The Abdus Salam International Centre for Theoretical Physics

United Nations Educational, Scientific and Cultural Organization

IAEA International Atomic Energy Agency

**Conference on Frontiers of Nanoscience**
**24 August - 1 September 2015, Trieste, Italy**

# Azimuthal Quantum Number Zero Comparison of First Optical Transition Probability for Nine Spherical Quantum Dots

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Abstract:

Azimuthal Quantum Number Zero AQNZ states of spherical Quantum Dot QD system is derived. An expression for the maximum possible s-states is given and it is dependent on the radius of the QD.
The work also compares calculations of the first Optical transition probabilities of nine AQNZ spherical QDs made from nine ternary semiconductor Alloy, using the Hydrogenic atom model and the Fermi's golden rule for Optical transition between levels.
The highest transition probability obtained is for Indium Arsenide InAs, while the lowest obtained is for Zinc Selenide ZnSe. The result gives a clue that InAs QD will more than other Alloy best function in the Visible light region nanosensor.