



## MDI Research and Publications

Academic Year 2022/2023

### Professor Bashar Issa

Al-Akhras, M.-A., Odat, B., Narayanaswamy, V., Mousa, M.S., Issa, B., Obeidat, M., Al-Omari, I.A., Obaidat, I.M. Molecular Simulations of 6-Gingerol Loading on Graphene and Graphene Oxide for Drug Delivery Applications (2023) *Biointerface Research in Applied Chemistry*, 13 (3), art. no. 258.

Khurshid, H., Yoosuf, R., Zafar, H., Attanayake, S.B., Azeem, M., Issa, B.A., Anjum, D.H., Srikanth, H. From multi-segmented to core/shell nanorods: morphology evolution in Fe-Au nanorods by tuning fabrication conditions (2023) *Nanotechnology*, 34 (18), art. no. 185602.

Narayanaswamy, V., Al-Omari, I.A., Kamzin, A.S., Khurshid, H., Khaleel, A., Issa, B., Obaidat, I.M. Coercivity and Exchange Bias in Ti-Doped Maghemite Nanoparticles (2022) *Magnetochemistry*, 8 (12), art. no. 165.

Narayanaswamy, V., Jagal, J., Khurshid, H., Al-Omari, I.A., Haider, M., Kamzin, A.S., Obaidat, I.M., Issa, B. Hyperthermia of Magnetically Soft-Soft Core-Shell Ferrite Nanoparticles (2022) *International Journal of Molecular Sciences*, 23 (23), art. no. 14825.

Al-Omari, I.A., Narayanaswamy, V., Halder, S., Hamdeh, H.H., Alaabed, S., Kamzin, A.L., Muralee Gopi, C.V.V., Khaleel, A., Issa, B., Obaidat, I.M. Mossbauer investigations in hematite nanoparticles (2022) *Biointerface Research in Applied Chemistry*, 12 (4), pp. 4626-4636.

Elshami, W., Erdemir, R.U., Abuzaid, M.M., Cavli, B., Issa, B., Tekin, H.O. Occupational radiation dose assessment for nuclear medicine workers in Turkey: A comprehensive investigation (2022) *Journal of King Saud University - Science*, 34 (4), art. no. 102005.

Narayanaswamy, V., Al-Omari, I.A., Kamzin, A.S., Muralee Gopi, C.V.V., Khaleel, A., Alaabed, S., Issa, B., Obaidat, I.M. Exchange bias, and coercivity investigations in hematite nanoparticles (2022) *AIMS Materials Science*, 9 (1), pp. 71-84.

Elshami, W., Tekin, H.O., Abuzaid, M.M., Issa, B. Impact of radiation field size on absorbed organ doses in neonates undergoing chest radiography in an anterior-posterior projection: A monte carlo simulation study (2022) *Radiation Protection Dosimetry*, 198 (1-2), pp. 44-52.

Narayanaswamy, V., Al-Omari, I.A., Kamzin, A.S., Issa, B., Obaidat, I.M. Tailoring Interfacial Exchange Anisotropy in Hard-Soft Core-Shell Ferrite Nanoparticles for Magnetic Hyperthermia Applications (2022) *Nanomaterials*, 12 (2), art. no. 262.

Abuzaid, M.M., Elshami, W., Tekin, H., Issa, B. Response to letter to Editor: Medical Image Analyst: A Radiology Career Focused on Comprehensive Quantitative Imaging Analytics to Improve Healthcare (2022) *Academic Radiology*, 29 (1), p. 171.

Abuzaid, M.M., Elshami, W., Tekin, H., Issa, B. Assessment of the Willingness of Radiologists and Radiographers to Accept the Integration of Artificial Intelligence Into Radiology Practice (2022) *Academic Radiology*, 29 (1), pp. 87-94.

### Professor Huseyin Ozan Tekin

Abuzaid, M., Elshami, W., Cavli, B., Ozturk, C., AlMisned, G., Tekin, H.O. A closer look at the utilized radiation doses during computed tomography pulmonary angiography (CTPA) for COVID-19 patients (2023) *Radiation Physics and Chemistry*, 211, art. no. 111025.



Kurtulus, R., Kavas, T., Kavaz, E., AlMisned, G., Tekin, H.O. Synthesis, optical, structural, physical, and experimental gamma-ray transmission properties of high-density lead-boro-tellurite glasses: A multi-phases investigation towards providing a behavioral symmetry through Lead(II) oxide (2023) *Ceramics International*, 49 (14), pp. 23189-23196.

Abou Neel, E.A., Soumya, S., Oyhanart, S.R., Knowles, J.C., Issa, S.A.M., Almisned, G., Tekin, H.O. Utilizing Fe<sub>2</sub>O<sub>3</sub> in phosphate-based glasses to enhance biocompatibility and gamma-ray absorption characteristics: A step towards understanding of Na<sub>2</sub>O/Fe<sub>2</sub>O<sub>3</sub> translocation in P<sub>2</sub>O<sub>5</sub>-CaO-Na<sub>2</sub>O glass system (2023) *Ceramics International*, 49 (11), pp. 16615-16624.

Çetinkaya, Ç., Çokduygular, E., Kınaç, B., Ilik, E., Kilic, G., AlMisned, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. Tailoring optimal translocation conditions towards proximity of borotellurite glasses to the red spectrum through CeO<sub>2</sub> for practical applications (2023) *Heliyon*, 9 (4), art. no. e14881.

Ilik, B.O., Kilic, G., Ilik, E., Kavaz, E., AlMisned, G., Tekin, H.O. Elucidating the influences of Tantalum (V) oxide in Bi<sub>2</sub>O<sub>3</sub>-TeO<sub>2</sub>-ZnO ternary glasses: An experimental characterization study on optical and nuclear radiation transmission properties of high-density glasses (2023) *Ceramics International*, 49 (7), pp. 10906-10913.

AlMisned, G., Rabaa, E., Rammah, Y.S., Khattari, Z.Y., Baykal, D.S., Ilik, E., Kilic, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. A Promising Glass Type in Electronic and Laser Applications: Elastic Moduli, Mechanical, and Photon Transmission Properties of WO<sub>3</sub> Reinforced Ternary-Tellurite Glasses (2023) *Symmetry*, 15 (3), art. no. 602.

Karaçam, S.Ç., Tunçman, D., AlMisned, G., Ene, A., Tekin, H.O. Investigation of Radiochromic Film Use for Source Position Verification through a LINAC On-Board Imager (OBI) (2023) *Medicina (Lithuania)*, 59 (3), art. no. 628.

AlMisned, G., Baykal, D.S., Kilic, G., Ilik, E., Rabaa, E., Susoy, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. Comparative analysis on application conditions of indium (III) oxide-reinforced glasses in nuclear waste management and source transportation: A Monte Carlo simulation study (2023) *Heliyon*, 9 (3), art. no. e14274.

AlMisned, G., Sen Baykal, D., Ilik, E., Abuzaid, M., Kilic, G., Tekin, H.O. Functional assessment of various rare-earth (RE) ion types: An investigation on gamma-ray attenuation properties of GeO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub>-ZnO-Tb<sub>2</sub>O<sub>3</sub>-RE magneto-optical glasses (2023) *Optik*, 274, art. no. 170526.

Almisned, G., Akkurt, I., Tekin, H.O., Yuksek, I., Ekmekçi, I. Variation in gamma ray shielding properties of glasses with increasing boron oxide content (2023) *Radiochimica Acta*, 111 (3), pp. 217-223.

AlMisned, G., Elshami, W., Kilic, G., Ilik, E., Rabaa, E., Zakaly, H.M.H., Ene, A., Tekin, H.O. Exploring the Radioprotective Indium (III) Oxide Screens for Mammography Scans Using a Three-Layer Heterogeneous Breast Phantom and MCNPX: A Comparative Study Using Clinical Findings (2023) *Medicina (Lithuania)*, 59 (2), art. no. 327.

AlMisned, G., Bilal, G., Sen Baykal, D., Ali, F.T., Kilic, G., Tekin, H.O. Bismuth(III) oxide and boron(III) oxide substitution in bismuth-boro-zinc glasses: A focusing in nuclear radiation shielding properties (2023) *Optik*, 272, art. no. 170214.

Zakaly, H.M.H., AlMisned, G., Issa, S.A.M., Ivanov, V., Tekin, H.O. Towards a better understanding of filler size on radiation shielding enhancement: impact of microand nano-WO<sub>3</sub>/PbO particle reinforcement on ILC concrete (2023) *Journal of the Australian Ceramic Society*, 59 (1), pp. 127-135.

AlMisned, G., Sen Baykal, D., Ali, F.T., Bilal, G., Kilic, G., Tekin, H.O. Gadolinium-tungsten-boron trioxide glasses: A multi-phase research on cross-sections, attenuation coefficients, build-up factors and individual transmission factors using MCNPX (2023) *Optik*, 272, art. no. 170216.

Almisned, G., Khattari, Z.Y., Rabaa, E., Rammah, Y.S., Sen Baykal, D., Kilic, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. Tailoring a symmetry for material properties of tellurite glasses through tungsten(vi) oxide addition: Mechanical properties and gamma-ray transmissions properties (2023) *Applied Rheology*, 33 (1), art. no. 20220151.

Şimşek, T., Kavaz, E., Güler, Ö., Şimşek, T., Avar, B., Aslan, N., Almisned, G., Zakaly, H.M.H., Tekin, H.O. FeCoNiMnCr high-entropy alloys (HEAs): Synthesis, structural, magnetic and nuclear radiation absorption properties (2023) *Ceramics International*.



Deliormanli, A.M., Ensoylu, M., AlMisned, G., Tekin, H.O. Two-dimensional molybdenum disulfide/polymer-coated bioactive glass scaffolds for tissue engineering: Fabrication, structural, mechanical, bioactivity, and radiation interaction properties (2023) *Ceramics International*.

AlMisned, G., Elshami, W., Rabaa, E., Kilic, G., Ilik, E., Sen Baykal, D., Ene, A., Tekin, H.O. Toward the strengthening of radioprotection during mammography examinations through transparent glass screens: A benchmarking between experimental and Monte Carlo simulation studies (2023) *Frontiers in Public Health*, 11, art. no. 1171209.

Deliormanli, A.M., AlMisned, G., Ene, A., Tekin, H.O. Graphene-bioactive glass composites: Structural, Vickers hardness, and gamma-ray attenuation characteristics (2023) *Frontiers in Materials*, 10, art. no. 1179502.

Say, Y., Güler, Ö., Kavaz, E., AlMisned, G., Ene, A., Tekin, H.O. Structural, physical, and radiation absorption properties of a significant nuclear power plant component: A comparison between REX-734 and 316L SS austenitic stainless steels (2023) *Open Chemistry*, 21 (1), art. no. 20220307.

Zakaly, H.M.H., Tekin, H.O., Issa, A.M.S., Alrowaily, A.W., Ene, A., Rammah, Y.S. Dual Impacts of Bi<sub>2</sub>O<sub>3</sub>/B<sub>2</sub>O<sub>3</sub> Substitution on Mechanical and Attenuation Properties of Zinc–Bismuth–Borate Ternary Glasses for Diagnosis  $\gamma$ -Rays Shielding Materials Application (2023) *Journal of Inorganic and Organometallic Polymers and Materials*.

Almisned, G., Rabaa, E., Sen Baykal, D., Ilik, E., Kilic, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. The impact of chemical modifications on gamma-ray attenuation properties of some WO<sub>3</sub>-reinforced tellurite glasses (2023) *Open Chemistry*, 21 (1), art. no. 20220297.

Kamal, M., Shen, J., Othman, A.A.A., Sultan Araffa, S.A., Tekin, H.O., Ene, A., Abdel-Latief, A.-S.A., Zakaly, H.M.H. Integrated geophysical techniques applied for petroleum basins structural characterization in the central part of the Western Desert, Egypt (2023) *Open Chemistry*, 21 (1), art. no. 20220293.

AlMisned, G., Elshami, W., Kilic, G., Rabaa, E., Zakaly, H.M.H., Ene, A., Tekin, H.O. Utilization of three-layers heterogeneous mammographic phantom through MCNPX code for breast and chest radiation dose levels at different diagnostic X-ray energies: A Monte Carlo simulation study (2023) *Frontiers in Public Health*, 11, art. no. 1136864.

Almisned, G., Rabaa, E., Sen Baykal, D., Ilik, E., Kilic, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. Translocation of tungsten(vi) oxide/gadolinium(iii) fluoride in tellurite glasses towards improvement of gamma-ray attenuation features in high-density glass shields (2023) *Open Chemistry*, 21 (1), art. no. A28.

Almisned, G., Rabaa, E., Sen Baykal, D., Kavaz, E., Ilik, E., Kilic, G., Zakaly, H.M.H., Ene, A., Tekin, H.O. Mechanical properties, elastic moduli, and gamma ray attenuation competencies of some TeO<sub>2</sub>-WO<sub>3</sub>-GdF<sub>3</sub>glasses: Tailoring WO<sub>3</sub>-GdF<sub>3</sub>substitution toward optimum behavioral state range (2023) *Open Chemistry*, 21 (1), art. no. A29.

Çokduygular, E., Çetinkaya, Ç., Kınacı, B., Kilic, G., Tekin, H.O. Enhancement of significant colour properties through Ta<sub>2</sub>O<sub>5</sub> incorporation into ZnO–TeO<sub>2</sub> binary glasses: An effective method for purposeful utilizations in industry and technology (2023) *Optical Materials*, 135, art. no. 113301.

Arunkumar, S., Evangelin Teresa, P., Marimuthu, K., Bassam, S.A., James Silvia, D., Issa, S.A.M., Almisned, G., Tekin, H.O., Alqahtani, M.S., Yousef, E.S. Scrutinizing the physical, structural, elastic, optical and gamma ray shielding properties of Samarium ions infused Niobium Bariumtelluroborate glasses (2023) *Radiation Physics and Chemistry*, 202, art. no. 110510.

Mattos, G.R.S., Bordon, C.D.S., Kassab, L.R.P., Issa, S.A.M., AlMisned, G., Tekin, H.O. Towards obtaining the optimum physical, optical and nuclear radiation attenuation behaviours of tellurite–germanate glasses through Eu<sub>2</sub>O<sub>3</sub> reinforcement: Glass synthesis, experimental and theoretical characterisation study (2023) *Ceramics International*, 49 (1), pp. 986-994.

## **Dr. Dilber Uzun Ozsahin**

Ozsahin, I., Onakpojeruo, E.P., Uzun, B., Uzun Ozsahin, D., Butler, T.A. A Multi-Criteria Decision Aid Tool for Radiopharmaceutical Selection in Tau PET Imaging (2023) *Pharmaceutics*, 15 (4), art. no. 1304.



Uzun Ozsahin, D., Precious Onakpojeruo, E., Bartholomew Duwa, B., Usman, A.G., Isah Abba, S., Uzun, B. COVID-19 Prediction Using Black-Box Based Pearson Correlation Approach (2023) *Diagnostics*, 13 (7), art. no. 1264.

Dawd, J.E., Uzun Ozsahin, D., Ozsahin, I. DEVELOPING DIAGNOSTIC REFERENCE LEVELS FOR CT EXAMINATIONS IN ADDIS ABABA, ETHIOPIA (2023) *Radiation protection dosimetry*, 199 (3), pp. 245-245.

Rao, S., Sharan, K., Sukumar, S., Chandraguthi, S.G., Nisha Dsouza, R., David, L.R., Ravichandran, S., Uzun, B., Kadavigere, R., Uzun Ozsahin, D. Systematic Review on Diagnostic Reference Levels for Computed Tomography Examinations in Radiation Therapy Planning (2023) *Diagnostics*, 13 (6), art. no. 1072.

Uzun Ozsahin, D., Onakpojeruo, E.P., Uzun, B., Mustapha, M.T., Ozsahin, I. Mathematical Assessment of Machine Learning Models Used for Brain Tumor Diagnosis (2023) *Diagnostics*, 13 (4), art. no. 618.

Abba, S.I., Benaafi, M., Usman, A.G., Ozsahin, D.U., Tawabini, B., Aljundi, I.H. Mapping of groundwater salinization and modelling using meta-heuristic algorithms for the coastal aquifer of eastern Saudi Arabia (2023) *Science of the Total Environment*, 858, art. no. 159697.

Duwa, B.B., Kibarer, A.G., Uzun, B., Kaba, Ş., Ozsahin, D.U. Evaluation of Techniques Used in Phenol Removal from Wastewater Using Fuzzy PROMETHEE Method (2023) *Lecture Notes in Networks and Systems*, 610 LNNS, pp. 289-296.

Uzun Ozsahin, D., Mustapha, M.T., Uzun, B., Duwa, B., Ozsahin, I. Computer-Aided Detection and Classification of Monkeypox and Chickenpox Lesion in Human Subjects Using Deep Learning Framework (2023) *Diagnostics*, 13 (2), art. no. 292.

Uzun Ozsahin, D., Ikechukwu Emegano, D., Uzun, B., Ozsahin, I. The Systematic Review of Artificial Intelligence Applications in Breast Cancer Diagnosis (2023) *Diagnostics*, 13 (1), art. no. 45.

Seyer Cagatan, A., Taiwo Mustapha, M., Bagkur, C., Sanlidag, T., Ozsahin, D.U. An Alternative Diagnostic Method for C. neoformans: Preliminary Results of Deep-Learning Based Detection Model (2023) *Diagnostics*, 13 (1), art. no. 81.

## **Dr. Mohamed M Abdelfatah**

Abuzaid, M., Elshami, W., Cavli, B., Ozturk, C., AlMisned, G., Tekin, H.O. A closer look at the utilized radiation doses during computed tomography pulmonary angiography (CTPA) for COVID-19 patients (2023) *Radiation Physics and Chemistry*, 211, art. no. 111025.

Khandaker, M.U., Abuzaid, M.M., Mohamed, I.A., Yousef, M., Jastaniah, S., Alshammari, Q.T., Alghamdi, S.S., Osman, H., Mohamed Ahmed, A., Musa, A., Ahmed Medani, A.M., Lam, S.E., Bradley, D.A. Investigation of the Radiographer's adherence and compliance with radiation protection and infection control practices during COVID-19 mobile radiography (2023) *Radiation Physics and Chemistry*, 210, art. no. 111023.

Abuzaid, M. Letter to Editor: Infection control knowledge and practices among radiographers at government hospitals in the Gaza Strip-Palestine: A cross-sectional study (2023) *Radiography*, 29 (3), p. 640.

Abuzaid, M.M., Elshami, W. Academic Radiology Departments Should Lead Artificial Intelligence Initiatives (2023) *Academic Radiology*, 30 (5), p. 1014.

Suliman, I.I., Khouqeer, G.A., Ahmed, N.A., Abuzaid, M.M., Sulieman, A. Low-Dose Chest CT Protocols for Imaging COVID-19 Pneumonia: Technique Parameters and Radiation Dose (2023) *Life*, 13 (4), art. no. 992.

AlMisned, G., Sen Baykal, D., Ilik, E., Abuzaid, M., Kilic, G., Tekin, H.O. Functional assessment of various rare-earth (RE) ion types: An investigation on gamma-ray attenuation properties of GeO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub>-ZnO-Tb<sub>2</sub>O<sub>3</sub>-RE magneto-optical glasses (2023) *Optik*, 274, art. no. 170526.



Omer, H., Salah, H., Tamam, N., Mahgoub, O., Sulieman, A., Ahmed, R., Abuzaid, M., Saad, I.E., Almogren, K.S., Bradley, D.A. Assessment of occupational exposure from PET and PET/CT scanning in Saudi Arabia (2023) *Radiation Physics and Chemistry*, 204, art. no. 110642.

David, L.R., Murphy, F., Guraya, S.S., Abuzaid, M.M. Community and Policy Factors Influencing the Decision to Undergo Screening Mammography amongst Indian Women in the United Arab Emirates (2023) *Asian Pacific Journal of Cancer Prevention*, 24 (1), pp. 307-312.

Abuzaid, M.M., Elshami, W. Letter to editor: Assessment of job satisfaction, lifestyle behaviours, and occupational burnout symptoms during the COVID-19 pandemic among radiologic technologists in Saudi Arabia (2023) *Radiography*, 29 (1), p. 257.

### **Dr. Wiam Elshami**

Abuzaid, M., Elshami, W., Cavli, B., Ozturk, C., ALMisned, G., Tekin, H.O. A closer look at the utilized radiation doses during computed tomography pulmonary angiography (CTPA) for COVID-19 patients (2023) *Radiation Physics and Chemistry*, 211, art. no. 111025.

Abuzaid, M.M., Elshami, W. Academic Radiology Departments Should Lead Artificial Intelligence Initiatives (2023) *Academic Radiology*, 30 (5), p. 1014.

Ukoha, P.O., Idigo, F.U., Chukwudi Okeji, M., Joseph, D., Flavious, N., Onwuzu, S., Joseph Skam, D., Elshami, W. Clinical indication diagnostic reference level (DRLCI) and post-optimization image quality for Adult Computed Tomography Examinations in Enugu, southeastern Nigeria (2023) *Radiation Physics and Chemistry*, 206, art. no. 110728.

ALMisned, G., Elshami, W., Kilic, G., Ilik, E., Rabaa, E., Zakaly, H.M.H., Ene, A., Tekin, H.O. Exploring the Radioprotective Indium (III) Oxide Screens for Mammography Scans Using a Three-Layer Heterogeneous Breast Phantom and MCNPX: A Comparative Study Using Clinical Findings (2023) *Medicina (Lithuania)*, 59 (2), art. no. 327.

Salah, H., Tamam, N., Rabbaa, M., Abuljoud, M., Zailae, A., Alkhorayef, Abuhadi, N., Elshami, W., Sulieman, A., Bradley, D.A. Assessment of patients radiation doses associated with computed tomography coronary angiography (2023) *Applied Radiation and Isotopes*, 192, art. no. 110548.

Alsaif, N.A.M., Baykal, D.S., Elshami, W., Zakaly, H.M.H., Issa, S.A.M., Ene, A., Rammah, Y.S. On tungsten barium phosphate glasses: Elastic moduli, gamma-ray shielding properties as well as transmission factor (TF) (2023) *Journal of the Australian Ceramic Society*.

ALMisned, G., Elshami, W., Rabaa, E., Kilic, G., Ilik, E., Sen Baykal, D., Ene, A., Tekin, H.O. Toward the strengthening of radioprotection during mammography examinations through transparent glass screens: A benchmarking between experimental and Monte Carlo simulation studies (2023) *Frontiers in Public Health*, 11, art. no. 1171209.

ALMisned, G., Elshami, W., Kilic, G., Rabaa, E., Zakaly, H.M.H., Ene, A., Tekin, H.O. Utilization of three-layers heterogeneous mammographic phantom through MCNPX code for breast and chest radiation dose levels at different diagnostic X-ray energies: A Monte Carlo simulation study (2023) *Frontiers in Public Health*, 11, art. no. 1136864.

Abuzaid, M.M., Elshami, W. Letter to editor: Assessment of job satisfaction, lifestyle behaviours, and occupational burnout symptoms during the COVID-19 pandemic among radiologic technologists in Saudi Arabia (2023) *Radiography*, 29 (1), p. 257.

### **Dr. Leena R David**

David, L.R., Murphy, F., Guraya, S.S., Abuzaid, M.M. Community and Policy Factors Influencing the Decision to Undergo Screening Mammography amongst Indian Women in the United Arab Emirates (2023) *Asian Pacific Journal of Cancer Prevention*, 24 (1), pp. 307-312.