

4<sup>th</sup> International Conference on

# Condensed Matter and Materials Physics

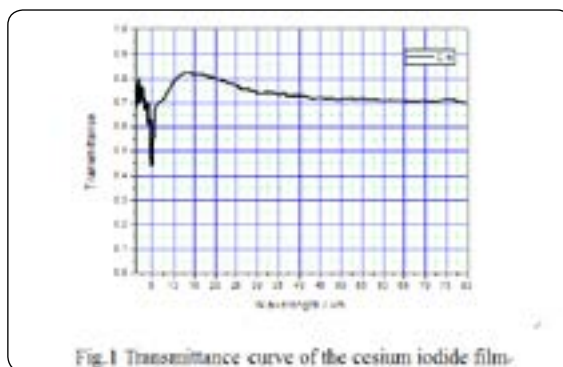
August 16-17, 2018 | London, UK

## Study on the infrared optical properties and the microstructure of cesium iodide thin film

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The infrared optical properties and the microstructure of cesium iodide (CSI) thin film have been investigated. In this paper, the cesium iodide thin film were prepared on CVD (chemical vapour deposition) diamond substrate by molybdenum boat thermal evaporation in  $2 \times 10^{-3}$  Pa vacuum pressure, while deposition rate was monitored and demonstrated at 2~3 nm/s by quartz crystal oscillation controller. The films were observed and analyzed by the Fourier transform infrared spectrometer, X-ray diffraction analyzer and scanning electron microscopy. CSI film infrared spectra transmittance curve shows that the cesium iodide transparent area can be up to 80 micron which is the far infrared region. When affected by the moist air, the spectral curve shows the appearance of the infrared absorption band in the ranges of 2.66~2.85  $\mu\text{m}$ . XRD results indicate the cesium iodide film is polycrystalline. And the scanning electron microscopy results shows that the average grain size of the cesium iodide film become larger after the cesium iodide film is placed in the moist air.



### Recent Publications

1. Gu Mu et al. (2010) Crystal growth and characterization of CuI single crystals by solvent evaporation technique. Mater. Res. Bull. 45(5):636-639.
2. Wei Zong Ying and Zhu Ren Yuan (1993) Study on undoped CsI crystals. Nucl. Instrum. Methods. Phys. Res. A. 326:508-512.
3. H H Luo et al. (2014) Optical character study of silicon optical films in different deposited temperature. Acta Optica Sinica. 34(4):0431001.

### Biography

Haihan Luo obtained his BS Degree in Physics Department from Nanjing University in 2006 and his PhD Degree in Physical Electronics from University of Chinese Academy of Sciences in 2012 (China) respectively. He is currently working in the Department of Optical Coatings and Materials at the Shanghai Institute of Technical Physics of the Chinese Academy of Sciences. His research interests are focused on micro-nano integrated optical devices, far infrared optical interference filters design and manufacturing and optical properties analysis of thin film materials..

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