ENHANCEMENT OF VISIBLE SYNCHROTRON ABSORPTION IN CADMIUM OXIDE (CDO) NANOPARTICLES THIN LAYER USING PLASMONIC NANOSTRUCTURES: A TWO–DIMENSIONAL (2D) SIMULATION

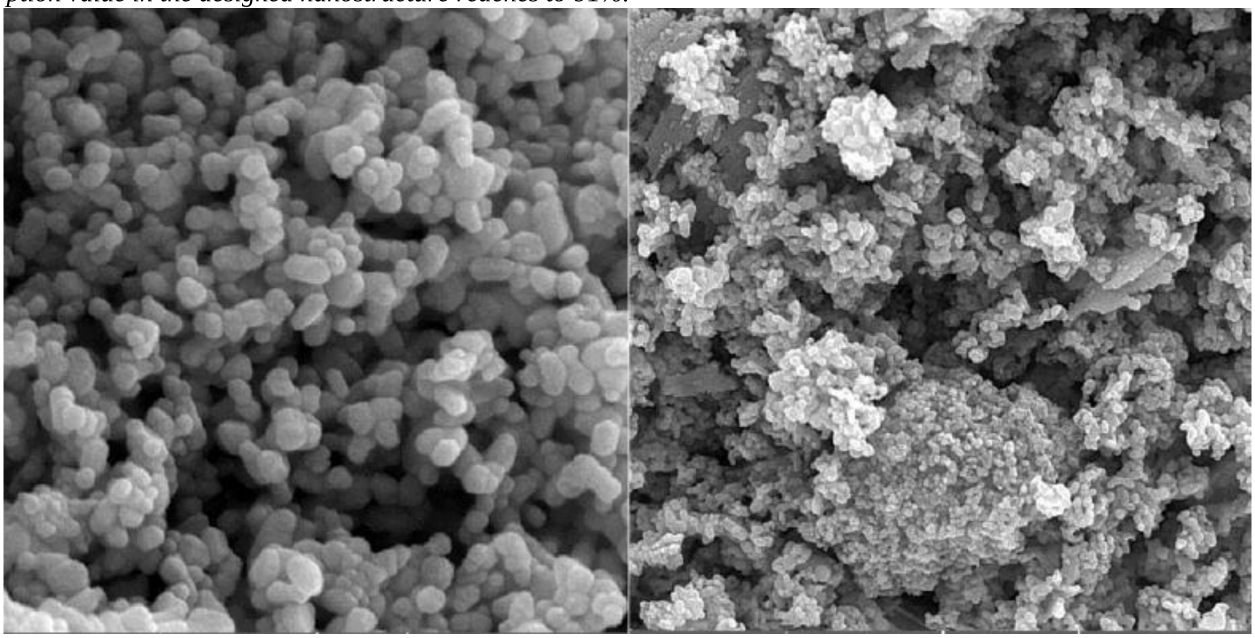
Alireza Heidari[1,2*]

[1]Faculty of Chemistry, California South University, 14731 Comet St. Irvine, CA 92604, USA

[2]American International Standards Institute, Irvine, CA 3800, USA

*Corresponding Author E–Mail Addresses: Scholar.Researcher.Scientist@gmail.com; Alireza.Heidari@calsu.us; Central@aisi-usa.org

GRAPHICAL ABSTRACT: *In the current paper, it is shown using two–dimensional simulation (2D) that visible synchrotron absorption by CdO nanoparticles thin layer enhances in an array in which a Plasmonic nanostructure thin layer is placed over CdO nanoparticles thin layer. It is observed that surface Plasmon excitation leads to increasing the electromagnetic field into the Plasmonic nanostructure and hence, absorption enhances in CdO nanoparticle's thin layer. Applying Plasmonic nanostructure considerably helps to enhance synchrotron absorption in CdO nanoparticles thin layer. Simulation by finite element method is performed in the time domain. It can be observed in the simulation that CdO nanoparticles thin layer absorption value in the designed nanostructure reaches to 91%.*



Scanning Electron Microscope (SEM) images of Cadmium Oxide (CdO) thin layer nanoparticles with 50000x zoom.

Keywords: Visible Synchrotron Absorption, Thin Layer, Cadmium Oxide (CdO) Nanoparticles, Plasmonic Nanostructures, Two–Dimensional (2D) Simulation

1. INTRODUCTION

Increasing the received electricity from solar synchrotron and reducing the cost of this process, is a goal that will be very useful and applicable in the fields of energy, technology, and weather management if it will be achieved. Photovoltaic apparatuses are able to convert solar energy to electric energy [1–44]. The performance of these apparatuses is based on semiconductor materials. Crystalline CdO nanoparticles thin layer is one of the semiconductors that are usually used in a thin layer. To have high efficiency in the thin layer, the materials of the structure must correctly select and the structure should be designed so that the maximum synchrotron absorbs inactive thin layers. In this regard, the electronic properties of the active thin layer (CdO nanoparticles thin layer) can be improved to enhance absorption by entering an array of Plasmonic nanostructure. The plasmonic nanostructure is interested in their ability in exciting Plasmons (combined vibrations of free electrons). By exciting the surface Plasmons, the field considerably enhances around the CdO nanoparticles thin layer and leads to increasing the absorption [45–72]. Absorption in CdO nanoparticles thin layer is directly related to the production of carriers in the material so that by increasing the absorption value, the quantum efficiency of electro-optical tools improves.

2. Simulation

By applying surface Plasmon excitement in an array of Plasmonic nanostructure which is placed over CdO nanoparticles thin layer through flashing a TM polarized synchrotron (electromagnetic field perpendicular to an array) on the structure, absorption coefficient increases. To select the best structure, Plasmonic nanostructure with various dimensions and materials are placed over a thin layer of CdO nanoparticles thin layer and their absorption values are compared to each other.

In order to simulate, CdO nanoparticles thin layer refraction coefficient and frequency-dependent optical constants of utilized metals are obtained from [73–110].

Simulation-based on the finite element method is performed in the time domain (FDTD). The unit cell of studied structure is surrounded by a complete analog thin layer (APML) from top and bottom and by continuous boundaries from two sides. The boundary condition of APML is provided for designing a virtual region on both sides of the main region so that all of the incident waves absorb by the boundary.

3. Definition of Structure

In designed structures, *h* is the height of Plasmonic nanostructure, *t* is the thickness of CdO nanoparticles thin layer and *P* is the period of the structure. Here, various arrays of Plasmonic nanostructures are designed from Cadmium, and the absorption curve of them are compared in terms of wavelength to find optimum structure. CdO nanoparticles thin layer thickness and period of the structure are 170 (nm) and 350 (nm), respectively, for all structures.

In structure a the height of Cadmium nanostructure over CdO nanoparticles thin layer is 125 (nm) and its period is 350 (nm) and the Cadmium thin layer that is placed bellow it is of 125 (nm) height and 175 (nm) period. The observed peak in this structure is at a wavelength of 600 (nm). In structure (b), the height of Plasmonic nanostructure over CdO nanoparticles thin layer is 125 (nm). The structure (c) is of the same dimension as structure (a). However, the top and bottom thin layers of CdO nanoparticles thin layer are displaced with each other. In structure (d), the Cadmium thin layer over CdO nanoparticles thin layer is of 125 (nm) height while the height of the Cadmium thin layer bellow the CdO nanoparticles thin layer is 100 (nm).

Regarding the distribution of the electromagnetic field at a peak wavelength of defined structures, it can be observed that the best synchrotron accumulation in CdO nanoparticles thin layer (highest absorption) is for the structure (b). The distribution of the electric field in this structure is shown in Figure (2).

Regarding the distribution of electromagnetic field shown in Figure (1), and the distribution of the electric field in Figure (2) at a wavelength of 760 (nm), an incident synchrotron is focused on the corner of the triangular array at the vicinity of CdO nanoparticles thin layer as localized Plasmon.

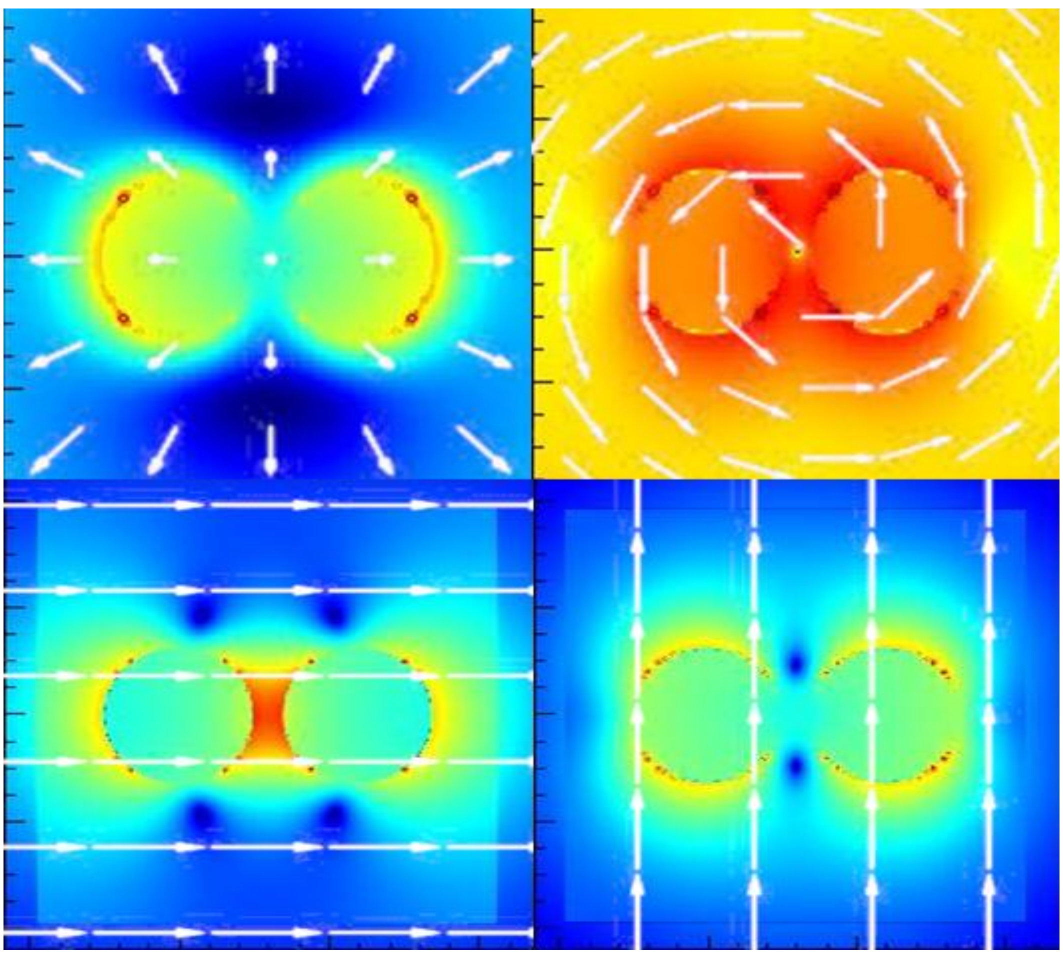


Figure (1): Comparison of absorption of designed structures and evaluation of electromagnetic field distribution at a peak wavelength of structures.

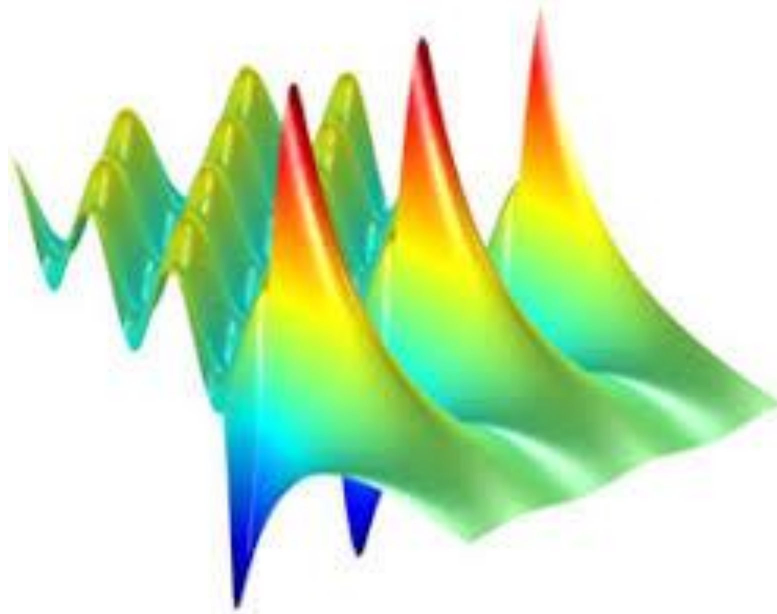


Figure (2): Distribution of electric field for structure (b) at a wavelength of 760 (nm).

The localized Plasmons are induced by the excitement of metal conduction electrons that are coupled with incident electromagnetic rays. At peak absorption wavelength of CdO nanoparticles thin layer, free electrons of metal are resonantly excited and combined at the corner of arrays [111–378]. The penetration of created Plasmons in CdO nanoparticles thin layer emerges as a guided mode in the thin layer. The resonant absorption is happened at 760 (nm) wavelength due to the creation of a static wave in the CdO nanoparticles thin layer. The Plasmonic nanostructure is changed and the absorption synchrotron value in terms of wavelength is evaluated (Figure 3).

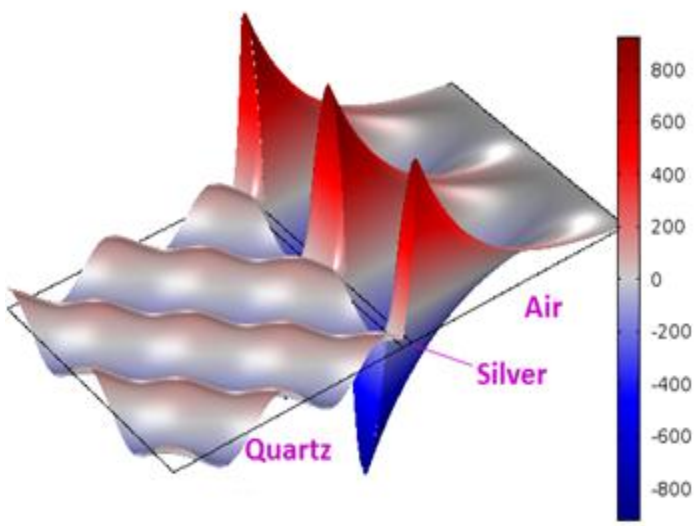


Figure (3): Comparison of absorption value of arrays with nanostructure (various metals).

These nanostructures are created from Silver, Gold, Copper, and Aluminum. As can be seen in Figure (3), the optimum absorption value is at the wavelength of about 760 (nm) which the Plasmonic thin layer made from Cadmium is of highest light absorption value in the structure.

Now, the period of the structure is increased. Figure (4) shows the variations of a period of structure (b) with Cadmium nanostructure as the optimum structure. It can be seen that by increasing the period, the peak is shifted towards red synchrotron wavelength.

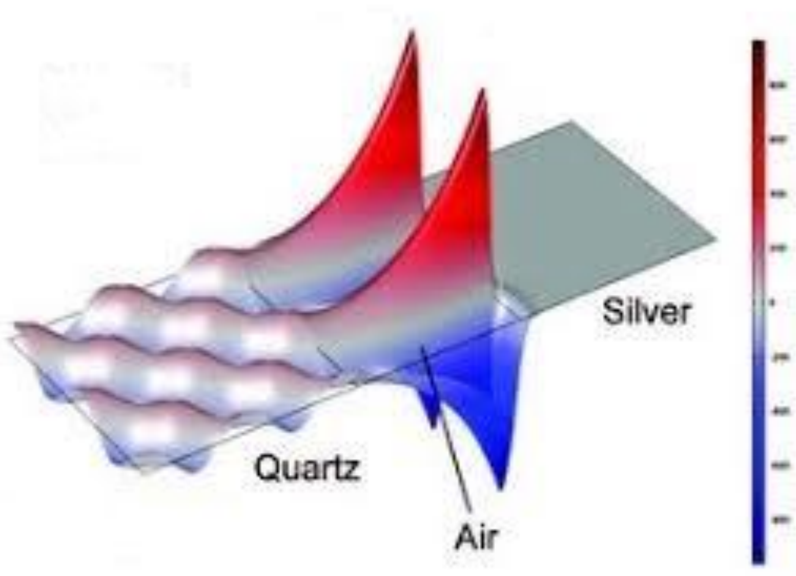


Figure (4): Plasmon graphs for structures with various periods.

The reason can be explained so that when the period is larger, a static wave in CdO nanoparticles thin layer is made at a longer wavelength. And or, it can be said that positive and negative charges at the corner of the triangular array of Plasmonic nanostructure are long distances from each other in larger periods and hence, Plasmonic resonance happens at a higher wavelength. It should be noted that the absorption value is independent of the period of the structure.

4. CONCLUSION

Trapping the synchrotron in active thin layer of the solar cell is of great importance. In the current paper, the creation of an array from Plasmonic nanostructures over CdO nanoparticles thin layer is proposed for enhancing the electromagnetic field and hence, enhancing CdO nanoparticle's thin layer absorption. Utilizing Plasmon excitement in Plasmonic nanostructures is very useful for enhancing synchrotron absorption and reducing the total volume of the structure. By designing a structure consisting of Plasmonic nanostructure with appropriate metal and dimension and hence, utilizing the effect of surface Plasmon, absorption of CdO nanoparticles thin layer considerably improves. This improvement finally leads to increasing the efficiency of the solar cell up to 91%.

REFERENCES

[1] A. Heidari, C. Brown, *"Study of Composition and Morphology of Cadmium Oxide (CdO) Nanoparticles for Eliminating Cancer Cells"*, J Nanomed Res., Volume 2, Issue 5, 20 Pages, 2015.

[2] A. Heidari, C. Brown, *"Study of Surface Morphological, Phytochemical and Structural Characteristics of Rhodium (III) Oxide (Rh_2O_3) Nanoparticles"*, International Journal of Pharmacology, Phytochemistry and Ethnomedicine, Volume 1, Issue 1, Pages 15–19, 2015.

[3] A. Heidari, *"An Experimental Biospectroscopic Study on Seminal Plasma in Determination of Semen Quality for Evaluation of Male Infertility"*, Int J Adv Technol 7: e007, 2016.

[4] A. Heidari, *"Extraction and Preconcentration of N–Tolyl–Sulfonyl–Phosphoramid–Saeure–Dichlorid as an Anti–Cancer Drug from Plants: A Pharmacognosy Study"*, J Pharmacogn Nat Prod 2: e103, 2016.

[5] A. Heidari, *"A Thermodynamic Study on Hydration and Dehydration of DNA and RNA−Amphiphile Complexes"*, J Bioeng Biomed Sci S: 006, 2016.

[6] A. Heidari, *"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 5: e142, 2016.

[7] A. Heidari, *"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 ^{1}HNMR Spectroscopies"*, J Biomol Res Ther 5: e146, 2016.

[8] A. Heidari, *"Future Prospects of Point Fluorescence Spectroscopy, Fluorescence Imaging and Fluorescence Endoscopy in Photodynamic Therapy (PDT) for Cancer Cells"*, J Bioanal Biomed 8: e135, 2016.

[9] A. Heidari, *"A Bio–Spectroscopic Study of DNA Density and Color Role as Determining Factor for Absorbed Irradiation in Cancer Cells"*, Adv Cancer Prev 1: e102, 2016.

[10] A. Heidari, *"Manufacturing Process of Solar Cells Using Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) Nanoparticles"*, J Biotechnol Biomater 6: e125, 2016.

[11] A. Heidari, *"A Novel Experimental and Computational Approach to Photobiosimulation of Telomeric DNA/RNA: A Biospectroscopic and Photobiological Study"*, J Res Development 4: 144, 2016.

[12] A. Heidari, *"Biochemical and Pharmacodynamical Study of Microporous Molecularly Imprinted Polymer*

Selective for Vancomycin, Teicoplanin, Oritavancin, Telavancin and Dalbavancin Binding", Biochem Physiol 5: e146, 2016.

[13] A. Heidari, *"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. 4: 1, 2016.

[14] A. Heidari, *"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. 4: 2, 2016.

[15] A. Heidari, *"Simulation of Temperature Distribution of DNA/RNA of Human Cancer Cells Using Time–Dependent Bio–Heat Equation and Nd: YAG Lasers"*, Arch Cancer Res. 4: 2, 2016.

[16] A. Heidari, *"Quantitative Structure–Activity Relationship (QSAR) Approximation for Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) 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. 4: 1, 2016.

[17] A. Heidari, *"Biomedical Study of Cancer Cells DNA Therapy Using Laser Irradiations at Presence of Intelligent Nanoparticles"*, J Biomedical Sci. 5: 2, 2016.

[18] A. Heidari, *"Measurement the Amount of Vitamin D2 (Ergocalciferol), Vitamin D3 (Cholecalciferol) and Absorbable Calcium (Ca^{2+}), Iron (II) (Fe^{2+}), Magnesium (Mg^{2+}), Phosphate (PO^{4-}) and Zinc (Zn^{2+}) in Apricot Using High–Performance Liquid Chromatography (HPLC) and Spectroscopic Techniques"*, J Biom Biostat 7: 292, 2016.

[19] A. Heidari, *"Spectroscopy and Quantum Mechanics of the Helium Dimer (He^{2+}), Neon Dimer (Ne^{2+}), Argon Dimer (Ar^{2+}), Krypton Dimer (Kr^{2+}), Xenon Dimer (Xe^{2+}), Radon Dimer(Rn^{2+}) and Ununoctium Dimer (Uuo^{2+}) Molecular Cations"*, Chem Sci J 7: e112, 2016.

[20] A. Heidari, *"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 7: e129, 2016.

[21] A. Heidari, *"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) 5: 207, 2016.

[22] A. Heidari, *"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 2: 1, 2016.

[23] A. Heidari, *"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 2: 113, 2016.

[24] A. Heidari, *"A Chemotherapeutic and Biospectroscopic Investigation of the Interaction of Double–Standard DNA/RNA–Binding Molecules with Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh_2O_3) Nanoparticles as Anti–Cancer Drugs for Cancer Cells' Treatment"*, Chemo Open Access 5: e129, 2016.

[25] A. Heidari, *"Pharmacokinetics and Experimental Therapeutic Study of DNA and Other Biomolecules Using Lasers: Advantages and Applications"*, J Pharmacokinet Exp Ther 1: e005, 2016.

[26] A. Heidari, *"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 2: 1, 2016.

[27] A. Heidari, *"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. 1: 2, 2016.

[28] A. Heidari, *"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. 1: 2, 2016.

[29] A. Heidari, *"A Translational Biomedical Approach to Structural Arrangement of Amino Acids' Complexes: A Combined Theoretical and Computational Study"*, Transl Biomed. 7: 2, 2016.

[30] A. Heidari, *"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 6: e144, 2016.

[31] A. Heidari, *"Molecular Dynamics and Monte–Carlo Simulations for Replacement Sugars in Insulin Resistance, Obesity, LDL Cholesterol, Triglycerides, Metabolic Syndrome, Type 2 Diabetes and Cardiovascular Disease: A Glycobiological Study"*, J Glycobiol 5: e111, 2016.

[32] A. Heidari, *"Synthesis and Study of 5–[(Phenylsulfonyl)Amino]–1,3,4–Thiadiazole–2–Sulfonamide as Potential Anti–Pertussis Drug Using Chromatography and Spectroscopy Techniques"*, Transl Med (Sunnyvale) 6: e138, 2016.

[33] A. Heidari, *"Nitrogen, Oxygen, Phosphorus and Sulphur Heterocyclic Anti–Cancer Nano Drugs Separation in the Supercritical Fluid of Ozone (O_3) Using Soave–Redlich–Kwong (SRK) and Pang–Robinson (PR) Equations"*, Electronic J Biol 12: 4, 2016.

[34] A. Heidari, *"An Analytical and Computational Infrared Spectroscopic Review of Vibrational Modes in Nucleic Acids"*, Austin J Anal Pharm Chem. 3 (1): 1058, 2016.

[35] A. Heidari, C. Brown, *"Phase, Composition and Morphology Study and Analysis of Os–Pd/HfC Nanocomposites"*, Nano Res Appl. 2: 1, 2016.

[36] A. Heidari, C. Brown, *"Vibrational Spectroscopic Study of Intensities and Shifts of Symmetric Vibration Modes of Ozone Diluted by Cumene"*, International Journal of Advanced Chemistry, 4 (1) 5–9, 2016.

[37] A. Heidari, *"Study of the Role of Anti–Cancer Molecules with Different Sizes for Decreasing Corresponding Bulk Tumor Multiple Organs or Tissues"*, Arch Can Res. 4: 2, 2016.

[38] A. Heidari, *"Genomics and Proteomics Studies of Zolpidem, Necopidem, Alpidem, Saripidem, Miroprofen, Zolimidine, Olprinone and Abafungin as Anti–Tumor, Peptide Antibiotics, Antiviral and Central Nervous System (CNS) Drugs"*, J Data Mining Genomics & Proteomics 7: e125, 2016.

[39] A. Heidari, *"Pharmacogenomics and Pharmacoproteomics Studies of Phosphodiesterase–5 (PDE5) Inhibitors and Paclitaxel Albumin–Stabilized Nanoparticles as Sandwiched Anti–Cancer Nano Drugs between Two DNA/RNA Molecules of Human Cancer Cells"*, J Pharmacogenomics Pharmacoproteomics 7: e153, 2016.

[40] A. Heidari, *"Biotranslational Medical and Biospectroscopic Studies of Cadmium Oxide (CdO) Nanoparticles–DNA/RNA Straight and Cycle Chain Complexes as Potent Anti–Viral, Anti–Tumor and Anti–Microbial Drugs: A Clinical Approach"*, Transl Biomed. 7: 2, 2016.

[41] A. Heidari, *"A Comparative Study on Simultaneous Determination and Separation of Adsorbed Cadmium Oxide (CdO) Nanoparticles on DNA/RNA of Human Cancer Cells Using Biospectroscopic Techniques and Dielectrophoresis (DEP) Method"*, Arch Can Res. 4: 2, 2016.

[42] A. Heidari, *"Cheminformatics and System Chemistry of Cisplatin, Carboplatin, Nedaplatin, Oxaliplatin, Heptaplatin and Lobaplatin as Anti–Cancer Nano Drugs: A Combined Computational and Experimental Study"*, J Inform Data Min 1: 3, 2016.

[43] A. Heidari, *"Linear and Non–Linear Quantitative Structure–Anti–Cancer–Activity Relationship (QSACAR) Study of Hydrous Ruthenium (IV) Oxide (RuO_2) Nanoparticles as Non–Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) and Anti–Cancer Nano Drugs*", J Integr Oncol 5: e110, 2016.

[44] A. Heidari, *"Synthesis, Characterization and Biospectroscopic Studies of Cadmium Oxide (CdO) Nanoparticles–Nucleic Acids Complexes Absence of Soluble Polymer as a Protective Agent Using Nucleic Acids Condensation and Solution Reduction Method"*, J Nanosci Curr Res 1: e101, 2016.

[45] A. Heidari, *"Coplanarity and Collinearity of 4'–Dinonyl–2,2'–Bithiazole in One Domain of Bleomycin and Pingyangmycin to be Responsible for Binding of Cadmium Oxide (CdO) Nanoparticles to DNA/RNA Bidentate Ligands as Anti–Tumor Nano Drug"*, Int J Drug Dev & Res 8: 007–008, 2016.

[46] A. Heidari, *"A Pharmacovigilance Study on Linear and Non–Linear Quantitative Structure (Chromatographic) Retention Relationships (QSRR) Models for the Prediction of Retention Time of Anti–Cancer Nano Drugs under Synchrotron Radiations"*, J Pharmacovigil 4: e161, 2016.

[47] A. Heidari, *"Nanotechnology in Preparation of Semipermeable Polymers"*, J Adv Chem Eng 6: 157, 2016.

[48] A. Heidari, *"A Gastrointestinal Study on Linear and Non–Linear Quantitative Structure (Chromatographic) Retention Relationships (QSRR) Models for Analysis 5–Aminosalicylates Nano Particles as Digestive System Nano Drugs under Synchrotron Radiations"*, J Gastrointest Dig Syst 6: e119, 2016.

[49] A. Heidari, *"DNA/RNA Fragmentation and Cytolysis in Human Cancer Cells Treated with Diphthamide Nano Particles Derivatives"*, Biomedical Data Mining 5: e102, 2016.

[50] A. Heidari, *"A Successful Strategy for the Prediction of Solubility in the Construction of Quantitative Structure–Activity Relationship (QSAR) and Quantitative Structure–Property Relationship (QSPR) under Synchrotron Radiations Using Genetic Function Approximation (GFA) Algorithm"*, J Mol Biol Biotechnol 1: 1, 2016.

[51] A. Heidari, *"Computational Study on Molecular Structures of C_{20}, C_{60}, C_{240}, C_{540}, C_{960}, C_{2160} and C_{3840} Fullerene Nano Molecules under Synchrotron Radiations Using Fuzzy Logic"*, J Material Sci Eng 5: 282, 2016.

[52] A. Heidari, *"Graph Theoretical Analysis of Zigzag Polyhexamethylene Biguanide, Polyhexamethylene Adipamide, Polyhexamethylene Biguanide Gauze and Polyhexamethylene Biguanide Hydrochloride (PHMB) Boron Nitride Nanotubes (BNNTs), Amorphous Boron Nitride Nanotubes (a–BNNTs) and Hexagonal Boron Nitride Nanotubes (h–BNNTs)"*, J Appl Computat Math 5: e143, 2016.

[53] A. Heidari, *"The Impact of High Resolution Imaging on Diagnosis"*, Int J Clin Med Imaging 3: 1000e101, 2016.

[54] A. Heidari, *"A Comparative Study of Conformational Behavior of Isotretinoin (13–Cis Retinoic Acid) and Tretinoin (All–Trans Retinoic Acid (ATRA)) Nano Particles as Anti–Cancer Nano Drugs under Synchrotron Radiations Using Hartree–Fock (HF) and Density Functional Theory (DFT) Methods"*, Insights in Biomed 1: 2, 2016.

[55] A. Heidari, *"Advances in Logic, Operations and Computational Mathematics"*, J Appl Computat Math 5: 5, 2016.

[56] A. Heidari, *"Mathematical Equations in Predicting Physical Behavior"*, J Appl Computat Math 5: 5, 2016.

[57] A. Heidari, *"Chemotherapy a Last Resort for Cancer Treatment"*, Chemo Open Access 5: 4, 2016.

[58] A. Heidari, *"Separation and Pre–Concentration of Metal Cations–DNA/RNA Chelates Using Molecular Beam Mass Spectrometry with Tunable Vacuum Ultraviolet (VUV) Synchrotron Radiation and Various Analytical Methods"*, Mass Spectrom Purif Tech 2: e101, 2016.

[59] A. Heidari, *"Yoctosecond Quantitative Structure–Activity Relationship (QSAR) and Quantitative Structure–Property Relationship (QSPR) under*

Synchrotron Radiations Studies for Prediction of Solubility of Anti–Cancer Nano Drugs in Aqueous Solutions Using Genetic Function Approximation (GFA) Algorithm", Insight Pharm Res. 1: 1, 2016.

[60] A. Heidari, *"Cancer Risk Prediction and Assessment in Human Cells under Synchrotron Radiations Using Quantitative Structure Activity Relationship (QSAR) and Quantitative Structure Properties Relationship (QSPR) Studies"*, Int J Clin Med Imaging 3: 516, 2016.

[61] A. Heidari, *"A Novel Approach to Biology"*, Electronic J Biol 12: 4, 2016.

[62] A. Heidari, *"Innovative Biomedical Equipment's for Diagnosis and Treatment"*, J Bioengineer & Biomedical Sci 6: 2, 2016.

[63] A. Heidari, *"Integrating Precision Cancer Medicine into Healthcare, Medicare Reimbursement Changes and the Practice of Oncology: Trends in Oncology Medicine and Practices"*, J Oncol Med & Pract 1: 2, 2016.

[64] A. Heidari, *"Promoting Convergence in Biomedical and Biomaterials Sciences and Silk Proteins for Biomedical and Biomaterials Applications: An Introduction to Materials in Medicine and Bioengineering Perspectives"*, J Bioengineer & Biomedical Sci 6: 3, 2016.

[65] A. Heidari, *"X–Ray Fluorescence and X–Ray Diffraction Analysis on Discrete Element Modeling of Nano Powder Metallurgy Processes in Optimal Container Design"*, J Powder Metall Min 6: 1, 2017.

[66] A. Heidari, *"Biomolecular Spectroscopy and Dynamics of Nano–Sized Molecules and Clusters as Cross–Linking–Induced Anti–Cancer and Immune–Oncology Nano Drugs Delivery in DNA/RNA of Human Cancer Cells' Membranes under Synchrotron Radiations: A Payload–Based Perspective"*, Arch Chem Res. 1: 2, 2017.

[67] A. Heidari, *"Deficiencies in Repair of Double–Standard DNA/RNA–Binding Molecules Identified in Many Types of Solid and Liquid Tumors Oncology in Human Body for Advancing Cancer Immunotherapy Using Computer Simulations and Data Analysis: Number of Mutations in a Synchronous Tumor Varies by Age and Type of Synchronous Cancer"*, J Appl Bioinforma Comput Biol, 6: 1, 2017.

[68] A. Heidari, *"Electronic Coupling among the Five Nanomolecules Shuts Down Quantum Tunneling in the Presence and Absence of an Applied Magnetic Field for Indication of the Dimer or other Provide Different Influences on the Magnetic Behavior of Single Molecular Magnets (SMMs) as Qubits for Quantum Computing"*, Glob J Res Rev. 4: 2, 2017.

[69] A. Heidari, *"Polymorphism in Nano–Sized Graphene Ligand–Induced Transformation of* Au_{38}*–*$xAg_x/xCu_x(SPh–tBu)_{24}$ *to* Au_{36}*–*$xAg_x/xCu_x(SPh–tBu)_{24}$ *(x = 1–12) Nanomolecules for Synthesis of* Au_{144}*–*$xAg_x/xCu_x[(SR)_{60}$*,* $(SC_4)_{60}$*,* $(SC_6)_{60}$*,* $(SC_{12})_{60}$*,* $(PET)_{60}$*,* $(p–MBA)_{60}$*,* $(F)_{60}$*,* $(Cl)_{60}$*,* $(Br)_{60}$*,* $(I)_{60}$*,* $(At)_{60}$*,* $(Uus)_{60}$ *and* $(SC_6H_{13})_{60}]$ *Nano Clusters as Anti–Cancer Nano Drugs"*, J Nanomater Mol Nanotechnol, 6: 3, 2017.

[70] A. Heidari, *"Biomedical Resource Oncology and Data Mining to Enable Resource Discovery in Medical, Medicinal, Clinical, Pharmaceutical, Chemical and Translational Research and Their Applications in Cancer Research"*, Int J Biomed Data Min 6: e103, 2017.

[71] A. Heidari, *"Study of Synthesis, Pharmacokinetics, Pharmacodynamics, Dosing, Stability, Safety and Efficacy of Olympiadane Nanomolecules as Agent for Cancer Enzymotherapy, Immunotherapy, Chemotherapy, Radiotherapy, Hormone Therapy and Targeted Therapy under Synchrotorn Radiation"*, J Dev Drugs 6: e154, 2017.

[72] A. Heidari, *"A Novel Approach to Future Horizon of Top Seven Biomedical Research Topics to Watch in 2017: Alzheimer's, Ebola, Hypersomnia, Human Immunodeficiency Virus (HIV), Tuberculosis (TB), Microbiome/Antibiotic Resistance and Endovascular Stroke"*, J Bioengineer & Biomedical Sci 7: e127, 2017.

[73] A. Heidari, *"Opinion on Computational Fluid Dynamics (CFD) Technique"*, Fluid Mech Open Acc 4: 157, 2017.

[74] A. Heidari, *"Concurrent Diagnosis of Oncology Influence Outcomes in Emergency General Surgery for Colorectal Cancer and Multiple Sclerosis (MS) Treatment Using Magnetic Resonance Imaging (MRI) and* $Au_{329}(SR)_{84}$*,* $Au_{329–x}Ag_x(SR)_{84}$*,* $Au_{144}(SR)_{60}$*,* $Au_{68}(SR)_{36}$*,* $Au_{30}(SR)_{18}$*,* $Au_{102}(SPh)_{44}$*,* $Au_{38}(SPh)_{24}$*,* $Au_{38}(SC_2H_4Ph)_{24}$*,* $Au_{21}S(SAdm)_{15}$*,* $Au_{36}(pMBA)_{24}$ *and* $Au_{25}(pMBA)_{18}$ *Nano Clusters"*, J Surgery Emerg Med 1: 21, 2017.

[75] A. Heidari, *"Developmental Cell Biology in Adult Stem Cells Death and Autophagy to Trigger a Preventive Allergic Reaction to Common Airborne Allergens under Synchrotron Radiation Using Nanotechnology for Therapeutic Goals in Particular Allergy Shots (Immunotherapy)"*, Cell Biol (Henderson, NV) 6: 1, 2017.

[76] A. Heidari, *"Changing Metal Powder Characteristics for Elimination of the Heavy Metals Toxicity and Diseases in Disruption of Extracellular Matrix (ECM) Proteins Adjustment in Cancer Metastases Induced by Osteosarcoma, Chondrosarcoma, Carcinoid, Carcinoma, Ewing's Sarcoma, Fibrosarcoma and Secondary Hematopoietic Solid or Soft Tissue Tumors"*, J Powder Metall Min 6: 170, 2017.

[77] A. Heidari, *"Nanomedicine–Based Combination Anti–Cancer Therapy between Nucleic Acids and Anti–Cancer Nano Drugs in Covalent Nano Drugs Delivery Systems for Selective Imaging and Treatment of Human Brain Tumors Using Hyaluronic Acid, Alguronic Acid and Sodium Hyaluronate as Anti–Cancer Nano Drugs and Nucleic Acids Delivery under Synchrotron Radiation"*, Am J Drug Deliv 5: 2, 2017.

[78] A. Heidari, *"Clinical Trials of Dendritic Cell Therapies for Cancer Exposing Vulnerabilities in Human Cancer Cells' Metabolism and Metabolomics: New Discoveries, Unique Features Inform New Therapeutic*

Opportunities, Biotech's Bumpy Road to the Market and Elucidating the Biochemical Programs that Support Cancer Initiation and Progression", J Biol Med Science 1: e103, 2017.

[79] A. Heidari, *"The Design Graphene–Based Nanosheets as a New Nanomaterial in Anti–Cancer Therapy and Delivery of Chemotherapeutics and Biological Nano Drugs for Liposomal Anti–Cancer Nano Drugs and Gene Delivery"*, Br Biomed Bull 5: 305, 2017.

[80] A. Haidari, "*Integrative Approach to Biological Networks for Emerging Roles of Proteomics, Genomics and Transcriptomics in the Discovery and Validation of Human Colorectal Cancer Biomarkers from DNA/RNA Sequencing Data under Synchrotron Radiation"*, Transcriptomics 5: e117, 2017.

[81] A. Heidari, *"Elimination of the Heavy Metals Toxicity and Diseases in Disruption of Extracellular Matrix (ECM) Proteins and Cell Adhesion Intelligent Nanomolecules Adjustment in Cancer Metastases Using Metalloenzymes and under Synchrotron Radiation"*, Lett Health Biol Sci 2 (2): 1–4, 2017.

[82] A. Heidari, *"Treatment of Breast Cancer Brain Metastases through a Targeted Nanomolecule Drug Delivery System Based on Dopamine Functionalized Multi–Wall Carbon Nanotubes (MWCNTs) Coated with Nano Graphene Oxide (GO) and Protonated Polyaniline (PANI) in Situ During the Polymerization of Aniline Autogenic Nanoparticles for the Delivery of Anti–Cancer Nano Drugs under Synchrotron Radiation"*, Br J Res, 4 (3): 16, 2017.

[83] A. Heidari, *"Sedative, Analgesic and Ultrasound–Mediated Gastrointestinal Nano Drugs Delivery for Gastrointestinal Endoscopic Procedure, Nano Drug–Induced Gastrointestinal Disorders and Nano Drug Treatment of Gastric Acidity"*, Res Rep Gastroenterol, 1: 1, 2017.

[84] A. Heidari, *"Synthesis, Pharmacokinetics, Pharmacodynamics, Dosing, Stability, Safety and Efficacy of Orphan Nano Drugs to Treat High Cholesterol and Related Conditions and to Prevent Cardiovascular Disease under Synchrotron Radiation"*, J Pharm Sci Emerg Drugs 5: 1, 2017.

[85] A. Heidari, *"Non–Linear Compact Proton Synchrotrons to Improve Human Cancer Cells and Tissues Treatments and Diagnostics through Particle Therapy Accelerators with Monochromatic Microbeams"*, J Cell Biol Mol Sci 2 (1): 1–5, 2017.

[86] A. Heidari, *"Design of Targeted Metal Chelation Therapeutics Nanocapsules as Colloidal Carriers and Blood–Brain Barrier (BBB) Translocation to Targeted Deliver Anti–Cancer Nano Drugs into the Human Brain to Treat Alzheimer's Disease under Synchrotron Radiation"*, J Nanotechnol Material Sci 4 (2): 1–5, 2017.

[87] R. Gobato, A. Heidari, *"Calculations Using Quantum Chemistry for Inorganic Molecule Simulation* $BeLi_2SeSi$*"*, Science Journal of Analytical Chemistry, Vol. 5, No. 6, Pages 76–85, 2017.

[88] A. Heidari, *"Different High–Resolution Simulations of Medical, Medicinal, Clinical, Pharmaceutical and Therapeutics Oncology of Human Lung Cancer Translational Anti–Cancer Nano Drugs Delivery Treatment Process under Synchrotron and X–Ray Radiations"*, J Med Oncol. Vol. 1 No. 1: 1, 2017.

[89] A. Heidari, *"A Modern Ethnomedicinal Technique for Transformation, Prevention and Treatment of Human Malignant Gliomas Tumors into Human Benign Gliomas Tumors under Synchrotron Radiation"*, Am J Ethnomed, Vol. 4 No. 1: 10, 2017.

[90] A. Heidari, *"Active Targeted Nanoparticles for Anti–Cancer Nano Drugs Delivery across the Blood–Brain Barrier for Human Brain Cancer Treatment, Multiple Sclerosis (MS) and Alzheimer's Diseases Using Chemical Modifications of Anti–Cancer Nano Drugs or Drug–Nanoparticles through Zika Virus (ZIKV) Nanocarriers under Synchrotron Radiation"*, J Med Chem Toxicol, 2 (3): 1–5, 2017.

[91] A. Heidari, *"Investigation of Medical, Medicinal, Clinical and Pharmaceutical Applications of Estradiol, Mestranol (Norlutin), Norethindrone (NET), Norethisterone Acetate (NETA), Norethisterone Enanthate (NETE) and Testosterone Nanoparticles as Biological Imaging, Cell Labeling, Anti–Microbial Agents and Anti–Cancer Nano Drugs in Nanomedicines Based Drug Delivery Systems for Anti–Cancer Targeting and Treatment"*, Parana Journal of Science and Education (PJSE)–v.3, n.4, (10–19) October 12, 2017.

[92] A. Heidari, *"A Comparative Computational and Experimental Study on Different Vibrational Biospectroscopy Methods, Techniques and Applications for Human Cancer Cells in Tumor Tissues Simulation, Modeling, Research, Diagnosis and Treatment"*, Open J Anal Bioanal Chem 1 (1): 014–020, 2017.

[93] A. Heidari, *"Combination of DNA/RNA Ligands and Linear/Non–Linear Visible–Synchrotron Radiation–Driven N–Doped Ordered Mesoporous Cadmium Oxide (CdO) Nanoparticles Photocatalysts Channels Resulted in an Interesting Synergistic Effect Enhancing Catalytic Anti–Cancer Activity"*, Enz Eng 6: 1, 2017.

[94] A. Heidari, *"Modern Approaches in Designing Ferritin, Ferritin Light Chain, Transferrin, Beta–2 Transferrin and Bacterioferritin–Based Anti–Cancer Nano Drugs Encapsulating Nanosphere as DNA–Binding Proteins from Starved Cells (DPS)"*, Mod Appro Drug Des. 1 (1). MADD.000504. 2017.

[95] A. Heidari, *"Potency of Human Interferon β–1a and Human Interferon β–1b in Enzymotherapy, Immunotherapy, Chemotherapy, Radiotherapy, Hormone Therapy and Targeted Therapy of Encephalomyelitis Disseminate/Multiple Sclerosis (MS) and Hepatitis A, B, C, D, E, F and G Virus Enter and Targets Liver Cells"*, J Proteomics Enzymol 6: 1, 2017.

[96] A. Heidari, *"Transport Therapeutic Active Targeting of Human Brain Tumors Enable Anti–Cancer Nanodrugs Delivery across the Blood–Brain Barrier (BBB) to Treat Brain Diseases Using Nanoparticles and Nanocarriers under Synchrotron Radiation"*, J Pharm Pharmaceutics 4 (2): 1–5, 2017.

[97] A. Heidari, C. Brown, *"Combinatorial Therapeutic Approaches to DNA/RNA and Benzylpenicillin (Penicillin G), Fluoxetine Hydrochloride (Prozac and Sarafem), Propofol (Diprivan), Acetylsalicylic Acid (ASA) (Aspirin), Naproxen Sodium (Aleve and Naprosyn) and Dextromethamphetamine Nanocapsules with Surface Conjugated DNA/RNA to Targeted Nano Drugs for Enhanced Anti–Cancer Efficacy and Targeted Cancer Therapy Using Nano Drugs Delivery Systems"*, Ann Adv Chem. 1 (2): 061–069, 2017.

[98] A. Heidari, *"High–Resolution Simulations of Human Brain Cancer Translational Nano Drugs Delivery Treatment Process under Synchrotron Radiation"*, J Transl Res. 1 (1): 1–3, 2017.

[99] A. Heidari, *"Investigation of Anti–Cancer Nano Drugs' Effects' Trend on Human Pancreas Cancer Cells and Tissues Prevention, Diagnosis and Treatment Process under Synchrotron and X–Ray Radiations with the Passage of Time Using Mathematica"*, Current Trends Anal Bioanal Chem, 1 (1): 36–41, 2017.

[100] A. Heidari, *"Pros and Cons Controversy on Molecular Imaging and Dynamics of Double–Standard DNA/RNA of Human Preserving Stem Cells–Binding Nano Molecules with Androgens/Anabolic Steroids (AAS) or Testosterone Derivatives through Tracking of Helium–4 Nucleus (Alpha Particle) Using Synchrotron Radiation"*, Arch Biotechnol Biomed. 1 (1): 067–0100, 2017.

[101] A. Heidari, *"Visualizing Metabolic Changes in Probing Human Cancer Cells and Tissues Metabolism Using Vivo ^{1}H or Proton NMR, ^{13}C NMR, ^{15}N NMR and ^{31}P NMR Spectroscopy and Self–Organizing Maps under Synchrotron Radiation"*, SOJ Mater Sci Eng 5 (2): 1–6, 2017.

[102] A. Heidari, *"Cavity Ring–Down Spectroscopy (CRDS), Circular Dichroism Spectroscopy, Cold Vapour Atomic Fluorescence Spectroscopy and Correlation Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Enliven: Challenges Cancer Detect Ther 4 (2): e001, 2017.

[103] A. Heidari, *"Laser Spectroscopy, Laser–Induced Breakdown Spectroscopy and Laser–Induced Plasma Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Int J Hepatol Gastroenterol, 3 (4): 079–084, 2017.

[104] A. Heidari, *"Time–Resolved Spectroscopy and Time–Stretch Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Enliven: Pharmacovigilance and Drug Safety 4 (2): e001, 2017.

[105] A. Heidari, *"Overview of the Role of Vitamins in Reducing Negative Effect of Decapeptyl (Triptorelin Acetate or Pamoate Salts) on Prostate Cancer Cells and Tissues in Prostate Cancer Treatment Process through Transformation of Malignant Prostate Tumors into Benign Prostate Tumors under Synchrotron Radiation"*, Open J Anal Bioanal Chem 1 (1): 021–026, 2017.

[106] A. Heidari, *"Electron Phenomenological Spectroscopy, Electron Paramagnetic Resonance (EPR) Spectroscopy and Electron Spin Resonance (ESR) Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Austin J Anal Pharm Chem. 4 (3): 1091, 2017.

[107] A. Heidari, *"Therapeutic Nanomedicine Different High–Resolution Experimental Images and Computational Simulations for Human Brain Cancer Cells and Tissues Using Nanocarriers Deliver DNA/RNA to Brain Tumors under Synchrotron Radiation with the Passage of Time Using Mathematica and MATLAB"*, Madridge J Nano Tech. Sci. 2 (2): 77–83, 2017.

[108] A. Heidari, *"A Consensus and Prospective Study on Restoring Cadmium Oxide (CdO) Nanoparticles Sensitivity in Recurrent Ovarian Cancer by Extending the Cadmium Oxide (CdO) Nanoparticles–Free Interval Using Synchrotron Radiation Therapy as Antibody–Drug Conjugate for the Treatment of Limited–Stage Small Cell Diverse Epithelial Cancers"*, Cancer Clin Res Rep, 1: 2, e001, 2017.

[109] A. Heidari, *"A Novel and Modern Experimental Imaging and Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under White Synchrotron Radiation"*, Cancer Sci Res Open Access 4 (2): 1–8, 2017.

[110] A. Heidari, *"Different High–Resolution Simulations of Medical, Medicinal, Clinical, Pharmaceutical and Therapeutics Oncology of Human Breast Cancer Translational Nano Drugs Delivery Treatment Process under Synchrotron and X–Ray Radiations"*, J Oral Cancer Res 1 (1): 12–17, 2017.

[111] A. Heidari, *"Vibrational Decihertz (dHz), Centihertz (cHz), Millihertz (mHz), Microhertz (μHz), Nanohertz (nHz), Picohertz (pHz), Femtohertz (fHz), Attohertz (aHz), Zeptohertz (zHz) and Yoctohertz (yHz) Imaging and Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, International Journal of Biomedicine, 7 (4), 335–340, 2017.

[112] A. Heidari, *"Force Spectroscopy and Fluorescence Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, EC Cancer, 2 (5), 239–246, 2017.

[113] A. Heidari, *"Photoacoustic Spectroscopy, Photoemission Spectroscopy and Photothermal Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, BAOJ Cancer Res Ther, 3: 3, 045–052, 2017.

[114] A. Heidari, *"J–Spectroscopy, Exchange Spectroscopy (EXSY), Nuclear Overhauser Effect Spectroscopy (NOESY) and Total Correlation Spectroscopy (TOCSY) Comparative Study on Malignant and Benign Human*

Cancer Cells and Tissues under Synchrotron Radiation", EMS Eng Sci J, 1 (2): 006–013, 2017.

[115] A. Heidari, *"Neutron Spin Echo Spectroscopy and Spin Noise Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Int J Biopharm Sci, 1: 103–107, 2017.

[116] A. Heidari, *"Vibrational Decahertz (daHz), Hectohertz (hHz), Kilohertz (kHz), Megahertz (MHz), Gigahertz (GHz), Terahertz (THz), Petahertz (PHz), Exahertz (EHz), Zettahertz (ZHz) and Yottahertz (YHz) Imaging and Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Madridge J Anal Sci Instrum, 2 (1): 41–46, 2017.

[117] A. Heidari, *"Two–Dimensional Infrared Correlation Spectroscopy, Linear Two–Dimensional Infrared Spectroscopy and Non–Linear Two–Dimensional Infrared Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, J Mater Sci Nanotechnol 6 (1): 101, 2018.

[118] A. Heidari, *"Fourier Transform Infrared (FTIR) Spectroscopy, Near–Infrared Spectroscopy (NIRS) and Mid–Infrared Spectroscopy (MIRS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Int J Nanotechnol Nanomed, Volume 3, Issue 1, Pages 1–6, 2018.

[119] A. Heidari, *"Infrared Photo Dissociation Spectroscopy and Infrared Correlation Table Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Austin Pharmacol Pharm, 3 (1): 1011, 2018.

[120] A. Heidari, *"Novel and Transcendental Prevention, Diagnosis and Treatment Strategies for Investigation of Interaction among Human Blood Cancer Cells, Tissues, Tumors and Metastases with Synchrotron Radiation under Anti–Cancer Nano Drugs Delivery Efficacy Using MATLAB Modeling and Simulation"*, Madridge J Nov Drug Res, 1 (1): 18–24, 2017.

[121] A. Heidari, *"Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Open Access J Trans Med Res, 2 (1): 00026–00032, 2018.

[122] M. R. R. Gobato, R. Gobato, A. Heidari, *"Planting of Jaboticaba Trees for Landscape Repair of Degraded Area"*, Landscape Architecture and Regional Planning, Vol. 3, No. 1, 2018, Pages 1–9, 2018.

[123] A. Heidari, *"Fluorescence Spectroscopy, Phosphorescence Spectroscopy and Luminescence Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, SM J Clin. Med. Imaging, 4 (1): 1018, 2018.

[124] A. Heidari, *"Nuclear Inelastic Scattering Spectroscopy (NISS) and Nuclear Inelastic Absorption Spectroscopy (NIAS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Int J Pharm Sci, 2 (1): 1–14, 2018.

[125] A. Heidari, *"X–Ray Diffraction (XRD), Powder X–Ray Diffraction (PXRD) and Energy–Dispersive X–Ray Diffraction (EDXRD) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, J Oncol Res; 2 (1): 1–14, 2018.

[126] A. Heidari, *"Correlation Two–Dimensional Nuclear Magnetic Resonance (NMR) (2D–NMR) (COSY) Imaging and Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, EMS Can Sci, 1–1–001, 2018.

[127] A. Heidari, *"Thermal Spectroscopy, Photothermal Spectroscopy, Thermal Microspectroscopy, Photothermal Microspectroscopy, Thermal Macrospectroscopy and Photothermal Macrospectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, SM J Biometrics Biostat, 3 (1): 1024, 2018.

[128] A. Heidari, *"A Modern and Comprehensive Experimental Biospectroscopic Comparative Study on Human Common Cancers' Cells, Tissues and Tumors before and after Synchrotron Radiation Therapy"*, Open Acc J Oncol Med. 1 (1), 2018.

[129] A. Heidari, *"Heteronuclear Correlation Experiments such as Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC), Heteronuclear Multiple–Quantum Correlation Spectroscopy (HMQC) and Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Endocrinology and Thyroid Cancer Cells and Tissues under Synchrotron Radiation"*, J Endocrinol Thyroid Res, 3 (1): 555603, 2018.

[130] A. Heidari, *"Nuclear Resonance Vibrational Spectroscopy (NRVS), Nuclear Inelastic Scattering Spectroscopy (NISS), Nuclear Inelastic Absorption Spectroscopy (NIAS) and Nuclear Resonant Inelastic X–Ray Scattering Spectroscopy (NRIXSS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Int J Bioorg Chem Mol Biol. 6 (1e): 1–5, 2018.

[131] A. Heidari, *"A Novel and Modern Experimental Approach to Vibrational Circular Dichroism Spectroscopy and Video Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under White and Monochromatic Synchrotron Radiation"*, Glob J Endocrinol Metab. 1 (3). GJEM. 000514–000519, 2018.

[132] A. Heidari, *"Pros and Cons Controversy on Heteronuclear Correlation Experiments such as Heteronuclear Single–Quantum Correlation*

Spectroscopy (HSQC), Heteronuclear Multiple–Quantum Correlation Spectroscopy (HMQC) and Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation", EMS Pharma J. 1 (1): 002–008, 2018.

[133] A. Heidari, *"A Modern Comparative and Comprehensive Experimental Biospectroscopic Study on Different Types of Infrared Spectroscopy of Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, J Analyt Molecul Tech. 3 (1): 8, 2018.

[134] A. Heidari, *"Investigation of Cancer Types Using Synchrotron Technology for Proton Beam Therapy: An Experimental Biospectroscopic Comparative Study"*, European Modern Studies Journal, Vol. 2, No. 1, 13–29, 2018.

[135] A. Heidari, *"Saturated Spectroscopy and Unsaturated Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Imaging J Clin Medical Sci. 5 (1): 001–007, 2018.

[136] A. Heidari, *"Small–Angle Neutron Scattering (SANS) and Wide–Angle X–Ray Diffraction (WAXD) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Int J Bioorg Chem Mol Biol. 6 (2e): 1–6, 2018.

[137] A. Heidari, *"Investigation of Bladder Cancer, Breast Cancer, Colorectal Cancer, Endometrial Cancer, Kidney Cancer, Leukemia, Liver, Lung Cancer, Melanoma, Non–Hodgkin Lymphoma, Pancreatic Cancer, Prostate Cancer, Thyroid Cancer and Non–Melanoma Skin Cancer Using Synchrotron Technology for Proton Beam Therapy: An Experimental Biospectroscopic Comparative Study"*, Ther Res Skin Dis 1 (1), 2018.

[138] A. Heidari, *"Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR) Spectroscopy, Micro–Attenuated Total Reflectance Fourier Transform Infrared (Micro–ATR–FTIR) Spectroscopy and Macro–Attenuated Total Reflectance Fourier Transform Infrared (Macro–ATR–FTIR) Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, International Journal of Chemistry Papers, 2 (1): 1–12, 2018.

[139] A. Heidari, *"Mössbauer Spectroscopy, Mössbauer Emission Spectroscopy and ^{57}Fe Mössbauer Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Acta Scientific Cancer Biology 2.3: 17–20, 2018.

[140] A. Heidari, *"Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Organic & Medicinal Chem IJ. 6 (1): 555676, 2018.

[141] A. Heidari, *"Correlation Spectroscopy, Exclusive Correlation Spectroscopy and Total Correlation Spectroscopy Comparative Study on Malignant and Benign Human AIDS–Related Cancers Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Int J Bioanal Biomed. 2 (1): 001–007, 2018.

[142] A. Heidari, *"Biomedical Instrumentation and Applications of Biospectroscopic Methods and Techniques in Malignant and Benign Human Cancer Cells and Tissues Studies under Synchrotron Radiation and Anti–Cancer Nano Drugs Delivery"*, Am J Nanotechnol Nanomed. 1 (1): 001–009, 2018.

[143] A. Heidari, *"Vivo ^{1}H or Proton NMR, ^{13}C NMR, ^{15}N NMR and ^{31}P NMR Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Ann Biomet Biostat. 1 (1): 1001, 2018.

[144] A. Heidari, *"Grazing–Incidence Small–Angle Neutron Scattering (GISANS) and Grazing–Incidence X–Ray Diffraction (GIXD) Comparative Study on Malignant and Benign Human Cancer Cells, Tissues and Tumors under Synchrotron Radiation"*, Ann Cardiovasc Surg. 1 (2): 1006, 2018.

[145] A. Heidari, *"Adsorption Isotherms and Kinetics of Multi–Walled Carbon Nanotubes (MWCNTs), Boron Nitride Nanotubes (BNNTs), Amorphous Boron Nitride Nanotubes (a–BNNTs) and Hexagonal Boron Nitride Nanotubes (h–BNNTs) for Eliminating Carcinoma, Sarcoma, Lymphoma, Leukemia, Germ Cell Tumor and Blastoma Cancer Cells and Tissues"*, Clin Med Rev Case Rep 5: 201, 2018.

[146] A. Heidari, *"Correlation Spectroscopy (COSY), Exclusive Correlation Spectroscopy (ECOSY), Total Correlation Spectroscopy (TOCSY), Incredible Natural–Abundance Double–Quantum Transfer Experiment (INADEQUATE), Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC), Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC), Nuclear Overhauser Effect Spectroscopy (NOESY) and Rotating Frame Nuclear Overhauser Effect Spectroscopy (ROESY) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Acta Scientific Pharmaceutical Sciences 2.5: 30–35, 2018.

[147] A. Heidari, *"Small–Angle X–Ray Scattering (SAXS), Ultra–Small Angle X–Ray Scattering (USAXS), Fluctuation X–Ray Scattering (FXS), Wide–Angle X–Ray Scattering (WAXS), Grazing–Incidence Small–Angle X–Ray Scattering (GISAXS), Grazing–Incidence Wide–Angle X–Ray Scattering (GIWAXS), Small–Angle Neutron Scattering (SANS), Grazing–Incidence Small–Angle Neutron Scattering (GISANS), X–Ray Diffraction (XRD), Powder X–Ray Diffraction (PXRD), Wide–Angle X–Ray Diffraction (WAXD), Grazing–Incidence X–Ray Diffraction (GIXD) and Energy–Dispersive X–Ray Diffraction (EDXRD) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Oncol Res Rev, Volume 1 (1): 1–10, 2018.

[148] A. Heidari, *"Pump–Probe Spectroscopy and Transient Grating Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Adv Material Sci Engg, Volume 2, Issue 1, Pages 1–7, 2018.

[149] A. Heidari, *"Grazing–Incidence Small–Angle X–Ray Scattering (GISAXS) and Grazing–Incidence Wide–Angle X–Ray Scattering (GIWAXS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Insights Pharmacol Pharm Sci 1 (1): 1–8, 2018.

[150] A. Heidari, *"Acoustic Spectroscopy, Acoustic Resonance Spectroscopy and Auger Spectroscopy Comparative Study on Anti–Cancer Nano Drugs Delivery in Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Nanosci Technol 5 (1): 1–9, 2018.

[151] A. Heidari, *"Niobium, Technetium, Ruthenium, Rhodium, Hafnium, Rhenium, Osmium and Iridium Ions Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Nanomed Nanotechnol, 3 (2): 000138, 2018.

[152] A. Heidari, *"Homonuclear Correlation Experiments such as Homonuclear Single–Quantum Correlation Spectroscopy (HSQC), Homonuclear Multiple–Quantum Correlation Spectroscopy (HMQC) and Homonuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Austin J Proteomics Bioinform & Genomics. 5 (1): 1024, 2018.

[153] A. Heidari, *"Atomic Force Microscopy Based Infrared (AFM–IR) Spectroscopy and Nuclear Resonance Vibrational Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, J Appl Biotechnol Bioeng. 5 (3): 142–148, 2018.

[154] A. Heidari, *"Time–Dependent Vibrational Spectral Analysis of Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, J Cancer Oncol, 2 (2): 000124, 2018.

[155] A. Heidari, *"Palauamine and Olympiadane Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Arc Org Inorg Chem Sci 3 (1), 2018.

[156] R. Gobato, A. Heidari, *"Infrared Spectrum and Sites of Action of Sanguinarine by Molecular Mechanics and ab initio Methods"*, International Journal of Atmospheric and Oceanic Sciences. Vol. 2, No. 1, pp. 1–9, 2018.

[157] A. Heidari, *"Angelic Acid, Diabolic Acids, Draculin and Miraculin Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment Under Synchrotron and Synchrocyclotron Radiations"*, Med & Analy Chem Int J, 2 (1): 000111, 2018.

[158] A. Heidari, *"Gamma Linolenic Methyl Ester, 5–Heptadeca–5,8,11–Trienyl 1,3,4–Oxadiazole–2–Thiol, Sulphoquinovosyl Diacyl Glycerol, Ruscogenin, Nocturnoside B, Protodioscine B, Parquisoside–B, Leiocarposide, Narangenin, 7–Methoxy Hespertin, Lupeol, Rosemariquinone, Rosmanol and Rosemadiol Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Int J Pharma Anal Acta, 2 (1): 007–014, 2018.

[159] A. Heidari, *"Fourier Transform Infrared (FTIR) Spectroscopy, Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR) Spectroscopy, Micro–Attenuated Total Reflectance Fourier Transform Infrared (Micro–ATR–FTIR) Spectroscopy, Macro–Attenuated Total Reflectance Fourier Transform Infrared (Macro–ATR–FTIR) Spectroscopy, Two–Dimensional Infrared Correlation Spectroscopy, Linear Two–Dimensional Infrared Spectroscopy, Non–Linear Two–Dimensional Infrared Spectroscopy, Atomic Force Microscopy Based Infrared (AFM–IR) Spectroscopy, Infrared Photodissociation Spectroscopy, Infrared Correlation Table Spectroscopy, Near–Infrared Spectroscopy (NIRS), Mid–Infrared Spectroscopy (MIRS), Nuclear Resonance Vibrational Spectroscopy, Thermal Infrared Spectroscopy and Photothermal Infrared Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Glob Imaging Insights, Volume 3 (2): 1–14, 2018.

[160] A. Heidari, *"Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC) and Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Cancer Cells, Tissues and Tumors under Synchrotron and Synchrocyclotron Radiations"*, Chronicle of Medicine and Surgery 2.3: 144–156, 2018.

[161] A. Heidari, *"Tetrakis [3, 5–bis (Trifluoromethyl) Phenyl] Borate (BARF)–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Medical Research and Clinical Case Reports 2.1: 113–126, 2018.

[162] A. Heidari, *"Sydnone, Münchnone, Montréalone, Mogone, Montelukast, Quebecol and Palau'amine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Sur Cas Stud Op Acc J. 1 (3), 2018.

[163] A. Heidari, *"Fornacite, Orotic Acid, Rhamnetin, Sodium Ethyl Xanthate (SEX) and Spermine (Spermidine or Polyamine) Nanomolecules Incorporation into the Nanopolymeric Matrix (NPM)"*,

International Journal of Biochemistry and Biomolecules, Vol. 4: Issue 1, Pages 1–19, 2018.

[164] A. Heidari, R. Gobato, *"Putrescine, Cadaverine, Spermine and Spermidine–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Parana Journal of Science and Education (PJSE)–v.4, n.5, (1–14) July 1, 2018.

[165] A. Heidari, *"Cadaverine (1,5–Pentanediamine or Pentamethylenediamine), Diethyl Azodicarboxylate (DEAD or DEADCAT) and Putrescine (Tetramethylenediamine) Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Hiv and Sexual Health Open Access Open Journal. 1 (1): 4–11, 2018.

[166] A. Heidari, *"Improving the Performance of Nano–Endofullerenes in Polyaniline Nanostructure–Based Biosensors by Covering Californium Colloidal Nanoparticles with Multi–Walled Carbon Nanotubes"*, Journal of Advances in Nanomaterials, Vol. 3, No. 1, Pages 1–28, 2018.

[167] R. Gobato, A. Heidari, *"Molecular Mechanics and Quantum Chemical Study on Sites of Action of Sanguinarine Using Vibrational Spectroscopy Based on Molecular Mechanics and Quantum Chemical Calculations"*, Malaysian Journal of Chemistry, Vol. 20 (1), 1–23, 2018.

[168] A. Heidari, *"Vibrational Biospectroscopic Studies on Anti–cancer Nanopharmaceuticals (Part I)"*, Malaysian Journal of Chemistry, Vol. 20 (1), 33–73, 2018.

[169] A. Heidari, *"Vibrational Biospectroscopic Studies on Anti–cancer Nanopharmaceuticals (Part II)"*, Malaysian Journal of Chemistry, Vol. 20 (1), 74–117, 2018.

[170] A. Heidari, "*Uranocene ($U(C_8H_8)_2$) and Bis(Cyclooctatetraene)Iron ($Fe(C_8H_8)_2$ or $Fe(COT)_2$)–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Chemistry Reports, Vol. 1, Iss. 2, Pages 1–16, 2018.

[171] A. Heidari, *"Biomedical Systematic and Emerging Technological Study on Human Malignant and Benign Cancer Cells and Tissues Biospectroscopic Analysis under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (3): 1–7, 2018.

[172] A. Heidari, *"Deep–Level Transient Spectroscopy and X–Ray Photoelectron Spectroscopy (XPS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Res Dev Material Sci. 7(2). RDMS.000659, 2018.

[173] A. Heidari, *"C70–Carboxyfullerenes Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Glob Imaging Insights, Volume 3 (3): 1–7, 2018.

[174] A. Heidari, *"The Effect of Temperature on Cadmium Oxide (CdO) Nanoparticles Produced by Synchrotron Radiation in the Human Cancer Cells, Tissues and Tumors"*, International Journal of Advanced Chemistry, 6 (2) 140–156, 2018.

[175] A. Heidari, *"A Clinical and Molecular Pathology Investigation of Correlation Spectroscopy (COSY), Exclusive Correlation Spectroscopy (ECOSY), Total Correlation Spectroscopy (TOCSY), Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC) and Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Cancer Cells, Tissues and Tumors under Synchrotron and Synchrocyclotron Radiations Using Cyclotron versus Synchrotron, Synchrocyclotron and the Large Hadron Collider (LHC) for Delivery of Proton and Helium Ion (Charged Particle) Beams for Oncology Radiotherapy"*, European Journal of Advances in Engineering and Technology, 5 (7): 414–426, 2018.

[176] A. Heidari, *"Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, J Oncol Res; 1 (1): 1–20, 2018.

[177] A. Heidari, *"Use of Molecular Enzymes in the Treatment of Chronic Disorders"*, Canc Oncol Open Access J. 1 (1): 12–15, 2018.

[178] A. Heidari, *"Vibrational Biospectroscopic Study and Chemical Structure Analysis of Unsaturated Polyamides Nanoparticles as Anti–Cancer Polymeric Nanomedicines Using Synchrotron Radiation"*, International Journal of Advanced Chemistry, 6 (2) 167–189, 2018.

[179] A. Heidari, *"Adamantane, Irene, Naftazone and Pyridine–Enhanced Precatalyst Preparation Stabilization and Initiation (PEPPSI) Nano Molecules"*, Madridge J Nov Drug Res. 2 (1): 61–67, 2018.

[180] A. Heidari, *"Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC) and Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Madridge J Nov Drug Res, 2 (1): 68–74, 2018.

[181] A. Heidari, R. Gobato, *"A Novel Approach to Reduce Toxicities and to Improve Bioavailabilities of DNA/RNA of Human Cancer Cells–Containing Cocaine (Coke), Lysergide (Lysergic Acid Diethyl Amide or LSD), Δ^9–Tetrahydrocannabinol (THC) [(–)–trans–Δ^9–Tetrahydrocannabinol], Theobromine (Xantheose), Caffeine, Aspartame (APM) (NutraSweet) and Zidovudine (ZDV) [Azidothymidine (AZT)] as Anti–Cancer Nano Drugs by Coassembly of Dual Anti–Cancer Nano Drugs to Inhibit DNA/RNA of Human*

Cancer Cells Drug Resistance", Parana Journal of Science and Education, v. 4, n. 6, pp. 1–17, 2018.

[182] A. Heidari, R. Gobato, *"Ultraviolet Photoelectron Spectroscopy (UPS) and Ultraviolet–Visible (UV–Vis) Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Parana Journal of Science and Education, v. 4, n. 6, pp. 18–33, 2018.

[183] R. Gobato, A. Heidari, A. Mitra, *"The Creation of $C_{13}H_{20}BeLi_2SeSi$. The Proposal of a Bio–Inorganic Molecule, Using Ab Initio Methods for the Genesis of a Nano Membrane"*, Arc Org Inorg Chem Sci 3 (4). AOICS.MS.ID.000167, 2018.

[184] R. Gobato, A. Heidari, A. Mitra, *"Using the Quantum Chemistry for Genesis of a Nano Biomembrane with a Combination of the Elements Be, Li, Se, Si, C and H"*, ResearchGate, See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/326201181, 2018.

[185] R. Gobato, A. Heidari, *"Using the Quantum Chemistry for Genesis of a Nano Biomembrane with a Combination of the Elements Be, Li, Se, Si, C and H"*, J Nanomed Res.7 (4): 241–252, 2018.

[186] A. Heidari, *"Bastadins and Bastaranes–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Glob Imaging Insights, Volume 3 (4): 1–7, 2018.

[187] A. Heidari, *"Fucitol, Pterodactyladiene, DEAD or DEADCAT (DiEthyl AzoDiCArboxylaTe), Skatole, the NanoPutians, Thebacon, Pikachurin, Tie Fighter, Spermidine and Mirasorvone Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Glob Imaging Insights, Volume 3 (4): 1–8, 2018.

[188] E. Dadvar, A. Heidari, *"A Review on Separation Techniques of Graphene Oxide (GO)/Base on Hybrid Polymer Membranes for Eradication of Dyes and Oil Compounds: Recent Progress in Graphene Oxide (GO)/Base on Polymer Membranes–Related Nanotechnologies"*, Clin Med Rev Case Rep 5: 228, 2018.

[189] A. Heidari, R. Gobato, *"First–Time Simulation of Deoxyuridine Monophosphate (dUMP) (Deoxyuridylic Acid or Deoxyuridylate) and Vomitoxin (Deoxynivalenol (DON)) ((3α,7α)–3,7,15–Trihydroxy–12,13–Epoxytrichothec–9–En–8–One)–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Parana Journal of Science and Education, Vol. 4, No. 6, pp. 46–67, 2018.

[190] A. Heidari, *"Buckminsterfullerene (Fullerene), Bullvalene, Dickite and Josiphos Ligands Nano Molecules Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Hematology and Thromboembolic Diseases Prevention, Diagnosis and Treatment under Synchrotron and Synchrocyclotron Radiations"*, Glob Imaging Insights, Volume 3 (4): 1–7, 2018.

[191] A. Heidari, *"Fluctuation X–Ray Scattering (FXS) and Wide–Angle X–Ray Scattering (WAXS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (4): 1–7, 2018.

[192] A. Heidari, *"A Novel Approach to Correlation Spectroscopy (COSY), Exclusive Correlation Spectroscopy (ECOSY), Total Correlation Spectroscopy (TOCSY), Incredible Natural–Abundance Double–Quantum Transfer Experiment (INADEQUATE), Heteronuclear Single–Quantum Correlation Spectroscopy (HSQC), Heteronuclear Multiple–Bond Correlation Spectroscopy (HMBC), Nuclear Overhauser Effect Spectroscopy (NOESY) and Rotating Frame Nuclear Overhauser Effect Spectroscopy (ROESY) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (5): 1–9, 2018.

[193] A. Heidari, *"Terphenyl–Based Reversible Receptor with Rhodamine, Rhodamine–Based Molecular Probe, Rhodamine–Based Using the Spirolactam Ring Opening, Rhodamine B with Ferrocene Substituent, Calix[4]Arene–Based Receptor, Thioether + Aniline–Derived Ligand Framework Linked to a Fluorescein Platform, Mercuryfluor–1 (Flourescent Probe), N,N'–Dibenzyl–1,4,10,13–Tetraraoxa–7,16–Diazacyclooctadecane and Terphenyl–Based Reversible Receptor with Pyrene and Quinoline as the Fluorophores–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Glob Imaging Insights, Volume 3 (5): 1–9, 2018.

[194] A. Heidari, *"Small–Angle X–Ray Scattering (SAXS), Ultra–Small Angle X–Ray Scattering (USAXS), Fluctuation X–Ray Scattering (FXS), Wide–Angle X–Ray Scattering (WAXS), Grazing–Incidence Small–Angle X–Ray Scattering (GISAXS), Grazing–Incidence Wide–Angle X–Ray Scattering (GIWAXS), Small–Angle Neutron Scattering (SANS), Grazing–Incidence Small–Angle Neutron Scattering (GISANS), X–Ray Diffraction (XRD), Powder X–Ray Diffraction (PXRD), Wide–Angle X–Ray Diffraction (WAXD), Grazing– Incidence X–Ray Diffraction (GIXD) and Energy–Dispersive X–Ray Diffraction (EDXRD) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (5): 1–10, 2018.

[195] A. Heidari, *"Nuclear Resonant Inelastic X–Ray Scattering Spectroscopy (NRIXSS) and Nuclear Resonance Vibrational Spectroscopy (NRVS)*

Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation", Glob Imaging Insights, Volume 3 (5): 1–7, 2018.

[196] A. Heidari, *"Small–Angle X–Ray Scattering (SAXS) and Ultra–Small Angle X–Ray Scattering (USAXS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (5): 1–7, 2018.

[197] A. Heidari, *"Curious Chloride ($CmCl_3$) and Titanic Chloride ($TiCl_4$)–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules for Cancer Treatment and Cellular Therapeutics"*, J. Cancer Research and Therapeutic Interventions, Volume 1, Issue 1, Pages 01–10, 2018.

[198] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Spectroscopy and Dipole Moment of the Molecule $C_{13}H_{20}BeLi_2SeSi$ via Quantum Chemistry Using Ab Initio, Hartree–Fock Method in the Base Set CC–pVTZ and 6–311G**(3df, 3pd)"*, Arc Org Inorg Chem Sci 3 (5), Pages 402–409, 2018.

[199] A. Heidari, *"C_{60} and C_{70}–Encapsulating Carbon Nanotubes Incorporation into the Nano Polymeric Matrix (NPM) by Immersion of the Nano Polymeric Modified Electrode (NPME) as Molecular Enzymes and Drug Targets for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron and Synchrocyclotron Radiations"*, Integr Mol Med, Volume 5 (3): 1–8, 2018.

[200] A. Heidari, *"Two–Dimensional (2D) ^1H or Proton NMR, ^{13}C NMR, ^{15}N NMR and ^{31}P NMR Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Glob Imaging Insights, Volume 3 (6): 1–8, 2018.

[201] A. Heidari, *"FT–Raman Spectroscopy, Coherent Anti–Stokes Raman Spectroscopy (CARS) and Raman Optical Activity Spectroscopy (ROAS) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues with the Passage of Time under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (6): 1–8, 2018.

[202] A. Heidari, *"A Modern and Comprehensive Investigation of Inelastic Electron Tunneling Spectroscopy (IETS) and Scanning Tunneling Spectroscopy on Malignant and Benign Human Cancer Cells, Tissues and Tumors through Optimizing Synchrotron Microbeam Radiotherapy for Human Cancer Treatments and Diagnostics: An Experimental Biospectroscopic Comparative Study"*, Glob Imaging Insights, Volume 3 (6): 1–8, 2018.

[203] A. Heidari, *"A Hypertension Approach to Thermal Infrared Spectroscopy and Photothermal Infrared Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation with the Passage of Time"*, Glob Imaging Insights, Volume 3 (6): 1–8, 2018.

[204] A. Heidari, *"Incredible Natural–Abundance Double–Quantum Transfer Experiment (INADEQUATE), Nuclear Overhauser Effect Spectroscopy (NOESY) and Rotating Frame Nuclear Overhauser Effect Spectroscopy (ROESY) Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Glob Imaging Insights, Volume 3 (6): 1–8, 2018.

[205] A. Heidari, *"2–Amino–9–((1S, 3R, 4R)–4–Hydroxy–3–(Hydroxymethyl)–2–Methylenecyclopentyl)–1H–Purin–6(9H)–One, 2–Amino–9–((1R, 3R, 4R)–4–Hydroxy–3–(Hydroxymethyl)–2–Methylenecyclopentyl)–1H–Purin–6(9H)–One, 2–Amino–9–((1R, 3R, 4S)–4–Hydroxy–3–(Hydroxymethyl)–2–Methylenecyclopentyl)–1H–Purin–6(9H)–One and 2–Amino–9–((1S, 3R, 4S)–4–Hydroxy–3–(Hydroxymethyl)–2–Methylenecyclopentyl)–1H–Purin–6(9H)–One–Enhanced Precatalyst Preparation Stabilization and Initiation Nano Molecules"*, Glob Imaging Insights, Volume 3 (6): 1–9, 2018.

[206] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Spectroscopy and Dipole Moment of the Molecule $C_{13}H_{20}BeLi_2SeSi$ via Quantum Chemistry Using Ab Initio, Hartree–Fock Method in the Base Set CC–pVTZ and 6–311G**(3df, 3pd)"*, American Journal of Quantum Chemistry and Molecular Spectroscopy, Vol. 2, No. 1, pp. 9–17, 2018.

[207] A. Heidari, *"Production of Electrochemiluminescence (ECL) Biosensor Using Os–Pd/HfC Nanocomposites for Detecting and Tracking of Human Gastroenterological Cancer Cells, Tissues and Tumors"*, Int J Med Nano Res 5: 1, 022–034, 2018.

[208] A. Heidari, *"Enhancing the Raman Scattering for Diagnosis and Treatment of Human Cancer Cells, Tissues and Tumors Using Cadmium Oxide (CdO) Nanoparticles"*, J Toxicol Risk Assess 4: 1, 012–025, 2018.

[209] A. Heidari, *"Human Malignant and Benign Human Cancer Cells and Tissues Biospectroscopic Analysis under Synchrotron Radiation Using Anti–Cancer Nano Drugs Delivery"*, Integr Mol Med, Volume 5 (5): 1–13, 2018.

[210] A. Heidari, *"Analogous Nano Compounds of the Form $M(C_8H_8)_2$ Exist for M = (Nd, Tb, Pu, Pa, Np, Th, and Yb)–Enhanced Precatalyst Preparation Stabilization and Initiation (EPPSI) Nano Molecules"*, Integr Mol Med, Volume 5 (5): 1–8, 2018.

[211] A. Heidari, *"Hadron Spectroscopy, Baryon Spectroscopy and Meson Spectroscopy Comparative Study on Malignant and Benign Human Cancer Cells and Tissues under Synchrotron Radiation"*, Integr Mol Med, Volume 5 (5): 1–8, 2018.

[212] R. Gobato, M. R. R. Gobato, A. Heidari, *"Raman Spectroscopy Study of the Nano Molecule $C_{13}H_{20}BeLi_2SeSi$ Using ab initio and Hartree–Fock Methods in the Basis Set CC–pVTZ and 6–311G** (3df, 3pd)"*, International Journal of Advanced Engineering and Science, Volume 7, Number 1, Pages 14–35, 2019.

[213] A. Heidari, R. Gobato, *"Evaluating the Effect of Anti–Cancer Nano Drugs Dosage and Reduced Leukemia and Polycythemia Vera Levels on Trend of the Human Blood and Bone Marrow Cancers under Synchrotron Radiation"*, Trends in Res, Volume 2 (1): 1–8, 2019.

[214] A. Heidari, R. Gobato, *"Assessing the Variety of Synchrotron, Synchrocyclotron and LASER Radiations and Their Roles and Applications in Human Cancer Cells, Tissues and Tumors Diagnosis and Treatment"*, Trends in Res, Volume 2 (1): 1–8, 2019.

[215] A. Heidari, R. Gobato, *"Pros and Cons Controversy on Malignant Human Cancer Cells, Tissues and Tumors Transformation Process to Benign Human Cancer Cells, Tissues and Tumors"*, Trends in Res, Volume 2 (1): 1–8, 2019.

[216] A. Heidari, R. Gobato, *"Three–Dimensional (3D) Simulations of Human Cancer Cells, Tissues and Tumors for Using in Human Cancer Cells, Tissues and Tumors Diagnosis and Treatment as a Powerful Tool in Human Cancer Cells, Tissues and Tumors Research and Anti–Cancer Nano Drugs Sensitivity and Delivery Area Discovery and Evaluation"*, Trends in Res, Volume 2 (1): 1–8, 2019.

[217] A. Heidari, R. Gobato, *"Investigation of Energy Production by Synchrotron, Synchrocyclotron and LASER Radiations in Human Cancer Cells, Tissues and Tumors and Evaluation of Their Effective on Human Cancer Cells, Tissues and Tumors Treatment Trend"*, Trends in Res, Volume 2 (1): 1–8, 2019.

[218] A. Heidari, R. Gobato, *"High–Resolution Mapping of DNA/RNA Hypermethylation and Hypomethylation Process in Human Cancer Cells, Tissues and Tumors under Synchrotron Radiation"*, Trends in Res, Volume 2 (2): 1–9, 2019.

[219] A. Heidari, *"A Novel and Comprehensive Study on Manufacturing and Fabrication Nanoparticles Methods and Techniques for Processing Cadmium Oxide (CdO) Nanoparticles Colloidal Solution"*, Glob Imaging Insights, Volume 4 (1): 1–8, 2019.

[220] A. Heidari, *"A Combined Experimental and Computational Study on the Catalytic Effect of Aluminum Nitride Nanocrystal (AlN) on the Polymerization of Benzene, Naphthalene, Anthracene, Phenanthrene, Chrysene and Tetracene"*, Glob Imaging Insights, Volume 4 (1): 1–8, 2019.

[221] A. Heidari, *"Novel Experimental and Three–Dimensional (3D) Multiphysics Computational Framework of Michaelis–Menten Kinetics for Catalyst Processes Innovation, Characterization and Carrier Applications"*, Glob Imaging Insights, Volume 4 (1): 1–8, 2019.

[222] A. Heidari, *"The Hydrolysis Constants of Copper (I) (Cu^+) and Copper (II) (Cu^{2+}) in Aqueous Solution as a Function of pH Using a Combination of pH Measurement and Biospectroscopic Methods and Techniques"*, Glob Imaging Insights, Volume 4 (1): 1–8, 2019.

[223] A. Heidari, *"Vibrational Biospectroscopic Study of Ginormous Virus–Sized Macromolecule and Polypeptide Macromolecule as Mega Macromolecules Using Attenuated Total Reflectance–Fourier Transform Infrared (ATR–FTIR) Spectroscopy and Mathematica 11.3"*, Glob Imaging Insights, Volume 4 (1): 1–8, 2019.

[224] A. Heidari, *"Three–Dimensional (3D) Imaging Spectroscopy of Carcinoma, Sarcoma, Leukemia, Lymphoma, Multiple Myeloma, Melanoma, Brain and Spinal Cord Tumors, Germ Cell Tumors, Neuroendocrine Tumors and Carcinoid Tumors under Synchrotron Radiation"*, Glob Imaging Insights, Volume 4 (1): 1–9, 2019.

[225] R. Gobato, M. R. R. Gobato, A. Heidari, *"Storm Vortex in the Center of Paraná State on June 6, 2017: A Case Study"*, Sumerianz Journal of Scientific Research, Vol. 2, No. 2, Pages 24–31, 2019.

[226] R. Gobato, M. R. R. Gobato, A. Heidari, *"Attenuated Total Reflection–Fourier Transform Infrared (ATR–FTIR) Spectroscopy Study of the Nano Molecule $C_{13}H_{20}BeLi_2SeSi$ Using ab initio and Hartree–Fock Methods in the Basis Set RHF/CC–pVTZ and RHF/6–311G** (3df, 3pd): An Experimental Challenge to Chemists"*, Chemistry Reports, Vol. 2, No. 1, Pages 1–26, 2019.

[227] A. Heidari, *"Three–Dimensional (3D) Imaging Spectroscopy of Carcinoma, Sarcoma, Leukemia, Lymphoma, Multiple Myeloma, Melanoma, Brain and Spinal Cord Tumors, Germ Cell Tumors, Neuroendocrine Tumors and Carcinoid Tumors under Synchrocyclotron Radiation"*, Res Adv Biomed Sci Technol 1 (1): 01–17, 2019.

[228] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"New Nano–Molecule Kurumi–$C_{13}H_{20}BeLi_2SeSi/C_{13}H_{19}BeLi_2SeSi$, and Raman Spectroscopy Using ab initio, Hartree–Fock Method in the Base Set CC–pVTZ and 6–311G** (3df, 3pd)"*, J Anal Pharm Res. 8 (1): 1–6, 2019.

[229] A. Heidari, J. Esposito, A. Caissutti, *"The Importance of Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR) and Raman Biospectroscopy of Single–Walled Carbon Nanotubes (SWCNT) and Multi–Walled Carbon Nanotubes (MWCNT) in Interpreting Infrared and Raman Spectra of Human Cancer Cells, Tissues and Tumors"*, Oncogen 2 (2): 1–21, 2019.

[230] A. Heidari, *"Mechanism of Action and Their Side Effects at a Glance Prevention, Treatment and Management of Immune System and Human Cancer Nano Chemotherapy"*, Nanosci Technol 6 (1): 1–4, 2019.

[231] A. Heidari, J. Esposito, A. Caissutti, *"The Quantum Entanglement Dynamics Induced by Non–Linear Interaction between a Moving Nano Molecule and a Two–Mode Field with Two–Photon Transitions Using Reduced Von Neumann Entropy and Jaynes–Cummings Model for Human Cancer Cells, Tissues and Tumors Diagnosis"*, Int J Crit Care Emerg Med 5 (2): 071–084, 2019.

[232] A. Heidari, J. Esposito, A. Caissutti, *"Palytoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, J Pharm Drug Res, 3 (1): 150–170, 2019.

[233] A. Heidari, J. Esposito, A. Caissutti, *"Aplysiatoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling*

Structure in Vibrational Spectra Analysis", J Chem Sci Eng, 2 (2): 70–89, 2019.

[234] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Spectroscopy and Dipole Moment of the Molecule $C_{13}H_{20}BeLi_2SeSi$ via Quantum Chemistry Using Ab initio, Hartree–Fock Method in the Base Set CC–pVTZ and 6–311G** (3df, 3pd)"*, American Journal of Quantum Chemistry and Molecular Spectroscopy, 2 (1): 9–17, 2018.

[235] A. Heidari, J. Esposito, A. Caissutti, *"Cyanotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Br J Med Health Res. 6 (04): 21–60, 2019.

[236] A. Heidari, *"Potential and Theranostics Applications of Novel Anti–Cancer Nano Drugs Delivery Systems in Preparing for Clinical Trials of Synchrotron Microbeam Radiation Therapy (SMRT) and Synchrotron Stereotactic Radiotherapy (SSRT) for Treatment of Human Cancer Cells, Tissues and Tumors Using Image Guided Synchrotron Radiotherapy (IGSR)"*, Ann Nanosci Nanotechnol. 3 (1): 1006–1019, 2019.

[237] A. Heidari, J. Esposito, A. Caissutti, *"Study of Anti–Cancer Properties of Thin Layers of Cadmium Oxide (CdO) Nanostructure"*, Int J Analyt Bioanalyt Methods 1 (1): 003–022, 2019.

[238] A. Heidari, J. Esposito, A. Caissutti, *"Alpha–Conotoxin, Omega–Conotoxin and Mu–Conotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, International Journal of Advanced Chemistry, 7 (1) 52–66, 2019.

[239] A. Heidari, *"Clinical and Medical Pros and Cons of Human Cancer Cells' Enzymotherapy, Immunotherapy, Chemotherapy, Radiotherapy, Hormone Therapy and Targeted Therapy Process under Synchrotron Radiation: A Case Study on Mechanism of Action and Their Side Effects"*, Parana Journal of Science and Education (PJSE)–v. 5, n. 3, (1–23) May 2, 2019.

[240] A. Heidari, *"The Importance of the Power in CMOS Inverter Circuit of Synchrotron and Synchrocyclotron Radiations Using 50 (nm) and 100 (nm) Technologies and Reducing the Voltage of Power Supply"*, Radiother Oncol Int. 1 (1): 1002–1015, 2019.

[241] A. Heidari, J. Esposito, A. Caissutti, *"The Importance of Quantum Hydrodynamics (QHD) Approach to Single–Walled Carbon Nanotubes (SWCNT) and Multi–Walled Carbon Nanotubes (MWCNT) in Genetic Science"*, SCIOL Genet Sci. 2 (1): 113–129, 2019.

[242] A. Heidari, J. Esposito, A. Caissutti, *"Anatoxin–a and Anatoxin–a(s) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Saudi J Biomed Res, 4 (4): 174–194, 2019.

[243] R. Gobato, M. R. R. Gobato, A. Heidari, *"Evidence of Tornado Storm Hit the Counties of Rio Branco do Ivaí and Rosario de Ivaí, Southern Brazil"*, Sci Lett, 7 (1): 32–40, 2019.

[244] M. Jeyaraj, V. Mahalingam, A. Indhuleka, P. Sennu, M. S. Ho, A. Heidari, *"Chemical Analysis of Surface Water Quality of River Noyyal Connected Tank in Tirupur District, Tamil Nadu, India"*, Water and Energy International, Volume 62r, Issue 1, pp. 63–68, 2019.

[245] A. Heidari, J. Esposito, A. Caissutti, *"6–Methoxy–8–[[6–Methoxy–8–[[6–Methoxy–2–Methyl–1–(2–Methylpropyl)–3,4– Dihydro–1H–Isoquinolin–7–yl]Oxy]–2–Methyl–1–(2–Methylpropyl)–3,4–Dihydro–1H–Isoquinolin–7–yl]Oxy]–2–Methyl–1–(2–Methylpropyl)–3,4–Dihydro–1H–Isoquinolin–7–ol Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, J. Adv. Phys. Chem., Volume 1, Issue 1, pp. 1–6, 2019.

[246] A. Heidari, J. Esposito, A. Caissutti, *"Shiga Toxin and Shiga–Like Toxin (SLT) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Annal Biostat & Biomed Appli. 2 (3): 1–4, 2019.

[247] A. Heidari, J. Esposito, A. Caissutti, *"Alpha–Bungarotoxin, Beta–Bungarotoxin and Kappa–Bungarotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Archives of Pharmacology and Pharmaceutical Sciences, ReDelve, Volume 2019, Issue 01, pp. 1–24, 2019.

[248] A. Heidari, J. Esposito, A. Caissutti, *"Okadaic Acid Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Int J Analyt Bioanalyt Methods 1 (1): 1–19, 2019.

[249] A. Heidari, *"Investigation of the Processes of Absorption, Distribution, Metabolism and Elimination (ADME) as Vital and Important Factors for Modulating Drug Action and Toxicity"*, Open Access J Oncol, 2 (1): 180010–180012, 2019.

[250] A. Heidari, J. Esposito, A. Caissutti, *"Pertussis Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Chemistry Reports, Vol. 1 Iss. 2, Pages 1–5, 2019.

[251] R. Gobato, M. R. R. Gobato, A. Heidari, *"Rhodochrosite as Crystal Oscillator"*, Am J Biomed Sci & Res. 3 (2), 187, 2019.

[252] A. Heidari, J. Esposito, A. Caissutti, *"Tetrodotoxin (TTX) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling*

Structure in Vibrational Spectra Analysis", Journal of New Developments in Chemistry, Volume No: 2, Issue No: 3, Page Numbers 26–48, 2019.

[253] A. Heidari, J. Esposito, A. Caissutti, *"The Importance of Analysis of Vibronic–Mode Coupling Structure in Vibrational Spectra of Supramolecular Aggregates of (CA*M) Cyanuric Acid (CA) and Melamine (M) beyond the Franck–Condon Approximation"*, Journal of Clinical and Medical Images, 2 (2): 1–20, 2019.

[254] A. Heidari, J. Esposito, A. Caissutti, *"Microcystin–LR Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Malaysian Journal of Chemistry, Vol. 21 (1), 70–95, 2019.

[255] A. Heidari, J. Esposito, A. Caissutti, *"Botulinum Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Journal of Mechanical Design and Vibration, vol. 7, no. 1: 1–15, 2019.

[256] A. Heidari, J. Esposito, A. Caissutti, *"Domoic Acid (DA) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Clinical Oncology Journal 1. 2: 03–07, 2019.

[257] A. Heidari, J. Esposito, A. Caissutti, *"Surugatoxin (SGTX) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Clinical Oncology Journal 1. 2: 14–18, 2019.

[258] A. Heidari, J. Esposito, A. Caissutti, *"Decarbamoylsaxitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Clinical Oncology Journal 1. 2: 19–23, 2019.

[259] A. Heidari, J. Esposito, A. Caissutti, *"Gonyautoxin (GTX) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Clinical Oncology Journal 1. 2: 24–28, 2019.

[260] A. Heidari, J. Esposito, A. Caissutti, *"Hislrionicotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 1: 01–06, 2019.

[261] A. Heidari, J. Esposito, A. Caissutti, *"Dihydrokainic Acid Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 1: 07–12, 2019.

[262] A. Heidari, J. Esposito, A. Caissutti, *"Aflatoxin B1 (AFB1), B2 (AFB2), G1 (AFG1), G2 (AFG2), M1 (AFM1), M2 (AFM2), Q1 (AFQ1) and P1 (AFP1) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 1: 25–32, 2019.

[263] A. Heidari, J. Esposito, A. Caissutti, *"Mycotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 1: 13–18, 2019.

[264] A. Heidari, J. Esposito, A. Caissutti, *"Bufotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 1: 19–24, 2019.

[265] A. Heidari, J. Esposito, A. Caissutti, *"Kainic Acid (Kainite) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Journal of Neurology 1. 2: 02–07, 2019.

[266] A. Heidari, J. Esposito, A. Caissutti, *"Nereistoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Journal of Neurology 1. 2: 19–24, 2019.

[267] A. Heidari, J. Esposito, A. Caissutti, *"Spider Toxin and Raventoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Parana Journal of Science and Education. Vol. 5, No. 4, pp. 1–28, 2019.

[268] A. Heidari, J. Esposito, A. Caissutti, *"Ochratoxin A, Ochratoxin B, Ochratoxin C, Ochratoxin α and Ochratoxin TA Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 2: 03–10, 2019.

[269] A. Heidari, J. Esposito, A. Caissutti, *"Brevetoxin A and B Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 2: 11–16, 2019.

[270] A. Heidari, J. Esposito, A. Caissutti, *"Lyngbyatoxin–a Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Drug Delivery Research 1. 2: 23–28, 2019.

[271] A. Heidari, J. Esposito, A. Caissutti, *"Balraechotoxin (BTX) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Cientific Journal of Neurology 1. 3: 01–05, 2019.

[272] A. Heidari, J. Esposito, A. Caissutti, *"Hanatoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Int. J. Pharm. Sci. Rev. Res., 57 (1), Pages: 21–32, 2019.

[273] A. Heidari, J. Esposito, A. Caissutti, *"Neurotoxin and Alpha–Neurotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, J Biomed Sci & Res. 3 (6), 550–563, 2019.

[274] A. Heidari, J. Esposito, A. Caissutti, *"Antillatoxin (ATX) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure"*, American Journal of Optics and Photonics. Vol. 7, No. 1, pp. 18–27, 2019.

[275] R. Gobato, M. R. R. Gobato, A. Heidari, *"Calculation by UFF Method of Frequencies and Vibrational Temperatures of the Unit Cell of the Rhodochrosite Crystal"*, International Journal of Advanced Chemistry, 7 (2) 77–81, 2019.

[276] A. Heidari, J. Esposito, A. Caissutti, *"Analysis of Vibronic–Mode Coupling Structure in Vibrational Spectra of Fuzeon as a 36 Amino Acid Peptide for HIV Therapy beyond the Multi–Dimensional Franck–Condon Integrals Approximation"*, International Journal of Advanced Chemistry, 7 (2) 82–96, 2019.

[277] A. Heidari, J. Esposito, A. Caissutti, *"Debromoaplysiatoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Applied Chemistry, 2 (1) 17–54, 2019.

[278] A. Heidari, J. Esposito, A. Caissutti, *"Enterotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, JRL J Sci Technol. vol1–iss2: jst1001, 1–16, 2019.

[279] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Rhodochrosite Optical Indicatrix"*, Peer Res Nest. 1 (3) 1–2, 2019.

[280] A. Heidari, J. Esposito, A. Caissutti, *"Anthrax Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Research & Reviews: Journal of Computational Biology. 8 (2): 23–51, 2019.

[281] A. Heidari, J. Esposito, A. Caissutti, *"Kalkitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Can J Biomed Res & Tech. 2 (1): 1–21, 2019.

[282] A. Heidari, J. Esposito, A. Caissutti, *"Neosaxitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Clin Case Studie Rep, Volume 2 (3): 1–14, 2019.

[283] A. Heidari, J. Esposito, A. Caissutti, *"6–Methoxy–8–[[6–Methoxy–8–[[6–Methoxy–2–Methyl–1–(2–Methylpropyl)–3,4–Dihydro–1H–Isoquinolin–7–yl]Oxy]–2–Methyl–1–(2–Methylpropyl)–3,4–Dihydro–1H–Isoquinolin–7–yl]Oxy]–2–Methyl–1–(2–Methylpropyl)–3,4–Dihydro–1H–Isoquinolin–7–ol Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Clin Case Studie Rep, Volume 2 (3): 1–14, 2019.

[284] A. Heidari, *"Comparison of Synchrotron Radiation and Synchrocyclotron Radiation Performance in Monitoring of Human Cancer Cells, Tissues and Tumors"*, Clin Case Studie Rep, Volume 2 (3): 1–12, 2019.

[285] A. Heidari, J. Esposito, A. Caissutti, *"Kalkitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Clin Case Studie Rep, Volume 2 (3): 1–14, 2019.

[286] A. Heidari, J. Esposito, A. Caissutti, *"Diphtheria Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis: A Spectroscopic Study on an Anti–Cancer Drug"*, Clin Case Studie Rep, Volume 2 (3): 1–14, 2019.

[287] A. Heidari, J. Esposito, A. Caissutti, *"Symbiodinolide Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Clin Case Studie Rep, Volume 2 (3): 1–14, 2019.

[288] A. Heidari, J. Esposito, A. Caissutti, *"Saxitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Am J Exp Clin Res. 6 (4): 364–377, 2019.

[289] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Hartree–Fock Methods Analysis Protonated Rhodochrosite Crystal and Potential in the Elimination of Cancer Cells through Synchrotron Radiation"*, Vol. 5, No. 3, pp. 27–36, 2019.

[290] R. Gobato, I. K. K. Dosh, A. Heidari, A. Mitra, M. R. R. Gobato, *"Perspectives on the Elimination of Cancer Cells Using Rhodochrosite Crystal Through*

Synchrotron Radiation, and Absorption the Tumoral and Non–Tumoral Tissues", Arch Biomed Eng & Biotechnol. 3 (2): 1–2, 2019.

[291] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Unrestricted Hartree–Fock Computational Simulation in a Protonated Rhodochrosite Crystal"*, Phys Astron Int J. 3 (6):220–228, 2019.

[292] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Perspectives on Sub–Nanometer Level of Electronic Structure of the Synchrotron with Mendelevium Nanoparticles for Elimination of Human Cancer Cells, Tissues and Tumors Treatment Using Mathematica 12.0"*, Journal of Energy Conservation, Volume 1, Issue 2, Pages 46–73, 2019.

[293] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Simulation of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Bohrium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Current Research in Biochemistry and Molecular Biology, 1 (1), 17–44, 2019.

[294] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Investigation of Interaction between Synchrotron Radiation and Thulium Nanoparticles for Human Cancer Cells, Tissues and Tumors Treatment"*, European Journal of Scientific Exploration, Volume 2, Issue 3, Pages 1–8, 2019.

[295] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"The Effectiveness of the Treatment Human Cancer Cells, Tissues and Tumors Using Darmstadtium Nanoparticles and Synchrotron Radiation"*, International Journal of Advanced Engineering and Science, Volume 9, Number 1, Pages 9–39, 2020.

[296] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment in Simulation of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Uranium Nanoparticles"*, Nano Prog., 1 (2), 1–6, 2019.

[297] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"A New Approach to Interaction between Beam Energy and Erbium Nanoparticles"*, Saudi J Biomed Res, 4 (11): 372–396, 2019.

[298] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Consideration of Energy Functions and Wave Functions of the Synchrotron Radiation and Samarium Nanoparticles Interaction During Human Cancer Cells, Tissues and Tumors Treatment Process"*, Sci. Int. (Lahore), 31 (6), 885–908, 2019.

[299] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"An Outlook on Optothermal Human Cancer Cells, Tissues and Tumors Treatment Using Lanthanum Nanoparticles under Synchrotron Radiation"*, Journal of Materials Physics and Chemistry, Vol. 7, No. 1, 29–45, 2019.

[300] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Effectiveness of Einsteinium Nanoparticles in Optothermal Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Journal of Analytical Oncology, 8, 1, 43–62, 2019.

[301] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Relation between Synchrotron Radiation and Dubnium Nanoparticles in Human Cancer Cells, Tissues and Tumors Treatment Process"*, Int. Res. J. Applied Sci., Volume 1, Number 4, Pages 1–20, 2019.

[302] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"A Novel Prospect on Interaction of Synchrotron Radiation Emission and Europium Nanoparticles for Human Cancer Cells, Tissues and Tumors Treatment"*, European Modern Studies Journal, 3 (5), 11–24, 2019.

[303] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Advantages, Effectiveness and Efficiency of Using Neodymium Nanoparticles by 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, International Journal of Advanced Chemistry, 7 (2) 119–135, 2019.

[304] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Role and Applications of Promethium Nanoparticles in Human Cancer Cells, Tissues and Tumors Treatment"*, Scientific Modelling and Research, 4 (1): 8–14, 2019.

[305] A. Heidari, J. Esposito, A. Caissutti, *"Maitotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis: A Spectroscopic Study on an Anti–Cancer Drug"*, Glob Imaging Insights 4 (2), 1–13, 2019.

[306] A. Heidari, J. Esposito, A. Caissutti, *"Biotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Glob Imaging Insights 4 (2), 1–14, 2019.

[307] A. Heidari, J. Esposito, A. Caissutti, *"Time–Resolved Resonance FT–IR and Raman Spectroscopy and Density Functional Theory Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra of Nanopolypeptide Macromolecule beyond the Multi–Dimensional Franck–Condon Integrals Approximation and Density Matrix Method"*, Glob Imaging Insights 4 (2), 1–14, 2019.

[308] A. Heidari, J. Esposito, A. Caissutti, *"Cholera Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Glob Imaging Insights 4 (2), 1–14, 2019.

[309] A. Heidari, J. Esposito, A. Caissutti, *"Nodularin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Glob Imaging Insights 4 (2), 1–14, 2019.

[310] A. Heidari, J. Esposito, A. Caissutti, *"Cangitoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling*

Structure in Vibrational Spectra Analysis", Glob Imaging Insights 4 (2), 1–13, 2019.

[311] A. Heidari, J. Esposito, A. Caissutti, *"Ciguatoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Glob Imaging Insights 4 (2), 1–14, 2019.

[312] A. Heidari, J. Esposito, A. Caissutti, *"Brevetoxin (a) and (b) Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis: A Spectroscopic Study on an Anti–HIV Drug"*, Cientific Drug Delivery Research 1 (2), 11–16, 2019.

[313] A. Heidari, J. Esposito, A. Caissutti, *"Cobrotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Trends in Res 3 (1), 1–13, 2019.

[314] A. Heidari, J. Esposito, A. Caissutti, *"Cylindrospermopsin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Trends in Res 3 (1), 1–14, 2019.

[315] A. Heidari, J. Esposito, A. Caissutti, *"Anthrax Toxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis"*, Trends in Res 3 (1), 1–14, 2019.

[316] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Investigation of Moscovium Nanoparticles as Anti–Cancer Nano Drugs for Human Cancer Cells, Tissues and Tumors Treatment"*, Elixir Appl. Chem. 137A, 53943–53963, 2019.

[317] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Function of the Beam Energy and Holmium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, European Journal of Advances in Engineering and Technology, 6 (12): 34–62, 2019.

[318] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Human Cancer Cells, Tissues and Tumors Treatment Using Dysprosium Nanoparticles"*, Asian J. Mat. Chem. 4 (3–4), pp. 47–51, 2019.

[319] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Simulation of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Plutonium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, J. Cancer Research and Cellular Therapeutics, Volume 2 (4), Pages 1–19, 2019.

[320] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Gadolinium Nanoparticles Delivery Effect on Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Applied Chemistry, 2 (2) 55–97, 2019.

[321] A. Heidari, K. Schmitt, M. Henderson, E. Besana, R. Gobato, *"Pros and Cons of Livermorium Nanoparticles for Human Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation Using Mathematica 12.0"*, Parana Journal of Science and Education (PJSE) – v. 6, n. 1, (1–31) January 11, 2020.

[322] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, *"Challenging Giants. Hartree–Fock Methods Analysis Protonated Rhodochrosite Crystal and Potential in the Elimination of Cancer Cells Through Synchrotron Radiation"*, Biomed J Sci & Tech Res 25 (1), pp. 18843–18848, 2020.

[323] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Simulation of Interaction between Ytterbium Nanoparticles and Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–18, 2019.

[324] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Modelling of Interaction between Curium Nanoparticles and Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–18, 2019.

[325] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Berkelium Nanoparticles Delivery Effectiveness and Efficiency on Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–18, 2019.

[326] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Fermium Nanoparticles Delivery Mechanism in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–17, 2019.

[327] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Advantages of Lawrencium Nanoparticles for Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–18, 2019.

[328] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Pros and Cons of the Roentgenium Nanoparticles for Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–17, 2019.

[329] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Imagery of Flerovium Nanoparticles Delivery Process in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–18, 2019.

[330] A. Heidari, J. Esposito, A. Caissutti, *"Maitotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis: A Spectroscopic Study on an Anti–Gum Cancer Drug"*, Dent Oral Maxillofac Res, Volume 5, Issue 5, Pages 1–16, 2019.

[331] A. Heidari, J. Esposito, A. Caissutti, *"Batrachotoxin Time–Resolved Absorption and Resonance FT–IR and Raman Biospectroscopy and Density Functional Theory (DFT) Investigation of Vibronic–Mode Coupling Structure in Vibrational Spectra Analysis: A Spectroscopic Study on an Anti–Gum Cancer Drug"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–16, 2019.

[332] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Hafnium Nanoparticles and Their Roles and Applications in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–17, 2019.

[333] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Dramaturgy of Technetium Nanoparticles Delivery Process in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–19, 2019.

[334] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Computational Approach to Interaction between Synchrotron Radiation Emission as a Function of the Beam Energy and Ruthenium Nanoparticles in Human Gum Cancer Cells, Tissues and Tumors Treatment"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–18, 2019.

[335] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Appearance Check of Rhodium Nanoparticles Delivery Trend in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–19, 2019.

[336] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Orientation Rhenium Nanoparticles Delivery Target on Human Gum Cancer Cells, Tissues and Tumors under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–18, 2019.

[337] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Drug Delivery Systems (DDSs) of Osmium Nanoparticles on Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–18, 2019.

[338] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Development of Successful Formulations for Oral Drug Delivery Concepts of Iridium Nanoparticles in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 5, Issue 6, Pages 1–19, 2019.

[339] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Classification of Drug Delivery System of Niobium Nanoparticles in Human Gum Cancer Gum Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 6, Issue 1, Pages 1–17, 2020.

[340] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Types of Drug Delivery System Slideshare of Protactinium Nanoparticles in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 6, Issue 1, Pages 1–17, 2020.

[341] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"New Drug Delivery System in Pharmaceutics of Neptunium Nanoparticles in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 6, Issue 1, Pages 1–18, 2020.

[342] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Drug Delivery Describes the Method and Approach to Delivering Drugs or Pharmaceuticals and Other Xenobiotics to Their Site of Action within Radon Nanoparticles Effects on Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 6, Issue 1, Pages 1–18, 2020.

[343] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Applications of Oganesson Nanoparticles in Increasing Rapidly with the Promise of Targeted and Efficient Drug Delivery in Human Gum Cancer Cells, Tissues and Tumors Treatment under Synchrotron Radiation"*, Dent Oral Maxillofac Res, Volume 6, Issue 1, Pages 1–19, 2020.

[344] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Wheeler–Feynman Time– Symmetric Study of Effectiveness and Efficiency of Terbium Nanoparticles Delivery Mechanism in Human Cancer Cells, Tissues and Tumors under Synchrotron Radiation"*, Frontiers Drug Chemistry Clinical Res, Volume 3, Issue 1, Pages 1–13, 2020.

[345] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Simulation of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Californium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Oncol Res: Open Acce. 1 (1): 1–17, 2019.

[346] A. Heidari, *"Market Analysis of Glycobiology and Glycochemistry 2020"*, J Genet Disor Genet Rep. 8: 1, 2019.

[347] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Synchrotron Radiation Emission as a Function of the Beam Energy and Thorium Nanoparticles"*, International Medicine; 2 (1): 67–73, 2020.

[348] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Stochastic Study of Relativistic Lutetium Nanoparticles Moving in a Quantum Field of Synchrotron Radiation Emission When Charged Lutetium Nanoparticles Are Accelerated Radially in Human Cancer Cells, Tissues and Tumors Treatment"*, Frontiers Drug Chemistry Clinical Res, Volume 3, Issue 1, Pages 1–15, 2020.

[349] A. Heidari, A. Caissutti, M. Henderson, K. Schmitt, E. Besana, J. Esposito, V. Peterson, *"Recent New Results and Achievements of California South University (CSU) BioSpectroscopy Core Research Laboratory for COVID–19 or 2019–nCoV Treatment: Diagnosis and Treatment Methodologies of "Coronavirus"*, Journal of Current Viruses and Treatment Methodologies, Vol–1, Issue 1, Pg. no. 3–41, 2020.

[350] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Human Cancer Cells, Tissues and Tumors Treatment Through Interaction Between Synchrotron Radiation and Cerium Nanoparticles"*, Sci Lett. 8 (1): 7–17, 2020.

[351] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Characteristic Polarization and the Frequencies Generated in Interaction of Synchrotron Radiation Emission and Actinium Nanoparticles in Human Cancer Cells, Tissues and Tumors Treatment Process"*, Parana Journal of Science and Education (PJSE)–v. 6, n.3, (13–47) April 15, 2020.

[352] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Californium Nanoparticles and Human Cancer Treatment: Commemorating the 100 th (1920–2020) Anniversary of the California South University (CSU)"*, Parana Journal of Science and Education (PJSE)–v. 6, n. 3, (48–83) April 15, 2020.

[353] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"A Chemical Review on Cancer Immunology and Immunodeficiency"*, International Journal of Advanced Chemistry, 8 (1): 27–43, 2020.

[354] A. Heidari, V. Peterson, *"A Comprehensive Review on Functional Roles of Cancerous Immunoglobulins and Potential Applications in Cancer Immunodiagnostics and Immunotherapy"*, International Journal of Advanced Chemistry, 8 (1): 44–58, 2020.

[355] A. Heidari, V. Peterson, *"An Encyclopedic Review on Stereotactic Hypofractionated Radiotherapy, Re–Irradiation, and Cancer Genome Research"*, International Journal of Advanced Chemistry, 8 (1): 59–74, 2020.

[356] A. Heidari, V. Peterson, *"A Pervasive Review on Biomarker in Cervical Intraepithelial Lesions and Carcinoma"*, International Journal of Advanced Chemistry, 8 (1): 75–88, 2020.

[357] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Hereditary Immunity in Cancer"*, International Journal of Advanced Chemistry, 8 (1): 94–110, 2020.

[358] R. Gobato, M. R. R. Gobato, A. Heidari, A. Mitra, I. K. K. Dosh, *"Secret Messages in Enigmatic Playful Texts"*, ABEB, 4 (2): 1–10, 2020.

[359] A. Heidari, R. Gobato, M. R. R. Gobato, A. Mitra, *"Hartree–Fock Methods Analysis Protonated Rhodochrosite Crystal and Potential in the Elimination of Cancer Cells through Synchrotron Radiation Using Small–Angle X–Ray Scattering (SAXS), Ultra–Small Angle X–Ray Scattering (USAXS), Fluctuation X–Ray Scattering (FXS), Wide–Angle X–Ray Scattering (WAXS), Grazing–Incidence Small–Angle X–Ray Scattering (GISAXS), Grazing–Incidence Wide–Angle X–Ray Scattering (GIWAXS) and Small–Angle Neutron Scattering (SANS)"*, AJAN, 1 (1): 1–8, 2020.

[360] A. Heidari, R. Gobato, I. K. K. Dosh, A. Mitra, M. R. R. Gobato, *"Single Layer Bioinorganic Membrane Using the Kurumi Molecule"*, AJAN, 1 (1): 16–20, 2020.

[361] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Pulsed Time Structure of Nobelium Nanoparticles in Human Cancer Cells, Tissues and Tumors Treatment Process Which Covers from Microwaves to Hard X–Rays"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–17, 2020.

[362] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Abraham–Lorentz–Dirac Force Approach to Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Rutherfordium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–17, 2020.

[363] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Liénard–Wiechert Field Study of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Seaborgium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–17, 2020.

[364] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Lorenz Gauge, Electric and Magnetic Fields Study of Interaction of Gravitationally Accelerating Ions through the Super Contorted 'Tubular' Polar Areas of Magnetic Fields and Hassium Nanoparticles"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–18, 2020.

[365] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Scalar Abraham–Lorentz– Dirac–Langevin Equation, Radiation Reaction and Vacuum Fluctuations Simulation of Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Tennessine Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–17, 2020.

[366] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"The Dynamics and Quantum Mechanics of an Interaction of Synchrotron Radiation Emission as a Function of the Beam Energy and Meitnerium Nanoparticles Using 3D Finite Element Method (FEM) as an Optothermal Human Cancer Cells, Tissues and Tumors Treatment"*, Dent Oral Maxillofac Res, Volume 6, Issue 2, Pages 1–17, 2020.

[367] A. Heidari, *"Future Advanced Study of Thin Layers of DNA/RNA Hybrid Molecule Nanostructure"*, J Mol Nanot Nanom 2 (1): 110–116, 2020.

[368] A. Heidari, *"Study of Thin Layers of Cadmium Oxide (CdO) Nanostructure"*, Nano Prog., 2 (3), 1–10, 2020.

[369] A. Heidari, *"Effect of Solvent on Non–Linear Synchrotron Absorption of Multi– Walled Carbon Nanotubes (MWCNTs) with DNA/RNA Function"*, Sci. Int. (Lahore), 32 (3), 291–315, 2020.

[370] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Study of Copernicium Nanoparticles Delivery Process in Human Cancer Cells, Tissues and Tumors Under Gravitationally Accelerating Ions Through the Super Contorted 'Tubular' Polar Areas of Magnetic Fields"*, Adv. Sci. Eng. Med. 12 (5), 571–575, 2020.

[371] A. Heidari, K. Schmitt, M. Henderson, E. Besana, *"Specific and Selective Targeting Human Cancer Cells, Tissues and Tumors with Seaborgium Nanoparticles as*

Carriers and Nano–Enhanced Drug Delivery and Therapeutic in Cancer Treatment and Beyond under Synchrotron Radiation", Parana Journal of Science and Education. Vol. 6, No. 4, pp. 8–50, 2020.

[372] Amir Shahram Yousefi Kashi, Samira Khaledi, Mohammad Houshyari, *"CT Simulation to Evaluate of Pelvic Lymph Node Coverage in Conventional Radiotherapy Fields Based on Bone and Vessels Landmarks in Prostate Cancer Patients"*, Iran J Cancer Prev. 2016; 9 (3): e6233.

[373] Amir Shahram Yousefi Kashi, Abolfazl Razzaghdoust, Afshin Rakhsha, *"A Comparative Study of Treatment Toxicities Between FOLFOX 4 and Modified FOLFOX 6 in Iranian Colorectal Cancer Patients"*, Iran J Cancer Prev. 2017; 10 (1): e9429.

[374] Amir Shahram Yousefi Kashi, Sharareh Yazdanfar, Mohammad–Esmaeil Akbari, Afshin Rakhsha, *"Triple Negative Breast Cancer in Iranian Women: Clinical Profile and Survival Study"*, Int J Cancer Manag. 2017; 10 (8): e10471.

[375] Amir Shahram Y. Kashi, Rezvan Montazeri, Afshin Rakhsha, *"Clinical Outcome and Prognostic Factors in Iranian Breast Cancer Patients After Neoadjuvant Chemotherapy: A Comparative Matched Study"*, Int J Cancer Manag. 2018; 11 (5): e67739.

[376] Afshin Rakhsha, Amir Anvari, Abolfazl Razzaghdoust, Amir Shahram Yousefi Kashi, *"Clinical Outcome and Prognostic Factors for Very Young Patients with Breast Cancer: A Comparative Matched Single Institution Study in Iran"*, Int J Cancer Manag. 2017; 10 (9): e11772.

[377] Afshin Rakhsha, Amir Shahram Yousefi Kashi, Seied Mohsen Hoseini, *"Evaluation of Survival and Treatment Toxicity with High–Dose–Rate Brachytherapy with Cobalt 60 In Carcinoma of Cervix"*, Iran J Cancer Preven. 2015; 8 (4): e3573. 20

[378] A. Sh. Yousefi Kashi, B. Mofid, H. R. Mirzaei, P. Azadeh, 2010. *"Overall Survival and Related Prognostic Factors in Metastatic Brain Tumors Treated with Whole Brain Radiation Therapy"*, Research Journal of Medical Sciences, Volume: 4, Issue: 3, Page No.: 213–216.