Accepted Manuscript

On questionable ferroelectric and piezoelectric properties in single crystals

Zbigniew Tylczyński, Aram M. Petrosyan, Bikshandarkoil R. Srinivasan

PII: S0022-0248(18)30276-8

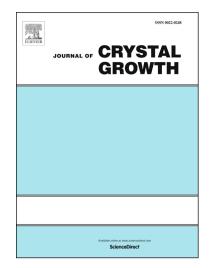
DOI: https://doi.org/10.1016/j.jcrysgro.2018.06.002

Reference: CRYS 24624

To appear in: Journal of Crystal Growth

Received Date: 15 November 2017 Revised Date: 29 May 2018

Accepted Date: 1 June 2018



Please cite this article as: Z. Tylczyński, A.M. Petrosyan, B.R. Srinivasan, On questionable ferroelectric and piezoelectric properties in single crystals, *Journal of Crystal Growth* (2018), doi: https://doi.org/10.1016/j.jcrysgro. 2018.06.002

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

CCEPTED MANUSCRIPT

On questionable ferroelectric and piezoelectric properties in single crystals

Zbigniew Tylczyński^{a1}, Aram M. Petrosyan^b, Bikshandarkoil R. Srinivasan^c

^aFaculty of Physics, Adam Mickiewicz University, Umultowska 85, Poznań, Poland

^bInstitute of Applied Problems of Physics, NAS of Armenia, 25 Nersessyan Str., Yerevan,

Armenia

^cDepartment of Chemistry, Goa University, Goa 403206, India

Keywords: B2. Ferroelectric materials, B2. Piezoelectric materials.

Abstract

In this short review, a critical analysis of the purported ferroelectric and piezoelectric

properties of crystals which have been published is critiqued.

1. Introduction

Several papers have been published in peer-reviewed journals, especially in the journals

devoted to investigations of materials, which have presented some misconceptions concerning

the formation and properties of ferroelectric and piezoelectric crystals. For example, in

numerous publications the assumption that if two substances are dissolved in water at the ratio

1:1, a new compound will crystallize that will contain these substances at the same ratio. This

assumption is almost always incorrect and any new compound needs to be subjected to

elementary chemical analysis and X-ray structural determination. Without such procedures, a

verified composition of the obtained crystal is impossible. If presented, the elemental

chemical analysis is incomplete in limited to a few of the elements present in this "new"

crystal. Typically, authors can claim that narrow diffraction peaks in a powder pattern reflect

a perfect crystallographic structure. Such conclusions are often incorrect.

¹ Tel.: +48 618295199.

E-mail address: zbigtyl@amu.edu.pl

Download English Version:

https://daneshyari.com/en/article/8148419

Download Persian Version:

https://daneshyari.com/article/8148419

<u>Daneshyari.com</u>