessions, covering subjects in ferroelectrics, pyroelectrics, piezoelectrics and ferroelastics. There will be opportunities for presenting work in various embodiments, including single crystals, bulk ceramics and thin films.

Topics

- General theory and modelling
- Phase transitions, critical phenomena, and phase diagrams
- Ferroelectric minerals
- Transducers and actuators
- Precursor chemistry
- Deposition and processing
- Electrical testing and characterization
- NMR and EPR
- Optics and spectroscopy
- Nanoscale materials
- Polymeric and liquid crystal ferroelectrics
- Domains and domain walls

All of the information about EMF2003 will be made available from the conference website, which will be regularly updated as the conference approaches, and much of the essential information will also be disseminated as email circulars. If you received this message you will also receive the later circulars (informing you of abstract deadlines, arrangements for registration etc).

UPCOMING MEETINGS

If you know of another researcher who would benefit from receiving the circulars please pass on their email address to the conference helpdesk (EMF2003@the-conference.com) run by Cambridge Publications and they will ensure that these names are added to the mailing list. Alternatively, they may register their interest themselves via the conference website.

Convenors

Jim Scott and Ekhard Salje

phone: +44-1223-333-438; fax: +44-1223- 333-438; email: EMF2003@the-conference.com

www.the-conference.com/2003/EMF2003/

18th Conference on Crystal Growth and Epitaxy

2 - 5 June 2002

Stanford Sierra Camp, Fallen Leaf Lake, California, USA

Topics

- Thin films and nanostructures
- Impurity interactions at surfaces
- Organic films and crystal surfaces
- Crystal engineering
- Current issues in modeling molecular assembly
- Fluid-solid interfaces and biological crystallization

www.crystalgrowth.org

Ferroelectricity Newsletter

including all back issues is available on Internet

<http://www.sp.nps.navy.mil/projects/ferro/ferro.html>

in Adobe Acrobat PDF file format

The PDF file format maintains the graphics and organization of the printed newsletter. Adobe Acrobat Reader is a helper application distributed free for Web browsers. Acrobat is available for Macintosh, Windows, DOS, SGI, and Sun SPARC operating systems.

If you want a hard copy of the newsletter, you must let us know by

email: liebmann@redshift.com or rpanholzer@nps.navy.mil

mail: Hannah Liebmann

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Winter/Spring 2002

Ferroelectricity Newsletter

CALENDAR OF EVENTS 2002

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| May 28-
Jun 1 | <ul style="list-style-type: none">International Joint Conference on the Applications of Ferroelectrics 2002 (IFFF 2002), Nara, JapanInternational Symposium on the Applications of Ferroelectrics (ISAF XIII 2002)International Symposium on Integrated Ferroelectrics (ISIF XIV 2002)The meeting on Ferroelectric Materials and their Applications (FMA XIX 2002)Contact: Prof. Tadashi Shiosaki: fma@ms.aist-nara.ac.jp; website: fma.aist-nara.ac.jp |
| Jun 2-5 | <ul style="list-style-type: none">18th Conference on Crystal Growth and Epitaxy, Stanford Sierra Camp, Fallen Leaf Lake, California, USA (see p. 39) |
| Jun 10-14 | <ul style="list-style-type: none">8th IUMRS International Conference on Electronic Materials (IUMRS-ICEM2002), Xi'an, ChinaContact: Prof. Cheng Jianhua: icem2002@btamail.net.cn; http://www.c-mrs.org.cn/icem2002 |
| Jun 24-28 | <ul style="list-style-type: none">7th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity (RCBJSF-7), St. Petersburg, Russia (see p. 37) |
| Aug 25-28 | <ul style="list-style-type: none">Electroceramics VIII Conference, Rome, Italy (see <i>Ferroelectricity Newsletter</i>, Vol.9, No. 4, p. 17) |
| Sep 2-5 | <ul style="list-style-type: none">6th European Conference on Applications of Polar Dielectrics (ECAPD-6), Aveiro, Portugal (see p. 37) |
| Sep 15-19 | <ul style="list-style-type: none">7th International Symposium on Ferroic Domains and Mesoscopic Structures (ISFD-7), Peninsula of Giens, French Riviera (see <i>Ferroelectricity Newsletter</i>, Vol.9, No. 4, p. 18) |

2003

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| Aug 3-8 | <ul style="list-style-type: none">10th European Meeting on Ferroelectricity (EMF2003), Cambridge, UK (see p. 38) |
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