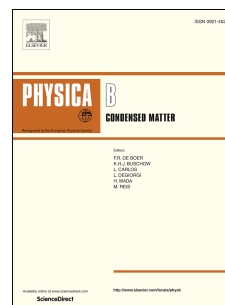


Accepted Manuscript

Dielectric and Raman spectroscopy of TlSe thin films

Aysen E. Ozel, Deniz Deger, Sefa Celik, Sahin Yakut, Binnur Karabak, Sevim Akyüz, Kemal Ulutas



PII: S0921-4526(17)30776-7

DOI: [10.1016/j.physb.2017.10.043](https://doi.org/10.1016/j.physb.2017.10.043)

Reference: PHYSB 310400

To appear in: *Physica B: Physics of Condensed Matter*

Received Date: 8 August 2017

Revised Date: 9 October 2017

Accepted Date: 10 October 2017

Please cite this article as: A.E. Ozel, D. Deger, S. Celik, S. Yakut, B. Karabak, S. Akyüz, K. Ulutas, Dielectric and Raman spectroscopy of TlSe thin films, *Physica B: Physics of Condensed Matter* (2017), doi: 10.1016/j.physb.2017.10.043.

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Aysen E.Ozel^a, Deniz Deger^{a*}, Sefa Celik^b, Sahin Yakut^a, Binnur Karabak^a, Sevim Akyüz^c,
Kemal Ulutas^a

^a Physics Department, Science Faculty, Istanbul University, Vezneciler, 34134, Istanbul, Turkey

^b Electrical-Electronics Engineering Department, Engineering Faculty, Istanbul University, 34320, Avcilar, Istanbul, Turkey

^c Physics Department, Science and Letters Faculty, Istanbul Kultur University, Atakoy Campus, Bakirkoy, 34156, Istanbul, Turkey

Abstract

In this report, the results of Dielectric and Raman spectroscopy of TlSe thin films are presented. The films were deposited in different thicknesses ranging from 290Å to 3200Å by thermal evaporation method. The relative permittivity (dielectric constant ϵ_r') and dielectric loss (ϵ_r'') of TlSe thin films were calculated by measuring capacitance (C) and dielectric loss factor ($\tan \delta$) in the frequencies ranging between 10^{-2} Hz to 10^7 Hz and in the temperature ranging between 173 K to 433K. In the given intervals, both the dielectric constant and the dielectric loss of TlSe thin films decrease with increasing frequency, but increase with increasing temperature. This behavior can be explained as multicomponent polarization in the structure. The ac conductivity obeys the ω^s law when $s (s < 1)$. The dielectric constant of TlSe thin films is determined from Dielectric and Raman spectroscopy measurements. The results obtained by two different methods are in agreement with each other.

* Corresponding Author

E-mail: deger@istanbul.edu.tr

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