

DIMITRIS EMFIETZOGLU, PhD



Contact

Medical Physics Laboratory
 Department of Medicine
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Education

BSc	Physics	University of Athens	1986-1991
MSc	Radiation Science	Georgetown University	1991-1993
PhD	Radiation Biophysics	Georgetown University	1993-1996
Postdoc	Radiation Medicine	Georgetown University Hospital	1999 (12m)

National service in the Greek Navy (1997-1998)

Academic Appointments

- 2020– Professor, Medical Physics Lab, Dept. of Medicine, University of Ioannina
- 2014 Associate Professor, Medical Physics Lab, Dept. of Medicine, University of Ioannina
- 2009 Assistant Professor (tenured), Medical Physics Lab, Dept. of Medicine, University of Ioannina
- 2005 Assistant Professor, Medical Physics Lab, Dept. of Medicine, University of Ioannina
- 2000 Lecturer, Medical Physics Lab, Dept. of Medicine, University of Ioannina

Administrative Positions

- 2019– Director, Medical Physics Laboratory, Dept. of Medicine, University of Ioannina
- 2019– Steering Committee Member, MSc program in Medical Radiation Physics
- 2000– Committee Member, Physics Entrance Exam. (transfer appl.), Dept. of Medicine, University of Ioannina
- 2020–2022 Director, Morphological & Clinical-Laboratory Sciences Division, Dept. of Medicine, University of Ioannina
- 2010–2023 Member of Faculty Assembly, Dept. of Medicine, University of Ioannina

Scientific Committees

- Committee Member, International Commission on Radiation Units and Measurements (ICRU) Report No. 90 "*Key Data for Ionizing Radiation Dosimetry: Measurement Standards and Applications*", Journal of the ICRU vol. 14, pp 1-110 (2014).
- Committee Member, International Commission on Radiation Units and Measurements (ICRU) Report No. 96 "*Dosimetry-Guided Radiopharmaceutical Therapy*", Journal of the ICRU vol. 22, pp 1-212 (2022).
- Scientific Committee MICROS 2017: 17th International Symposium on Microdosimetry, November 5-10, 2017, Venice, Italy.
- Scientific Advisory Committee 4th GEANT4 Monte Carlo Workshop for Radiotherapy, Imaging, and Radiation Protection December 2-8, 2019, Wollongong, Australia.

Supervision

- PhD students: 1 (+2 in prog) students Medical Physics Lab Univ. of Ioannina and 1 student Dept. of Applied Mathematics, Brown Univ., USA
- MSc students: 7 (+3 in prog) students Medical Physics Lab, Univ. of Ioannina, Greece
- BSc students: 28 (+7 in prog) students Physics Dept., Univ. of Ioannina, Greece
- External PhD Examiner: Univ. of South Australia (2 students), Univ. of Trento (1 student), Univ. of Adelaide (1 student), Univ. of Alicante (1 student), Ben-Gurion Univ. (1 student), Univ. of British Columbia (1 student)

Teaching Subjects

Undergraduate: Radiation interactions, Radiation Biology, Radiation Protection, Physical principles of Diagnostic Radiology, Radiation Therapy, and Nuclear Medicine

Postgraduate: Radiation dosimetry, Microdosimetry, Monte Carlo radiation transport

Research

- Physics models for the interaction of charged particles with biological media (water, DNA)
- Monte-Carlo radiation transport simulations with track-structure and condensed-history methods
- Microdosimetry of radiation quality (RBE, QF) in radiation protection and radiotherapy
- Cell-level dosimetry of targeted radionuclide therapy with β - and Auger-emitters
- Monte-Carlo modeling of radiation-induced DNA damage
- Dosimetric characteristics of therapeutic hadron-beams
- Development of the GEANT4-DNA code for Medical Physics applications

Grants (UoI >800k EUR)

- 2001-2002 University of Ioannina Research Committee (PI).
- 2002-2005 Industrial Sponsorship (PI).
- 2005-2007 Center for Drug Delivery Research, London, UK (co-PI), in collaboration with Univ. of London (UK).
- 2008-2009 University of Ioannina Research Committee (PI).
- 2008-2011 European Commission (FP7-HEALTH) (co-PI), in collaboration with Univ. of London (UK), Univ. of Trieste (Italy), CNRS (France), Nanocyl S.A. (Belgium), UCB Pharma S.A. (UK), Helmholtz Institute (Germany).
- 2011-2014 Ministry of Science and Innovation of Spain (ext-PI), in collaboration with Univ. of Alicante (Spain) and Univ. of Murcia (Spain).
- 2012-2015 European Commission (FP7-PEOPLE-ITN) (co-PI), in collaboration with Univ. of Oxford (UK), Kings College London (UK), Univ. of Trieste (Italy), CNRS (France), Materials Science Institute of Barcelona (ICMAB, Spain), Catalan Institute of Nanotechnology (Spain), HIPC (Czech Republic), IBA S.A. (France).
- 2015-2018 Ministry of Economy and Competitiveness of Spain (ext-PI), in collaboration with Univ. of Alicante (Spain) and Univ. of Murcia (Spain).
- 2016-2018 France-Greece Project International de Cooperation Scientific (PICS) (co-PI), in collaboration with Univ. of Bordeaux (France), Univ. of Toulouse, (France), and CNRS (France).
- 2017-2019 Australian Research Council (ext-PI), in collaboration with University of Wollongong (Australia), CNRS (France), Queen's University of Belfast (N. Ireland).

- 2018-2021 European Space Agent (ESA) (co-PI), in collaboration with University of Athens (Greece), National Technical University of Athens (Greece), Institute of Accelerating Systems and Applications (Greece).
- 2019-2021 France-Greece Project International de Cooperation Scientific (PICS) (co-PI), in collaboration with Univ. of Bordeaux (France), Univ. of Toulouse, (France), and CNRS (France).
- 2021-2023 European Space Agent (ESA) (co-PI), in collaboration with CEA, CNRS/IN2P3, CENBG, IRSN (France), G4AI Ltd. (UK), Sward SRL, INFN (Italy), Sevilla University (Spain).

Editorial Board Member

2020– International Journal of Molecular Sciences (MDPI)

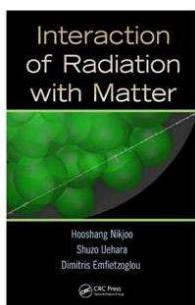
2019– Biomedical Physics & Engineering Express (IoP)

Special Issue Editor

- "Ionizing Radiation in Therapy and Biology of Cancer: Role of Monte Carlo simulations, Biophysical Modeling, and Radiobiological Techniques" *Cancers* (2021).
- "The Emerging Role of Molecular Radiation Sciences in Biomedical Applications" *International Journal of Molecular Sciences* (2023).

Publications

- 142 papers in peer-review journals (see full-list below)
- 4441 citations, h-index=39 (SCOPUS)
- 5954 citations, h-index=46 (GoogleScholar)
- Book: "Interaction of Radiation with Matter" by H. Nikjoo, S. Uehara and D. Emfietzoglou, CRC Press 2012, 364 pages (ISBN 9781439853573)



PAPERS IN PEER-REVIEW JOURNALS

142. Nicolanti F., Caccia B., Cartoni A., **Emfietzoglou D.**, Faccini R., Incerti S., Kyriakou I., Satta M., Tran H.N., and Mancini-Terracciano C. Calculation of electron interaction models in N₂ and O₂. *Physica Medica: European Journal of Medical Physics* 114:102661 12pp (2023).
141. Chatzipapas K., Dordevic M., Zivkovic S., Tran N.H., Lampe N., Sakata D., Petrovic I., Ristic Fira A., Shin W.-G., Zein S., Brown J.M.C., Kyriakou I., **Emfietzoglou D.**, Guatelli S., Incerti S. Geant4-DNA simulation of human cancer cells irradiation with helium ion beams. *Physica Medica: European Journal of Medical Physics* 112:102613 8pp (2023).
140. Papadopoulos A., Kyriakou I., Incerti S., Santin G., Nieminen P., Daglis I.A., Li W., **Emfietzoglou D.** Space radiation quality factor for Galactic Cosmic Rays and typical space mission scenarios using a microdosimetric approach. *Radiation and Environmental Biophysics* 62:221-234 (2023).
139. Chatzipapas K.P., Tran N.H., Dordevic M., Zivkovic S., Zein S., Shin W.-G., Sakata D., Lampe N., Brown J.M.C., Ristic-Fira A., Petrovic I., Kyriakou I., **Emfietzoglou D.**, Guatelli S., Incerti S. Simulation of DNA damage using Geant4-DNA: an overview of the "molecularDNA" example application. *Precision Radiation Oncology* 2023:1 11pp (2023).
138. Margis S., Kyriakou I., Incerti S., Bordage M.-C., **Emfietzoglou D.** Sub-keV corrections to binary encounter cross section models for electron ionization of liquid water with application to the Geant4-DNA Monte Carlo code. *Applied Radiation and Isotopes* 194:110693 11pp (2023).
137. Sakata D., Hirayama R., Shin W.-G., Belli M., Tabocchini M.A., Belov O., Bernal M.A., Bordage M.-C., Brown J.M.C., Chappuis F., Desorgher L., Dordevic M., **Emfietzoglou D.**, Francis Z., Guatelli S., Inaniwa T., Ivanchenko V., Karamitros M., Kyriakou I., Lampe N., Li Z., Meylan S., Michelet C., Murakami K., Nieminen P., Okada S., Perrot Y., Petrovic I., Ramos-Mendez J., Ristic-Fira A., Santin G., Sasaki T., Schuemann J., Tran H.N., Villagrasa C., Incerti S. Prediction of DNA rejoining kinetics and cell survival after proton irradiation for V79 cells using Geant4-DNA. *Physica Medica: European Journal of Medical Physics* 105:102508, 9pp (2023).
136. Papadopoulos A., Kyriakou I., Matsuya Y., Incerti S., Daglis I.A., **Emfietzoglou D.** Microdosimetry Study of Proton Quality Factor Using Analytic Model Calculations. *Applied Sciences* 12:8950, 19pp (2022).
135. Koval N.E., Koval P., Da Pieve F., Kohanoff J., Artacho E., **Emfietzoglou D.** Inelastic scattering of electrons in water from first principles: cross sections and inelastic mean free path for use in Monte Carlo track-structure simulations of biological damage. *Royal Society Open Science* 9:212011, 19pp (2022).
134. Lindborg L., Lillhök J., Kyriakou I., and **Emfietzoglou D.** Dose-mean lineal energy values for electrons by different Monte Carlo codes: Consequences for estimates of radiation quality in photon beams. *Medical Physics* 49:1286-1296 (2022)

133. Kyriakou I., **Emfietzoglou D.**, Incerti S. Status and extension of the Geant4-DNA dielectric models for application to electron transport. *Frontiers in Physics: Radiation Detectors and Imaging* 9:711317, 7pp (2022)
132. Kyriakou I., Sakata D., Tran H.N., Perrot Y., Shin W.-G., Lampe N., Zein S., Bordage M.C., Guatelli S., Villagrasa C., **Emfietzoglou D.**, Incerti S. Review of the Geant4-DNA simulation toolkit for radiobiological applications at the cellular and DNA level. *Cancers* 14:35, 26pp (2022)
131. Sakata D., Suzuki M., Hirayama R., Abe Y., Muramatsu M., Sato S., Belov O., Kyriakou I., **Emfietzoglou D.**, Guatelli S., Incerti S., Inaniwa T. Performance evaluation for repair of HSGc-C5 carcinoma cell using Geant4-DNA. *Cancers* 13:6046, 16pp (2021)
130. Shin W.G., Sakata D., Lampe N., Belov O., Tran N.H., Petrovic I., Ristic-Fira A., Dordevic M., Bernal M.A., Bordage M.C. Francis Z., Kyriakou I., Perrot Y., Sasaki T., Villagrasa C., Guatelli S., Breton V., **Emfietzoglou D.**, and Sebastien Incerti. A Geant4-DNA Evaluation of Radiation-Induced DNA Damage on a Human Fibroblast. *Cancers* 13:4940, 17pp (2021)
129. Kalospyros S.A., Gika V., Nikitaki Z., Kalamara A., Kyriakou I., **Emfietzoglou D.**, Kokkoris M., Georgakilas A.G. Monte Carlo Simulation-Based Calculations of Complex DNA Damage for Incidents of Environmental Ionizing Radiation Exposure. *Applied Sciences* 11:8985, 21pp (2021)
128. Kyriakou I., Tremi I., Georgakilas A.G., **Emfietzoglou D.** Microdosimetric investigation of the radiation quality of low-medium energy electrons using Geant4-DNA. *Applied Radiation and Isotopes* 72:109654, 15pp (2021)
127. Kalospyros S.A., Nikitaki Z., Kyriakou I., Kokkoris M., **Emfietzoglou D.** and Georgakilas A.G. A Mathematical Radiobiological Model (MRM) to Predict Complex DNA Damage and Cell Survival for Ionizing Particle Radiations of Varying Quality. *Molecules* 26:840, 30pp (2021)
126. Sakata D., Belov O., Bordage M.C. **Emfietzoglou D.**, Guatelli S., Inaniwa T., Ivanchenko V., Karamitros M., Kyriakou I., Lampe N., Petrovic I., Ristic-Fira A., Shin W.-G., Incerti S. Fully integrated Monte Carlo simulation for evaluating radiation induced DNA damage and subsequent repair using Geant4-DNA. *Scientific Reports* 10:20788, 13pp (2020)
125. Shingledecker C.N., Incerti S., Ivlev A., **Emfietzoglou D.**, Kyriakou I., Vasyunin A., Caselli P. Cosmic ray tracks in astrophysical ices: Modeling with the Geant4-DNA Monte Carlo Toolkit. *Astrophysical Journal* 904:189, 13pp (2020)
124. Engels E., Bakr S., Bolst D., Sakata D., Li N., Lazarakis P., McMahon S., Ivanchenko V., Rosenfeld A., Incerti S., Kyriakou I., **Emfietzoglou D.**, Lerch M., Tehei M., Corde S., Guatelli S. Advances in modelling gold nanoparticle radiosensitization using new Geant4-DNA physics models. *Physics in Medicine and Biology* 65:225017, 16pp (2020)
123. Chatzipapas K.P., Papadimitroulas P., **Emfietzoglou D.**, Kalospyros S.A., Hada M., Georgakilas A.G., Kagadis G.C. Ionizing Radiation and Complex DNA Damage: Quantifying the Radiobiological Damage Using Monte Carlo Simulations. *Cancers* 12:799, 23pp (2020)
122. Wang J. T.-W., Spinato C., Klippstein R., Costa P. M., Martincic M., Pach E., Ruiz de Garibay A. P., Ménard-Moyon C., Feldman R., Michel Y., Sefl M., Kyriakou I., **Emfietzoglou D.**,

- Saccavini J.-C., Ballesteros B., Tobias G., Bianco A., Al-Jamal K.T. Neutron-irradiated antibody-functionalised carbon nanocapsules for targeted cancer radiotherapy. *Carbon* 162:410-422 (2020)
121. Margis S., Magouni M., Kyriakou I., Georgakilas A.G., Incerti S. and **Emfietzoglou D.** Microdosimetric calculations of the direct DNA damage induced by low energy electrons using the Geant4-DNA Monte Carlo code. *Physics in Medicine and Biology* 65:045007, 17pp (2020).
120. Wang J. T.-W., Klippstein R., Martincic M., Pach E., Feldman R., Sefl M., Michel Y., Asker D., Sosabowski J.K., Kalbac M., Da Ros T., Ménard-Moyon C., Bianco A., Kyriakou I., **Emfietzoglou D.**, Saccavini J.-C., Ballesteros B., Al-Jamal K.T., Tobias G. Neutron Activated ¹⁵³Sm Sealed in Carbon Nanocapsules for *In Vivo* Imaging and Tumor Radiotherapy. *ACS Nano* 14:129-141 (2020).
119. Tang N., Bueno M., Meylan S., Perrot Y., Tran H.N., Freneau A., Dos Santos M., Vaurijoux A., Gruel G., Bernal M.A., Bordage M.-C., **Emfietzoglou D.**, Francis Z., Guatelli S., Ivanchenko V., Karamitros M., Kyriakou I., Shin W.-G., Incerti S., Villagrasa C. Assessment of radioinduced damage in endothelial cells irradiated with 40 kVp, 220 kVp and 4 MV X-rays by means of micro and nanodosimetric calculations. *International Journal of Molecular Sciences* 20:6204, 19pp (2019).
118. Shin W.-G., Ramos-Mendez J., Faddegon B., Tran H.N., Villagrasa C., Perrot Y., Okada S., Karamitros M., **Emfietzoglou D.**, Kyriakou I., Bordage M.C., Sakata D., Guatelli S., Choi H.J., Min C.H., Lee S.B., and Incerti S. Evaluation of the influence of physical and chemical parameters on water radiolysis simulations under MeV electron irradiation using Geant4-DNA. *Journal of Applied Physics* 126:114301, 13pp (2019)
117. Sakata D., Kyriakou I., Tran H.N., Bordage M.-C., Rosenfeld A.B., Ivanchenko V., Incerti S., **Emfietzoglou D.**, Guatelli S. Electron track structure simulations in a gold nanoparticle using Geant4-DNA. *Physica Medica: European Journal of Medical Physics* 63:98-104 (2019)
116. Sakata D., Lampe N., Karamitros M., Kyriakou I., Belov O., Barberet P., Bernal M.A., Bordage M.-C., Brown J.M.C., Francis Z., Ivanchenko V., Murakami K., Okada S., Petrovic I., Ristic-Fira A., Sasaki T., Seznec H., Shin W.-G., Tang N., Tran H.N., Torfeh E., Villagrasa C., **Emfietzoglou D.**, Nieminen P., Guatelli S., Incerti S. Evaluation of early radiation DNA damage in a fractal cell nucleus model using Geant4-DNA. *Physica Medica: European Journal of Medical Physics* 62:152-157 (2019)
115. Incerti S., Kyriakou I., Bordage M.C., Guatelli S., Ivanchenko V., **Emfietzoglou D.** Monte Carlo simulation of proximity functions in liquid water for electrons, protons and alpha particles using Geant4-DNA. *Journal of Applied Physics* 125:104301, 13pp (2019)
114. Kyriakou I., Ivanchenko V., Sakata D., Bordage M.C., Guatelli S., Incerti S., **Emfietzoglou D.** Influence of track structure and condensed history physics models of Geant4 to nanoscale electron transport in liquid water. *Physica Medica: European Journal of Medical Physics* 58:149-154 (2019)
113. Shin W.-G., Bordage M.-C., **Emfietzoglou D.**, Kyriakou I., Sakata D., Min C.H., Lee S.B., Guatelli S., Incerti S. Development of a new Geant4-DNA electron elastic scattering model

- for liquid-phase water using the ELSEPA code. *Journal of Applied Physics* 124:224901, 15pp (2018)
112. Sakata D., Kyriakou I., Okada S., Tran H., Lampe N., Guatelli S., Bordage M.C., Ivantchenko V.N, Murakami K., Sasaki T., **Emfietzoglou D.**, Incerti S. Geant4-DNA track-structure simulations for gold nanoparticles: the importance of electron discrete models in nanometer volumes. *Medical Physics* 45:2230-2242 (2018)
 111. Lazarakis P., Incerti S. , Ivanchenko V. , Kyriakou I., **Emfietzoglou D.**, Corde S., Rosenfeld A.B., Lerch M., Tehei M., Guatelli S. Investigation of Track Structure and Condensed History physics models for applications in radiation dosimetry on a micro and nano scale in Geant4. *Biomedical Physics & Engineering Express* 4:024001, 11pp (2018)
 110. **Emfietzoglou D.**, Papamichael G., Nikjoo H. Monte Carlo electron track structure calculations in liquid water using a new model dielectric response function. *Radiation Research* 188:355-368 (2017)
 109. Kyriakou I., **Emfietzoglou D.**, Ivantchenko V.N., Bordage M.C., Guatelli S., Lazarakis P., Tran H., Incerti S. Microdosimetry of electrons in liquid water using the low-energy models of Geant4. *Journal of Applied Physics* 122:024303, 17pp (2017)
 108. Garcia-Molina R., Abril I., Kyriakou I., **Emfietzoglou D.**, Inelastic scattering and energy-loss of swift electron beams in relevant biological materials. *Surface and Interface Analysis* 49:11-17 (2017)
 107. **Emfietzoglou D.**, Kyriakou I., Garcia-Molina R., Abril I., Inelastic mean free path of low-energy electrons in condensed media: Beyond the standard models. *Surface and Interface Analysis* 49:4-10 (2017)
 106. Sakata D., Incerti S., Bordage M.C., Lampe N., Okada S., **Emfietzoglou D.**, Kyriakou I., Murakami K., Sasaki T., Tran H., Guatelli S., Ivantchenko V.N. An implementation of discrete electron transport models for gold in the Geant4 simulation toolkit. *Journal of Applied Physics* 120:244901, 7pp (2016)
 105. Nikitaki Z., Nikolov V., Mavragani I.V., Mladenov E., Mangelis A., Laskaratou D.A., Fragkoulis G.I., Hellweg C.E., Lobachevsky P.N., Martin O.A., **Emfietzoglou D.**, Hatzi V.I., Terzoudi G.I., Iliakis G., and Georgakilas A.G., Measurement of complex DNA damage induction and repair in human cellular systems after exposure to ionizing radiations of varying LET. *Free Radical Research* 50:S64-S78 (2016).
 104. Nikitaki Z., Nikolov V., Mavragani I.V., Plante I., **Emfietzoglou D.**, Iliakis G., Georgakilas A.G. Non-DSB clustered DNA lesions. Does theory colocalize with the experiment? *Radiation Physics and Chemistry* 128:26-35 (2016)
 103. Nikjoo H., Taleei R., Liamsuwan T., Liljequist D., **Emfietzoglou D.**, Perspectives in radiation biophysics: From radiation track structure simulation to mechanistic models of DNA damage and repair. *Radiation Physics and Chemistry* 128:3-10 (2016)
 102. Nikjoo H., **Emfietzoglou D.**, Liamsuwan T., Taleei R., Liljequist D., Uehara S. Radiation track, DNA damage and response. *Reports on Progress in Physics* 79:116601, 55pp (2016)

101. Sefl M., Kyriakou I., **Emfietzoglou D.** Impact of cell repopulation and radionuclide uptake phase on cell survival. *Medical Physics* 43:2715-2720 (2016)
100. Sefl M., Incerti S., Papamichael G., **Emfietzoglou D.** Calculation of cellular S-values using Geant4-DNA: The effect of cell geometry. *Applied Radiation and Isotopes* 104:113-123 (2015)
99. Abril I., de Vera P., Garcia-Molina R., Kyriakou I., **Emfietzoglou D.** Lateral spread of dose distribution by therapeutic proton beams in liquid water. *Nuclear Instruments and Methods B: Beam Interactions with Materials and Atoms* 352:176-180 (2015)
98. Garcia-Molina R., Abril I., de Vera P., Kyriakou I., **Emfietzoglou D.** A study of the energy deposition profile of proton beams in materials of hadron therapeutic interest. *Applied Radiation and Isotopes* 83:109-114 (2014)
97. **Emfietzoglou D.**, Kyriakou I., Abril I., Garcia-Molina R. Erratum: "The effect of static many-body local-field corrections to inelastic electron scattering in condensed media" *Journal of Applied Physics* 115:139901, 2pp (2014)
96. **Emfietzoglou D.**, Kyriakou I., Abril I., Garcia-Molina R., Nikjoo H. Inelastic cross sections for low-energy electrons in liquid water: exchange and correlation effects. *Radiation Research* 180:499-513 (2013)
95. **Emfietzoglou D.**, Kyriakou I., Abril I., Garcia-Molina R. The effect of static many-body local-field corrections to inelastic electron scattering in condensed media. *Journal of Applied Physics* 114:144907, 10pp (2013)
94. Kyriakou I., **Emfietzoglou D.**, Nojeh A., Moscovitch M. Monte Carlo study of electron beam penetration and backscattering in multi-walled carbon nanotube materials: the effect of different scattering models. *Journal of Applied Physics* 113:084303, 11pp (2013)
93. Abril I., Garcia-Molina R., de Vera P., Kyriakou I., **Emfietzoglou D.** Inelastic collisions of energetic protons in biological media. *Advances in Quantum Chemistry* 65:129-164 (2013)
92. Bousis C., **Emfietzoglou D.**, Nikjoo H. Calculations of absorbed fractions in small water spheres for low-energy monoenergetic electrons and the Auger-emitting radionuclides ^{123}I and ^{125}I . *International Journal of Radiation Biology* 88:916-921 (2012)
91. Bousis C., **Emfietzoglou D.**, Nikjoo H. Monte Carlo single-cell dosimetry of I-131, I-125 and I-123 for targeted radioimmunotherapy of B-cell Lymphoma. *International Journal of Radiation Biology* 88:908-915 (2012)
90. Liamsuwan T., **Emfietzoglou D.**, Uehara S., Nikjoo H. Microdosimetry of low-energy electrons. *International Journal of Radiation Biology* 88:899-907 (2012)
89. Kalantzis G., **Emfietzoglou D.**, Hadjidoukas P. A unified spatio-temporal parallelization framework for accelerated Monte Carlo radiobiological modeling of electron tracks and subsequent radiation chemistry. *Computer Physics Communications* 183:1683-1695 (2012)

88. Horowitz Y., Sibony D., Oster L., Livingstone J., Guatelli S., Rosenfeld A., **Emfietzoglou D.**, Bilski P., Obryk B. Alpha particle and proton relative thermoluminescence efficiencies in LiF:Mg,Cu,P: Is track structure theory up to the task ? *Radiation Protection Dosimetry* 150:359-374 (2012)
87. **Emfietzoglou D.**, Kyriakou I., Garcia-Molina R., Abril I., Kostarelos K. Quasi first-principles Monte Carlo modeling of energy dissipation by low-energy electron beams in multi-walled carbon nanotube materials. *Applied Physics Letters* 100:093113, 5pp (2012)
86. Saikiran V., Pathak A.P., Srinivasa Rao N., Devaraju G., Debgupta J., Pillai V.K, Kyriakou I., **Emfietzoglou D.** SHI irradiation induced effects in functionalized MWCNTs. *Radiation Effects and Defects in Solids* 167:569-576 (2012)
85. **Emfietzoglou D.**, Kyriakou I., Abril I., Garcia-Molina R., Nikjoo H. Inelastic scattering of low energy electrons in liquid water computed from optical data models of the Bethe surface. *International Journal of Radiation Biology* 88:22-28 (2012)
84. Garcia-Molina R., Abril I., Heredia-Avalos S., Kyriakou I., **Emfietzoglou D.** A combined Molecular Dynamics and Monte Carlo simulation of the spatial distribution of energy deposition by proton beams in liquid water. *Physics in Medicine and Biology* 56:6475-6493 (2011)
83. Kyriakou I., **Emfietzoglou D.**, Garcia-Molina R., Abril I., Kostarelos K. Simple model of bulk and surface excitation effects to inelastic scattering in low-energy electron beam irradiation of multi-walled carbon nanotubes. *Journal of Applied Physics* 110:054304, 12pp (2011)
82. Bousis C., **Emfietzoglou D.**, Hadjidoukas P., Nikjoo H., Pathak A. Monte Carlo calculations of low-energy electron dose-point-kernels in water using different stopping power approximations. *Nuclear Instruments and Methods B: Beam Interactions with Materials and Atoms* 269:1650-1654 (2011)
81. Abril I., Garcia-Molina R., Denton C.D., Kyriakou I., **Emfietzoglou D.** Energy loss of H and He beams in DNA: calculations based on a realistic energy loss function of the target. *Radiation Research* 175:247-255 (2011)
80. Liamsuwan T., Uehara S., **Emfietzoglou D.**, Nikjoo H. Physical and biophysical properties of proton tracks of energies 1 keV to 300 MeV in water. *International Journal of Radiation Biology* 87:141-160 (2011)
79. Liamsuwan T., Uehara S., **Emfietzoglou D.**, Nikjoo H. A model for carbon ion interactions in water using the classical trajectory Monte Carlo method. *Radiation Protection Dosimetry* 143:152-155 (2011)
78. Nikjoo H., Uehara S., **Emfietzoglou D.**, Pinsky L. A database of frequency distributions of energy depositions in small-size targets by electrons and ions. *Radiation Protection Dosimetry* 143:145-151 (2011)
77. **Emfietzoglou D.**, Kyriakou I., Garcia-Molina R., Abril I., Kostarelos K. Analytic expressions for the inelastic scattering and energy loss of electron and proton beams in carbon nanotubes. *Journal of Applied Physics* 108:054312, 5pp (2010)

76. Bousis C., **Emfietzoglou D.**, Hadjidoukas P., Nikjoo H. Monte Carlo single-cell dosimetry of Auger-electron emitting radionuclides. *Physics in Medicine and Biology* 55:2555-2572 (2010)
75. Kyriakou I., Celedón C., Segura R., **Emfietzoglou D.**, Vargas P., Valdés J.E., Abril I., Denton C.D., Kostarelos K., Garcia-Molina R. Energy loss of protons in carbon nanotubes: experiments and calculations. *Nuclear Instruments and Methods B: Beam Interactions with Materials and Atoms* 268:1781-1785 (2010)
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