

## عنوان مقاله:

Population change in the fine structure levels of cesium atoms using chirped laser

## محل انتشار:

مجله نانو ساختارهای اپتوالکترونیکال, دوره 2, شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 10

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## خلاصه مقاله:

Here, the population transfer between two specific levels of Cesium atom under the influence of chirped laser source has been numerically investigated. The main goal of this study is the engineering of the population transfer between the  $6^2S_{1/2}$  and  $6^2P_{1/2}$  levels of Cesium which is corresponding to its D1 transition line using a chirped laser source. Constructing the system Hamiltonian, as well as the initial and boundary conditions, the time-dependent Schrödinger equations are numerically solved and the population versus time for different physical parameters has been investigated. The final population of each state is calculated and discussed for changing the parameters such as laser intensity, laser frequency and chirping parameter. The results show that using the chirped laser source with tuned parameters, we can arbitrarily control the population of levels.

## کلمات کلیدی:

atomic population transfer, chirped laser, cesium atom, two-level system

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1908173>

