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## Particle Beam Caused Charge (IBIC) Microscopy Technique with Energies in the MeV Range for Examination of Cancer Cells, Tissues and Tumors Elimination

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#### **Abstract**

Particle Beam Caused Charge (IBIC) microscopy (did/done/finished) involving exceptionally tuned bacterium's of quick particles with energies in the MeV range is the amazing asset for examination of charge transporter transport properties in (component used to make electronic circuits) gadgets in light of (component used to make electronic circuits) hetero-(associating point/joining point), metal-on-(component used to make electronic circuits) and (component used to make electronic circuits)- on-cover arrangements.

## **Keywords**

Particle Therapy, Hadrontherapy, Radiotherapy, Cancer, Treatment, Cure, Tumors, Oncology

### **Editorial**

Particle Beam Caused Charge (IBIC) microscopy (did/done/finished) involving exceptionally tuned bacterium's of quick particles with energies in the MeV range is the amazing asset for examination of charge transporter transport properties in (component used to make electronic circuits) gadgets in light of (component used to make electronic circuits) hetero-(associating point/joining point), metal-on-(component used to make electronic circuits) and (component used to make electronic circuits)- on-cover arrangements. Here we present two instances of late uses of the IBIC microscopy in the field of clinical radiation physical science. The diminished rate particle bacterium's with energies in the MeV reach and sub-micrometer spot-sizes have been utilized for the (demonstrations of getting clarification on pressing issues and attempting to track down reality with regards to something) of the charge assortment (squandering very little while working or delivering something) (CCE) in delicate books/a lot of (broken into parts) radiation identifiers to quantify the (connected with space or existing in space) dissemination and uniformity and fairness of CCE in various (separating of individuals into two gatherings with altogether different sentiments) conditions. This data permits the powerful urge/formal choice about something of the charge transporter transport properties in chose foundations of a specific gadget and to place into numbers its capacity to (such that's near reality or genuine number) choose/sort out the energy kept by occasion ionizing radiation - two fundamental required things of any microdosimeter or finder of ionizing radiation [1-30].

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### References

- 1. Heidari A, Brown C. Study of Composition and Morphology of Cadmium Oxide (CdO) Nanoparticles for Eliminating Cancer Cells. J Nanomed Res. 2015; 2(5)20:2015.
- Heidari A, Brown C. Study of Surface Morphological, Phytochemical and Structural Characteristics of Rhodium (III)
  Oxide (Rh<sub>2</sub>O<sub>3</sub>) Nanoparticles. Int J Pharmacol Phytoche Ethnomed. 2015:1(1):15-19.
- 3. Heidari A. An Experimental Biospectroscopic Study on Seminal Plasma in Determination of Semen Quality for Evaluation of Male Infertility. Int J Adv Technol. 2016;7: e007.
- 4. Heidari A. Extraction and Preconcentration of N-Tolyl-Sulfonyl-Phosphoramid-Saeure-Dichlorid as an Anti-Cancer Drug from Plants: A Pharmacognosy Study. J Pharmacogn Nat Prod. 2016;2: e103.
- 5. Heidari A. A Thermodynamic Study on Hydration and Dehydration of DNA and RNA-Amphiphile Complexes. J Bioeng Biomed Sci. 2016;S:006.
- Heidari A. Computational Studies on Molecular Structures and Carbonyl and Ketene Groups' Effects of Singlet and Triplet Energies of Azidoketene O=C=CH-NNN and Isocyanatoketene O=C=CH-N=C=O. J Appl Computat Math.2016;5:e142.
- 7. Heidari A. Study of Irradiations to Enhance the Induces the Dissociation of Hydrogen Bonds between Peptide Chains and Transition from Helix Structure to Random Coil Structure Using ATR–FTIR, Raman and <sup>1</sup>HNMR Spectroscopies. J Biomol Res Ther. 2016;5:e146.
- 8. Heidari A. Future Prospects of Point Fluorescence Spectroscopy, Fluorescence Imaging and Fluorescence Endoscopy in Photodynamic Therapy (PDT) for Cancer Cells. J Bioanal Biomed. 2016;8: e135.
- 9. Heidari A. A Bio-Spectroscopic Study of DNA Density and Color Role as Determining Factor for Absorbed Irradiation in Cancer Cells. Adv Cancer Prev. 2016;1: e102.
- Heidari A Manufacturing Process of Solar Cells Using Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh<sub>2</sub>O<sub>3</sub>)
  Nanoparticles. J Biotechnol Biomater.2016;6: e125.
- 11. Heidari A. A Novel Experimental and Computational Approach to Photobiosimulation of Telomeric DNA/RNA: A Biospectroscopic and Photobiological Study. J Res Development 2016;4:144.
- 12. Heidari A. Biochemical and Pharmacodynamical Study of Microporous Molecularly Imprinted Polymer Selective for Vancomycin, Teicoplanin, Oritavancin, Telavancin and Dalbavancin Binding. Biochem Physiol. 2016;5:e146.
- Heidari A. Anti-Cancer Effect of UV Irradiation at Presence of Cadmium Oxide (CdO) Nanoparticles on DNA of Cancer Cells: A Photodynamic Therapy Study. Arch Cancer Res. 2016;4:1.
- 14. Heidari A. Biospectroscopic Study on Multi–Component Reactions (MCRs) in Two A–Type and B–Type Conformations of Nucleic Acids to Determine Ligand Binding Modes, Binding Constant and Stability of Nucleic Acids in Cadmium Oxide (CdO) Nanoparticles–Nucleic Acids Complexes as Anti–Cancer Drugs. Arch Cancer Res. 2016;4:2.
- 15. Heidari A.Simulation of Temperature Distribution of DNA/RNA of Human Cancer Cells Using Time–Dependent Bio– Heat Equation and Nd: YAG Lasers. Arch Cancer Res. 2016;4:2.
- 16. Heidari A. Quantitative Structure–Activity Relationship (QSAR)Approximation for Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh<sub>2</sub>O<sub>3</sub>) Nanoparticles as Anti-Cancer Drugs for the Catalytic Formation of Proviral DNA from Viral RNA Using Multiple Linear and Non-Linear Correlation Approach. Ann Clin Lab Res. 2016;4:1.
- 17. Heidari A. Biomedical Study of Cancer Cells DNA Therapy Using Laser Irradiations at Presence of Intelligent Nanoparticles. J Biomedical Sci. 2016;5:2.
- 18. Heidari A. Measurement the Amount of Vitamin D2 (Ergocalciferol), Vitamin D3 (Cholecalciferol) and Absorbable Calcium (Ca<sup>2+</sup>), Iron (II) (Fe<sup>2+</sup>), Magnesium (Mg<sup>2+</sup>), Phosphate (PO<sup>4-</sup>) and Zinc (Zn<sup>2+</sup>) in Apricot Using High-

- Performance Liquid Chromatography (HPLC) and Spectroscopic Techniques. J Biom Biostat. 2016;7:292.
- 19. Heidari A. Spectroscopy and Quantum Mechanics of the Helium Dimer (He<sup>2+</sup>), Neon Dimer (Ne<sup>2+</sup>), Argon Dimer (Ar<sup>2+</sup>), Krypton Dimer (Kr<sup>2+</sup>), Xenon Dimer (Xe<sup>2+</sup>), Radon Dimer(Rn<sup>2+</sup>) and Ununoctium Dimer (Uuo<sup>2+</sup>) Molecular Cations. Chem Sci J. 2016;7: e112.
- 20. Heidari A. Human Toxicity Photodynamic Therapy Studies on DNA/RNA Complexes as a Promising New Sensitizer for the Treatment of Malignant Tumors Using Bio-Spectroscopic Techniques. J Drug Metab Toxicol. 2016;7: e129.
- 21. Heidari A. Novel and Stable Modifications of Intelligent Cadmium Oxide (CdO) Nanoparticles as Anti–Cancer Drug in Formation of Nucleic Acids Complexes for Human Cancer Cells' Treatment. Biochem Pharmacol (Los Angel) 2016;5: 207.
- 22. Heidari A. A Combined Computational and QM/MM Molecular Dynamics Study on Boron Nitride Nanotubes (BNNTs), Amorphous Boron Nitride Nanotubes (a–BNNTs) and Hexagonal Boron Nitride Nanotubes (h–BNNTs) as Hydrogen Storage. Struct Chem Crystallogr Commun 2016;2.
- 23. Heidari A. Pharmaceutical and Analytical Chemistry Study of Cadmium Oxide (CdO) Nanoparticles Synthesis Methods and Properties as Anti–Cancer Drug and Its Effect on Human Cancer Cells. Pharm Anal Chem Open Access. 2016;2:113.
- 24. Heidari A. A Chemotherapeutic and Biospectroscopic Investigation of the Interaction of Double–Standard DNA/RNA-Binding Molecules with Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh<sub>2</sub>O<sub>3</sub>) Nanoparticles as Anti-Cancer Drugs for Cancer Cells' Treatment", Chemo Open Access. 2016;5: e129.
- 25. Heidari A. Pharmacokinetics and Experimental Therapeutic Study of DNA and Other Biomolecules Using Lasers: Advantages and Applications. J Pharmacokinet Exp Ther. 2016;1:e005.
- 26. Heidari A. Determination of Ratio and Stability Constant of DNA/RNA in Human Cancer Cells and Cadmium Oxide (CdO) Nanoparticles Complexes Using Analytical Electrochemical and Spectroscopic Techniques. Insights Anal Electrochem 2016;2:1.
- 27. Heidari A. Discriminate between Antibacterial and Non–Antibacterial Drugs Artificial Neutral Networks of a Multilayer Perceptron (MLP) Type Using a Set of Topological Descriptors. J Heavy Met Toxicity Dis. 2016;1: 2.
- 28. Heidari A. Combined Theoretical and Computational Study of the Belousov–Zhabotinsky Chaotic Reaction and Curtius Rearrangement for Synthesis of Mechlorethamine, Cisplatin, Streptozotocin, Cyclophosphamide, Melphalan, Busulphan and BCNU as Anti–Cancer Drugs. Insights Med Phys. 2016;1:2.
- 29. Heidari A. A Translational Biomedical Approach to Structural Arrangement of Amino Acids' Complexes: A Combined Theoretical and Computational Study. Transl Biomed. 2016;7:2.
- 30. Heidari A. Ab Initio and Density Functional Theory (DFT) Studies of Dynamic NMR Shielding Tensors and Vibrational Frequencies of DNA/RNA and Cadmium Oxide (CdO) Nanoparticles Complexes in Human Cancer Cells. J Nanomedine Biotherapeutic Discov 2016;6: e144.

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