MALATYA
TURGUT ÖZAL
UNIVERSITY

PCFM'20
MALATYA - TURKEY
22-24 SEPTEMBER 2020

CERTIFICATE OF PARTICIPATION

Dear Salim A. Medjber

We would like to thank you for your valuable contributions as a **PARTICIPANT** at the
**3rd INTERNATIONAL CONFERENCE ON PHYSICAL CHEMISTRY AND
FUNCTIONAL MATERIALS (PCFM 2020)**

held on 22-24 September 2020 at Malatya Turgut Özal University, Malatya-Turkey

Assoc. Prof. Bayram GÜNDÜZ
Conference Chairman

Prof. Dr. Aysun BAY KARABULUT
Honorary Chair & Rector

PPO-38

Exact Solution of the Non-Stationary Schrodinger Equation for One Dimensional the Inverse Square Root Potential

S. Medjber[1] and H. Bekkar[2]

[1]*Laboratory of Physics and Material Chemistry, Physics Department, Sciences Faculty, University of M'sila-M'sila 28000, Algeria*
[2]*Faculty of Technology, University of Ferhat Abbas Sétif 1, Sétif 19000, Algeria*

E-mail: medjber_s@yahoo.fr

Abstract: The non stationary Schrodinger equation is exactly solved for the one-dimensional inverse square root potential: $V(x,t) = V_0(t)/\sqrt{x}$. To solve this equation, we use the invariant method. Each of the two fundamental solutions that compose the general solution of the problem is giving by a combination with the non-constant coefficients of two confluent hypergemetric functions of a shift argument. Alternatively, the solution is written through the first derivative of a tri-confluent Heun function. The spectrum energy is giving by: $E_n(t) = E_1(t)n^{-2/3}$. ●

Keywords: Non stationary Schrodinger equation, inverse square root potential, tri-confluent Heun function, Hermite function.