

Nanotechnology and Materials Engineering

July 26–27, 2021 | Webinar

Volume: 10

Influence of the Annealing Temperature on the thickness and roughness of La₂Ti₂O₇ Thin Films

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In this work, PLD technique was used to fabricate thin films La₂Ti₂O₇ In order to verify the impact of the substrate annealing temperature on the thickness and roughness of La₂Ti₂O₇ thin films. A group of LTO Thin films was grown on Si (100) substrates successfully via pulsed laser deposition technique (PLD) at various annealing temperatures. Scanning Electron Microscope (SEM) and Atomic Force Microscope (AFM) were used to investigate the thickness and roughness of La₂Ti₂O₇ thin films, each time. The average thickness of the films was decreased by increasing the annealing temperature linearly; the largest thickness was found to be (231nm) when LTO thin film deposited at 500 0C. The root mean square roughness was increased linearly with the increase of substrate Temperatures. The lowest roughness was found (0.254 nm) when LTO deposited at (500 0C), so the obtained results pointed that the annealing temperature has an influence on the Thickness and roughness of the LTO thin films.

Biography

Mohamed ahmed has completed his master degree at Sudan University of Science and Technology from institute of laser. He is a laser technician at Sudan University of Science and Technology.

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