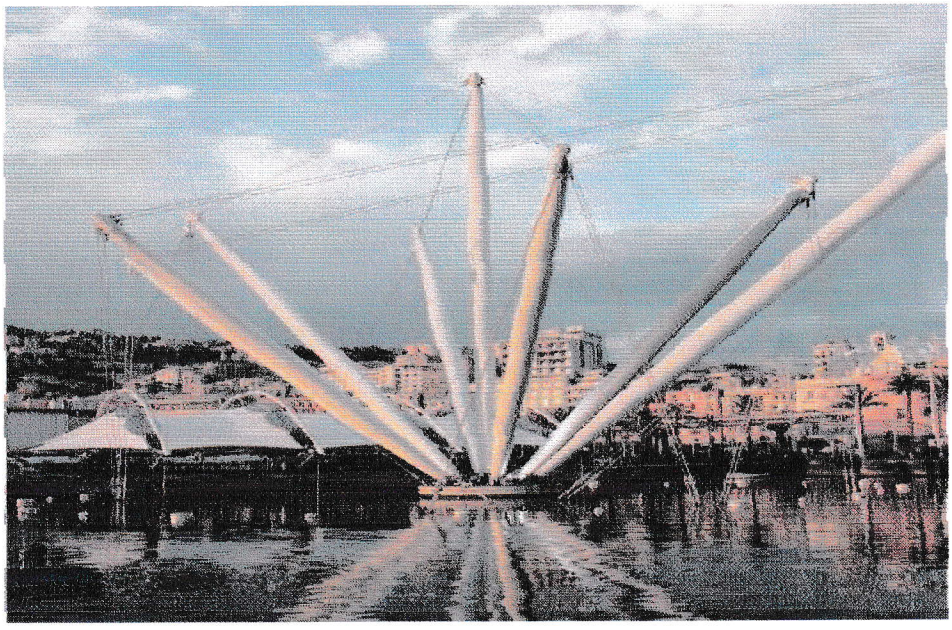
COST MP0904:

Single- and multiphase ferroics and multiferroics with restricted geometries (SIMUFER)

Closing Conference and Final Management Committee Meeting

CNR-IENI: Institute for Energetics and Interphases, Genoa, Italy
30th January – 1st February, 2014

Book of abstracts



Closing COST MP0904 SIMUFER Conference and final MC meeting „Single-and multiphase ferroics and multiferroics with restricted geometries"

Institute of Energetics & Interphases IENI-CNR Genoa (IT)

January 30th - February 1st, 2014

Dear Participants,

Welcome to the last events of our COST MP0904 Action, Closing Conference and final MC meeting!

Our COST Action Single-and multiphase ferroics and multiferroics with restricted geometries "SIMUFER" (2010-2014) will conclude on May 30th, 2014. During its lifetime, its open and flexible character allowed both the consolidation of traditional collaboration but mostly, to start a large number of new projects and multi-lateral collaborations. Their large majority resulted in a high level of scientific knowledge, top publications and a large number of funded joint projects. Some of the most interesting collaborative results will be presented to this last scientific event, together with new results shown by a few top scientists from outside the Action

On behalf of the Managament Committe, we can state that our COST Action network allowed, encouraged and supported an active exchange of people and knowledge, sharing of equipment, samples and fruitful discussions concerning the results. In particular, our Action has been recognised as one of the best not only for its scientific outputs, but also for promoting and supporting a very active participation of young researchers in all the Action-related activities: four conferences exclusively dedicated to young researchers, two training schools, more than 35 short term missions have been assigned to early stage researchers. Now it is the time to conclude our COST Action, to discuss and evaluate all our results during the Final MC meeting, to draw a few roadmaps in our field and to prepare for next forthcoming activities.

As it was pointed out within the Materials, Physical and Nanosciences Domain Committee meetings, our Action's outputs are highly appreciated. Therefore, it was the only one Action from this domain chosen to be presented to the policy makers at the COST Science Night 2013 in Brussels. A strategic COST Workshop (MP0904 Action Showcase) to show the main scientific achievements of this Action and possible future roadmaps in our research field will be organised as a satellite event in Bucharest, during the Conference Electroceramics XIV (June, 16-20th 2014).

On behalf of the Organising Committee, we warmly welcome your participation to the Closing COST MP0904 Conference in Genoa, we wish you an interesting and fruitful conference and a nice stay in Genoa and we wait for you to the Action showcase in Bucharest (16-20 June 2014).

Chairs:
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Prof. Paolo NANNI, IENI-CNR Genoa (IT)
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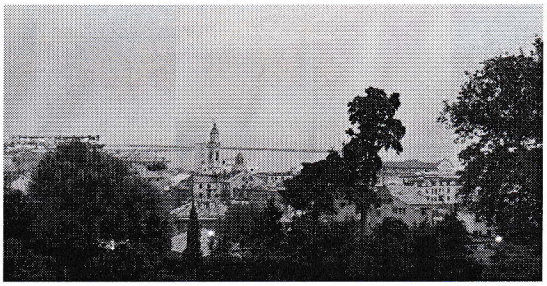

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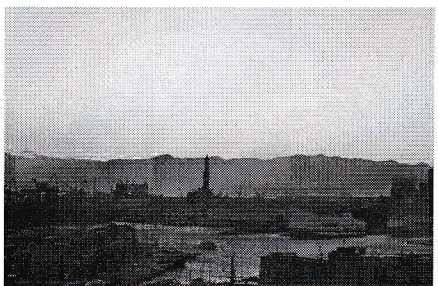

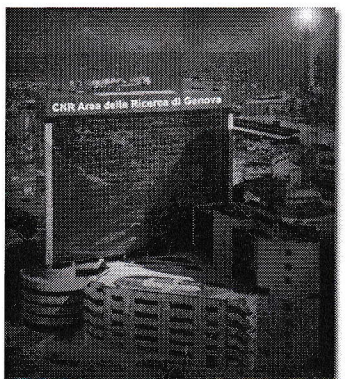

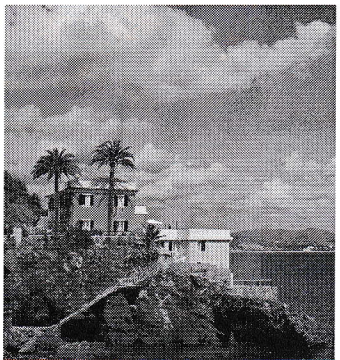

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Influence of Processing Method on Dielectric Properties of $BaBi_4Ti_4O_{15}$ Ceramics

J.D. Bobić[1], M.M. Vijatović Petrović[1], N. Ilic[1], A. Dzunuzovic[1], R. Grigalaitis[2], J. Banys[2], B.D. Stojanović[1]

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Bismuth layer-structured ferroelectrics (BLSF), first described by Aurivillius, have attracted much attention for their application in non-volatile random access memory and high temperature piezoelectric devices. $BaBi_4Ti_4O_{15}$ (BBT) is a well-known member of BLSFs. Considering the grain size affect reduction of conductivity of most of BLSF compounds [1] this paper dealing with effect of mechanochemical assisted synthesis method on electrical, dielectric and conductive properties of BBT compounds.

BBT was prepared by solid state reaction from mixture of oxides: BaO, TiO_2 and Bi_2O_3 which was previously milled for 6 h (BBT-MA). The mixture was heated at 850 °C for 4 h. As a comparison, the same ceramics were prepared throught conventional solid state reaction (BBT-SS). The same oxides mixture was homogenized for 24 h in isopropanol and calcinated at 950 °C for 4 h which is 100 °C higher temperature than for MA procedure. Sintering process was carried out at 1130 °C for 1 h in both synthesis methods. Smaller plate like grains are noticed in BBT ceramics prepared from powders obtained by MA process comparing to SS process (Fig 1.). In the temperature dependence of the dielectric permittivity, the maximum associated to the Curie temperature was higher and narrower in ceramics prepared by SS method. Influence of the grain and grain boundaries contribution to the dielectric behaviour in both ceramics were analyzed through impedance spectroscopy.

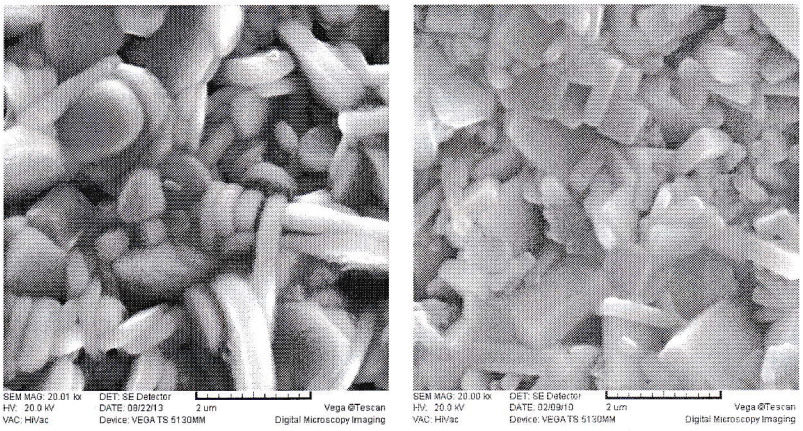

Fig 1. SEM images of BBT-SS (left) and BBT-MA ceramics (right)

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References

[1] T. Jardiel, A.C. Caballero, M. Villegas, J. Ceram. Soc. Jpn., 116, 511-518 (2008)