

Curriculum Vitae

INFORMATIONS PERSONNELLES

NOM	CHAKIR
PRENOM	El-Mahjoub
FONCTION	Professeur à la Faculté des Sciences de Kénitra Université Ibn Tofaïl
GRADE	Professeur de l'Enseignement Supérieur
DATE ET LIEU DE NAISSANCE	19/06/1965 à Rabat
ETAT CIVIL	Marié (4 enfants)
N° de Téléphone	0675067916
ADRESSE	Lot sala aljadida n°1184 Hssain 11100 Sala Aljadida Morocco
E-mail	elmahjoub.chakir@iut.ac.ma mahchakir@yahoo.fr

- **Chef de Département de Physique de la Faculté des Sciences de l'Université Ibn Tofaïl.**
- **Directeur du Laboratoire de Physique des Matériaux et Subatomique (LPMS) au sein de la Faculté des Sciences de l'Université Ibn Tofaïl .**
- **Responsable du Master Sciences et Techniques Nucléaires au sein de la Faculté des Sciences de Kénitra de l'Université Ibn Tofaïl.**
- **Membre fondateur Trésorier du Groupement Marocain de Technologie des Réacteurs « GMTR »**
- **Membre du bureau de l'Association des Ingénieurs en Génie Atomiques Marocains « AIGAM »**

THEMES DE RECHERCHE :

- Physique Nucléaire et Applications
- Physique des réacteurs

- Radioprotection et Calcul de protection
- Génération des données nucléaires
- Métrologie des rayonnements nucléaires
- Simulation Monte Carlo des transports des rayonnements
- Sûreté Nucléaire
- Sécurité Nucléaire
- Didactique d'enseignement Physique-Chimie

PRODUCTIONS SCIENTIFIQUES :

QUELQUES PUBLICATIONS:

- [1] I. Zidouh, A. Arectout, M. Bellahsaouia, D. Elaarabi, H. Chamlal, B. Maroufi, Y. Sadeq, M. Tazi, J. Rodenas, H. Boukhal, **E. M. Chakir**, Comparison of OSL and TL dosimetry systems against IEC and ICRP standards, *Applied Radiation and Isotopes*, 196 (2023).
- [2] J. Zerouaoui, A. Alaoui, B. Ettaki, **E. M. Chakir**, Assessing the Improvements Brought by Artificial Intelligence on the Prediction of Aerodynamic Coefficients, *Lecture Notes in Networks and Systems*, 2023, pp. 254-263.
- [3] A. Tayebi, M. El-Maghraoui, M. Tayebi, **E. M. Chakir**, Radon Concentration in Urban Areas in the North and West of Morocco, *Atom Indonesia*, 49 (2023) 131-135.
- [4] I. Tarhi, T. Hassouni, E.M. Al Ibrahmi, D. Lamri, **E. M. Chakir**, MATHEMATICAL MODELING IN PHYSICS AND CONCEPTIONS OF LEARNERS: FORCE AND DIFFERENTIAL EQUATION, *International Journal on Technical and Physical Problems of Engineering*, 15 (2023) 1-8.
- [5] O. Nhila, M. Talbi, M. El Mansouri, M. A. Youssoufi, M. Erraoudi, **E. M. Chakir**, M. Azougagh, The effect of CT reconstruction filter selection on Hounsfield units in radiotherapy treatment planning, *Journal of Radiotherapy in Practice*, 22 (2023).
- [6] K. Laazouzi, H. Boukhal, **E. M. Chakir**, A. Arectout, M. Hadouachi, O.E. Belhaj, Specific absorbed fractions of electrons and photons for Digimouse voxelized phantom using GATE/GEANT4 Monte-Carlo simulation, *Applied Radiation and Isotopes*, 193 (2023).

- [7] D. Hamcha, I. Tarhi, A. Ben Doumou, T. Hassouni, **E. M. Chakir**, E.M. Al Ibrahmi, CONTRIBUTION TO CONTINUING TRAINING ON INTEGRATING AND USING COMPUTER-ASSISTED INSTRUCTION, International Journal on Technical and Physical Problems of Engineering, 15 (2023) 182-187.
- [8] D. Hamcha, A. Bouchaib, T. Hassouni, S. Dachraoui, **E. M. Chakir**, E.M. Al Ibrahmi, STUDY AND EVALUATION OF AN INNOVATIVE PEDAGOGICAL TOOL EDUCATIONAL SYSTEM: COMPUTER ASSISTED INSTRUCTION, International Journal on Technical and Physical Problems of Engineering, 15 (2023) 176-181.
- [9] M. Hadouachi, H. Boukhal, **E. M. Chakir**, A. Ahmed, O.E. Belhaj, K. Laazouzi, H. El Yaakoubi, T. El Ghalbzouri, I. Berriban, S. El Ouahdani, Sensitivity and uncertainty analysis of effective multiplication factor of KRITZ-1 benchmark using ENDF/B-VIII.0 and JEFF3-3 nuclear data libraries, Progress in Nuclear Energy, 165 (2023).
- [10] M. El-Asery, Z. Sadoune, H. El Bekkouri, A. Didi, **E. M. Chakir**, Evaluation of Secondary Neutron Produced in Proton Therapy Using Phits, Moscow University Physics Bulletin, 78 (2023) 155-160.
- [11] M. El Katib, **E. M. Chakir**, R. Sebihi, H. Saikouk, O. Nhila, Validation of a Monte Carlo model of the uEXPLORER total-body PET scanner using GATE code, Radiation Physics and Chemistry, 210 (2023).
- [12] O.E. Belhaj, H. Boukhal, **E. M. Chakir**, M. Bellahsaouia, S. Belhaj, Y. Sadeq, M. Tazi, T. El Khoukhi, M. Hadouachi, K. Laazouzi, Dose metrology: TLD/OSL dose accuracy and energy response performance, Nuclear Engineering and Technology, 55 (2023) 717-724.
- [13] O.E. Belhaj, S. Belhaj, M. Bellahsaouia, Y. Sadeq, M. Hadouachi, K. Laazouzi, A. Arectout, H. Boukhal, C. El mahjoub, T.E. Khoukhi, GUI development for SSDL to calibrate photon measuring equipment, MethodsX, 11 (2023).
- [14] A. Arectout, H. Boukhal, E. Chham, **E. M. Chakir**, F. Piñero-García, M. Azahra, H. El Yaakoubi, K. Laazouzi, T. El Ghalbzouri, M. Assalmi, Assessment of dead layers thickness of an HPGe detector after an extended operating period using response surface methodology and Box–Behnken design, Radiation Detection Technology and Methods, 7 (2023) 599-610.

- [15] A. Ahmed, H. Boukhal, **E. M. Chakir**, S.E.L. Ouahdani, Cross sections data adjustment for KRITZ-2:13, Kuwait Journal of Science, 50 (2023).
- [16] I. Aarab, H. Bounouira, **E. M. Chakir**, H. Amsil, A. Didi, Utilization of k 0-standardisation method of neutron activation analysis for determining the major and trace elements of medicinal plants from the Senhaja Srair region of Morocco, Journal of Radioanalytical and Nuclear Chemistry, 332 (2023) 3431-3443.
- [17] M. Talbi, Z. Tahiri, K. Eddaoui, M. El Mansouri, O. Nhila, M. Benmessaoud, I. Ait Ouaggou, **E. M. Chakir**, R. Sebihi, M. Khalis, Local Diagnostic Reference Levels (LDRLs) for routine X-ray examinations in Morocco, Radioprotection, 57 (2022) 149-155.
- [18] M.R. Raissouni, M. Abid, **E. M. Chakir**, DESIGN AND IMPLEMENTATION OF A NEW TEACHING-LEARNING MODEL OF ELECTRICITY CONCEPTS IN MIDDLE SCHOOL, International Journal on Technical and Physical Problems of Engineering, 14 (2022) 92-100.
- [19] O. Nhila, M. Talbi, M. El Mansouri, M. El Katib, **E. M. Chakir**, Evaluation of CT Acquisition Protocols Effect on Hounsfield Units and Optimization of CT-RED Calibration Curve Selection in Radiotherapy Treatment Planning Systems, Moscow University Physics Bulletin, 77 (2022) 661-671.
- [20] N. Mejjad, A. Laissaoui, A. Benmhammed, A. Fekri, O. El Hammoumi, A. Benkdad, H. Amsil, **E. M. Chakir**, Potential ecological risk assessment of rare earth elements in sediments cores from the Oualidia lagoon, Morocco, Soil and Sediment Contamination, 31 (2022) 941-958.
- [21] M. Makhloul, H. Boukhal, **E. M. Chakir**, T. El Bardouni, M. Lahdour, M. Kaddour, A. Ahmed, A. Arectout, H. El Yaakoubi, Sensitivity and uncertainty quantification of neutronic integral data in the TRIGA Mark II research reactor, Nuclear Engineering and Technology, 54 (2022) 523-531.
- [22] M. Lahdour, T. El Bardouni, O. El Hajjaji, **E. M. Chakir**, H. Boukhal, J. Al Zain, M. Makhloul, H. Ziani, H. El Yaakoubi, Validation of deterministic code OpenNTP for the analysis of the C5G7-1D benchmark with different configurations, Applied Radiation and Isotopes, 187 (2022).

- [23] Y. Haddi, A. Kharchaf, **E. M. Chakir**, DETECTION AND LOCALIZATION OF RADIOACTIVE SOURCE USING A GEIGER MULLER COUNTER INTEGRATED ON MOBILE ROBOT BASED ON KALMAN FILTER, *International Journal on Technical and Physical Problems of Engineering*, 14 (2022) 57-64.
- [24] D. Elaarabi, A. Laissaoui, A. Guessous, A. Benkdad, **E. M. Chakir**, S. Said, Trace metals content in marine species from the north-western Moroccan Atlantic waters, *Egyptian Journal of Aquatic Biology and Fisheries*, 26 (2022) 443-458.
- [25] K.A. Bentaleb, S. Dachraoui, T. Hassouni, A. El mehdi, **E. M. Chakir**, A. Belboukhari, Development of a Survey to Assess Conceptual Understanding of Quantum Mechanics among Moroccan Undergraduates, *European Journal of Educational Research*, 11 (2022) 2219-2243.
- [26] H. BenDriss, E.L.**E. M. Chakir**, J. El Bakkali, A. Doudouh, InterDosi Monte Carlo study of radiation exposure of a reference crab phantom due to radioactive wastewater deposited in marine environment following the Fukushima nuclear accident, *Radiation and Environmental Biophysics*, 61 (2022) 623-629.
- [27] A. Benchrif, M. Tahri, B. Guinot, **E. M. Chakir**, F. Zahry, B. Bagdhad, M. Bounakhla, H. Cachier, F. Costabile, Aerosols in Northern Morocco-2: Chemical Characterization and PMF Source Apportionment of Ambient PM_{2.5}, *Atmosphere*, 13 (2022).
- [28] O.E. Belhaj, M.R. Bricha, M. Bellahsaouia, S. Belhaj, C. Elmahjoub, H. Boukhal, T. Elkhouchi, N. Bentaleb, Ionizing radiation metrology at the service of health: quality control of radiopharmaceutical dose calibrators in nuclear medicine unit - accuracy, reproducibility and linearity tests, *E3S Web of Conferences*, 2022.
- [29] O.E. Belhaj, H. Boukhal, **E. M. Chakir**, K. Laazouzi, M. Hadouachi, Y. Sadeq, S. Belhaj, M. Bellahsaouia, S. Soudjay, ISO 4037 2019: ESTABLISHMENT OF X-RAY NARROW-SPECTRUM SERIES USED IN THE NATIONAL SECONDARY STANDARD DOSIMETRY LABORATORY OF MOROCCO, *RAD Conference Proceedings*, 2022, pp. 31-37.
- [30] A. Arectout, I. Zidouh, Y. Sadeq, M. Azougagh, B. Maroufi, **E. M. Chakir**, H. Boukhal, Calculation of X-ray spectra characteristics and kerma to personal dose equivalent Hp(10)

conversion coefficients: Experimental approach and Monte Carlo modeling, Nuclear Engineering and Technology, 54 (2022) 301-309.

[31] M. Talbi, M. Khalis, R. Sebihi, O. Nhila, M. El Mansouri, **E. M. Chakir**, Z. Tahiri, Analysis of Half-Value Layer and Average Glandular Dose for Mammography Using Gate, Moscow University Physics Bulletin, 76 (2021) S95-S102.

[32] M. Lahdour, T. El Bardouni, O. El Hajjaji, **E. M. Chakir**, H. Ziani, J. Al Zain, E. Chham, M. El Barbari, OpenNTP: Implementation of the SN method in cartesian 2D geometry and the CP method in cylindrical and spherical 1D geometry, Computer Physics Communications, 261 (2021).

[33] M. Lahdour, T. El Bardouni, O. El Hajjaji, **E. M. Chakir**, M. Mohammed, J. Al Zain, H. Ziani, NTP-ERSN verification with C5G7 1D extension benchmark and GUI development, Nuclear Engineering and Technology, 53 (2021) 1079-1087.

[34] M. Kaddour, T. El Bardouni, H. Boukhal, M. Makhoul, **E. M. Chakir**, ^{56}Fe , ^{16}O , ^1H Elastic and capture cross sections analysis in PCA-REPLICA benchmark, Progress in Nuclear Energy, 142 (2021).

[35] H. El Yaakoubi, H. Boukhal, L. Erradi, **E. M. Chakir**, T. El Bardouni, M. El Barbari, M. Lahdour, H. Ziani, A. Arectout, M. Makhoul, Neutronic modeling and calculation of the Nuclear Heating Reactor NHR-5 by the deterministic codes DRAGON5 & DONJON5, Progress in Nuclear Energy, 142 (2021).

[36] M.R. Bricha, K. Benhamou, A. Mesfioui, **E. M. Chakir**, T. Ainane, N.A. Said, A. Hamdan, K. Elbouqdaoui, W. El Majbri, OPTIMISATION99 MO/99m TC GENERATORS: CHARACTERIZATION OF α ALUMINAS SIMPLES AND KINETIC STUDDING OF MOLYBDENUM ADSORPTION ON α ALUMINA, Rasayan Journal of Chemistry, 2021 (2021) 14-24.

[37] M. Bouita, Y. El Madhi, H. Sbai, I. Bouita, A.E. Bakouri, E.M. Ibrahimi, **E. M. Chakir**, Assessment of nitrogen pollution of groundwater in the maamora gharb aquifer, Morocco, Egyptian Journal of Aquatic Biology and Fisheries, 25 (2021) 739-758.

- [38] A. Benmhammed, N. Mejjad, A. Laissaoui, A. Elyahyaoui, **E. M. Chakir**, N. Ziad, H. Marah, Assessment of groundwater quality using Physico-chemical analyses of Sahel-Doukkala region, E3S Web of Conferences, 2021.
- [39] A. Benmhammed, A. Laissaoui, N. Mejjad, N. Ziad, **E. M. Chakir**, A. Benkdad, H.A. Bouh, A. El Yahyaoui, Recent pollution records in Sidi Moussa coastal lagoon (western Morocco) inferred from sediment radiometric dating, Journal of Environmental Radioactivity, 227 (2021).
- [40] A. Benmhammed, A. Laissaoui, N. Mejjad, **E. M. Chakir**, N. Ziad, A. Benkdad, A.E. Yahyaoui, H.A. Bouh, Assessment of chronological records of rare earth elements in sidi moussa lagoon sediment (North-Western Morocco), Environment and Ecology Research, 9 (2021) 186-195.
- [41] M. Bellahsaouia, M.R. Bricha, O.E. Belhaj, **E. M. Chakir**, H. Boukhal, T. Elkhokhi, Development of a GUI for automating quality control of dose calibrators using Python, E3S Web of Conferences, 2021.
- [42] A. Arectout, H. Boukhal, **E. M. Chakir**, E. Chham, M.A. Ferro-García, F. Piñero-García, M. Azahra, M. Makhloul, M. Azougagh, H. El Yaakoubi, I. Zidouh, V.M. Expósito-Suárez, Optimization of the n-type HPGe detector parameters using the “design of experiments” technique, Radiation Physics and Chemistry, 189 (2021).
- [43] A. Alhousali, S. Bourekadi, M. Azougagh, H. Boukhal, E. Alibrahimi, **E. M. Chakir**, The role of scientific research on nuclear radiation waste management and preserving environment, E3S Web of Conferences, 2021.
- [44] J. Al-Tuweity, Y. Sadiq, A. Mouktafi, P. Arce, I. Fathi, M. Mohammed, M. Azougagh, E.M. Alibrahmi, H. Boukhal, **E. M. Chakir**, GAMOS/GEANT4 simulation and comparison study of X-ray narrow-spectrum series at the national Secondary Standard Dosimetry Laboratory of Morocco, Applied Radiation and Isotopes, 175 (2021).
- [45] J. Al-Tuweity, H. Kamleh, M. Said Al-Masri, A.W. Doubal, A. Mohamed, E.M. Alibrahmi, H. Boukhal, **E. M. Chakir**, Determination of correction factor of self-absorption for lead-210 in environment samples using spike method, E3S Web of Conferences, 2021.

- [46] J. Al-Tuweity, H. Kamleh, M.S. Al-Masri, A.W. Doubal, **E. M. Chakir**, Self-absorption Correction Factors: Applying A Simplified Method to Analysis of Lead-210 in Different Environment Samples by Direct Counting of Low-energy Using HPGe Detector, E3S Web of Conferences, 2021.
- [47] A. Otmani, A. Benchrif, M. Tahri, M. Bounakhla, **E. M. Chakir**, M. El Bouch, M. Krombi, Impact of Covid-19 lockdown on PM10, SO2 and NO2 concentrations in Salé City (Morocco), Science of the Total Environment, 735 (2020).
- [48] M. Makhloul, H. Boukhal, T. El Bardouni, **E. M. Chakir**, M. Kaddour, S. El Ouahdani, M. Mohammed, A. Ahmed, Adjustment of group cross sections by means of integral data (ENDF/-VII.1), Progress in Nuclear Energy, 118 (2020).
- [49] H. El Yaakoubi, H. Boukhal, T. El Bardouni, **E. M. Chakir**, O. El Hajjaji, E. Chham, B. El Bakkari, Y. Boulaich, M. Azougagh, Neutronic study of the 2-MW TRIGA MARK-II research reactor by the deterministic codes DRAGON5 & DONJON5, Applied Radiation and Isotopes, 157 (2020).
- [50] S. El Ouahdani, L. Erradi, H. Boukhal, **E. M. Chakir**, T. El Bardouni, Y. Boulaich, A. Ahmed, Analysis of the CREOLE experiment on the reactivity temperature coefficient of the UO2 light water moderated lattices using Monte Carlo transport calculations and ENDF/B-VII.1 nuclear data library, Nuclear Engineering and Technology, 52 (2020) 1120-1130.
- [51] E. Deiaa, L. Abdelmorhit, G. Amina, A. Benkdad, **E. M. Chakir**, The assessment of radiological risks associated with the ingestion of 210Po, 210Pb, and 137Cs in marine organisms collected from the local fish market of Kenitra, Morocco, Journal of Radioanalytical and Nuclear Chemistry, 324 (2020) 1069-1076.
- [52] M. Lahdour, T. El Bardouni, **E. M. Chakir**, K. Benaalilou, M. Mohammed, H. Bougueniz, H. El Yaakoubi, NTP-ERSN: A new package for solving the multigroup neutron transport equation in a slab geometry, Applied Radiation and Isotopes, 145 (2019) 73-84.
- [53] M. Elghayyaty, A. Hadjoudja, **E. M. Chakir**, O. Mouhib, A. El Habti, Three parallelization syndrome block for reed solomon code RS (255, 239) used in digital video broadcasting DVB-T, ACM International Conference Proceeding Series, 2019.

- [54] H. El Yaakoubi, H. Boukhal, T. El Bardouni, L. Erradi, **E. M. Chakir**, K. Benaalilou, M. Lahdour, S. El Ouahdani, M. El Barbari, Validation study of the reactor physics lattice transport code DRAGON5 & the Monte Carlo code OpenMC by critical experiments of light water reactors, *Journal of King Saud University - Science*, 31 (2019) 1271-1275.
- [55] T. El Bardouni, M. Mohammed, **E. M. Chakir**, O. Elhajjaji, H. Boukhal, E. Chham, H. Al kanti, Conversion coefficients for photon exposure of the human lens eye: EGSnrc and MCNP6 Monte Carlo simulation, *Radiation Physics and Chemistry*, 156 (2019) 159-168.
- [56] A. Ahmed, H. Boukhal, T. El Bardouni, M. Makhloul, **E. M. Chakir**, S. El Ouahdani, Sensitivity and uncertainty analysis on keff due to nuclear data in the KRITZ-2:19 – Comparison between JENDL-4.0 and ENDF/B-VII.1, *Annals of Nuclear Energy*, 129 (2019) 308-315.
- [57] M. Mohammed, T. El Bardouni, **E. M. Chakir**, M. Saeed, A.Z. Jamal, L. Mohamed, Validation of BEAMnrc Monte Carlo model for a 12 MV photon beam, *Journal of King Saud University - Science*, 30 (2018) 537-543.
- [58] M. Mohammed, T. El Bardouni, **E. M. Chakir**, H. Boukhal, M. Saeed, A.A. Ahmed, Monte Carlo simulation of Varian Linac for 6 MV photon beam with BEAMnrc code, *Radiation Physics and Chemistry*, 144 (2018) 69-75.
- [59] M. Makhloul, H. Boukhal, T. El Bardouni, M. Kaddour, **E. M. Chakir**, S. El Ouahdani, ²³⁵U elastic cross-section adjustment in criticality benchmarks – Comparison between JENDL-4.0 and ENDF/-VII.1, *Annals of Nuclear Energy*, 114 (2018) 541-550.
- [60] A. Fllaoui, A. El Morabiti, A. Jehouani, **E. M. Chakir**, A computerized modular system for radioisotopes production using multigroup formalism and slowing-down equations solved by iterative method, *Journal of Radioanalytical and Nuclear Chemistry*, 317 (2018) 633-640.
- [61] S. El Ouahdani, H. Boukhal, L. Erradi, **E. M. Chakir**, M. Azahra, T. El Bardouni, M. Makhloul, A. Ahmed, A temperature effect analysis of the KRITZ-1 benchmark based on keff decomposition and using the JENDL-4.0 and ENDF/B-VII.1 libraries, *Progress in Nuclear Energy*, 109 (2018) 121-129.

- [62] M. Mohammed, **E. M. Chakir**, H. Boukhal, S. Mroan, T. El Bardouni, Evaluation of the dosimetric characteristics of 6 MV flattened and unflattened photon beam, *Journal of King Saud University - Science*, 29 (2017) 371-379.
- [63] A. El Kachani, **E. M. Chakir**, A.A. Laachir, T. Jarou, A. Hadjoudja, Nonlinear model predictive control applied to a DFIG-based wind turbine with a Shunt APF, *Proceedings of 2016 International Renewable and Sustainable Energy Conference, IRSEC 2016*, 2017, pp. 369-375.
- [64] A. Fllaoui, Y. Ghamad, B. Zoubir, Z.A. Ayaz, A. El Morabiti, H. Amayoud, **E. M. Chakir**, Validation of a New Design of Tellurium Dioxide-Irradiated Target, *Nuclear Engineering and Technology*, 48 (2016) 1273-1279.
- [65] S. El Ouahdani, H. Boukhal, L. Erradi, **E. M. Chakir**, T. El Bardouni, O. Hajjaji, Y. Boulaich, K. Benaalilou, M. Kaddour, Monte Carlo analysis of KRITZ-2 critical benchmarks on the reactivity temperature coefficient using ENDF/B-VII.1 and JENDL-4.0 nuclear data libraries, *Annals of Nuclear Energy*, 87 (2016) 107-118.
- [66] A. El Kachani, **E. M. Chakir**, T. Jarou, A. Ait Laachir, J. Zerouaoui, A. Hadjoudja, Robust model predictive control applied to a WRIG-based wind turbine, *International Review of Automatic Control*, 9 (2016) 216-226.
- [67] M. Saeed, T. El Khoukhi, Y. Boulaich, **E. M. Chakir**, H. Boukhal, T. El Bardouni, Attenuation correction of pet image reconstructed based on direct filtering of the raw data acquired using MCNPX code, *Journal of Theoretical and Applied Information Technology*, 81 (2015) 124-130.
- [68] A. El. Kachani, **E. M. Chakir**, A.A. Laachir, T. Jarou, A. Niaaniaa, J. Zerouaoui, M.B. Sedra, AC grid connected DFIG-based wind turbine with shunt active power filter based on nonlinear predictive control, *International Review on Modelling and Simulations*, 8 (2015) 354-361.
- [69] Y. Boulaich, B. Nacir, T. El Bardouni, H. Boukhal, **E. M. Chakir**, B. El Bakkari, C. El Younoussi, Transient behavior during reactivity insertion in the Moroccan TRIGA Mark II reactor using the PARET/ANL code, *Nuclear Engineering and Design*, 284 (2015) 247-250.

- [70] B. Nacir, Y. Boulaich, **E. M. Chakir**, T. El Bardouni, B. El Bakkari, C. El Younoussi, Safety analysis and optimization of the core fuel reloading for the Moroccan TRIGA Mark-II reactor, *Annals of Nuclear Energy*, 70 (2014) 312-316.
- [71] B. Belhaj, T. Elkhouchi, **E. M. Chakir**, H. Boukha, T. Elbardouni, Study of the effect of weather, topography and radionuclide on the TEDE in a fire scenario involving a dispersion of a plume in the atmosphere, *Middle East Journal of Scientific Research*, 18 (2013) 1192-1198.
- [72] B. El Bakkari, T. Elbardouni, B. Nacir, C. Elyounoussi, Y. Boulaich, O. Meroun, M. Zoubair, **E. M. Chakir**, Accuracy assessment of a new Monte Carlo based burnup computer code, *Annals of Nuclear Energy*, 45 (2012) 29-36.
- [73] Y. Boulaich, B. Nacir, T. El Bardouni, M. Zoubair, B. El Bakkari, O. Merroun, C. El Younoussi, A. Htet, H. Boukhal, **E. M. Chakir**, Steady-state thermal-hydraulic analysis of the Moroccan TRIGA MARK II reactor by using PARET/ANL and COOLOD-N2 codes, *Nuclear Engineering and Design*, 241 (2011) 270-273.
- [74] Y. Boulaich, T. El Bardouni, L. Erradi, **E. M. Chakir**, H. Boukhal, B. Nacir, C. El Younoussi, B. El Bakkari, O. Merroun, M. Zoubair, CREOLE experiment study on the reactivity temperature coefficient with sensitivity and uncertainty analysis using the MCNP5 code and different neutron cross section evaluations, *Nuclear Engineering and Design*, 241 (2011) 2927-2932.
- [75] A. Benkdad, A. Laissaoui, M.V. Tornero, M. Benmansour, **E. M. Chakir**, I.M. Garrido, J.B. Moreno, Trace metals and radionuclides in macroalgae from Moroccan coastal waters, *Environmental Monitoring and Assessment*, 182 (2011) 317-324.
- [76] C.E. Younoussi, T.E. Bardouni, B.E. Bakkari, B. Nacir, Y. Boulaich, H. Boukhal, O. Meroun, M. Zoubair, **E. M. Chakir**, A. Htet, Monte Carlo characterisation of irradiation positions of the CENM TRIGA MARK II research reactor using MCNP5, *International Journal of Nuclear Energy Science and Technology*, 5 (2010) 335-346.
- [77] B. El Bakkari, B. Nacir, T. El Bardouni, C. El Younoussi, O. Merroun, A. Htet, Y. Boulaich, M. Zoubair, H. Boukhal, **E. M. Chakir**, Monte Carlo modelling of TRIGA research reactor, *Radiation Physics and Chemistry*, 79 (2010) 1022-1030.

- [78] O. Merroun, A. Almers, T. El Bardouni, B. El Bakkari, **E. M. Chakir**, Analytical benchmarks for verification of thermal-hydraulic codes based on sub-channel approach, *Nuclear Engineering and Design*, 239 (2009) 735-748.
- [79] O. Merroun, A. Al Mers, M.A. Veloso, T. El Bardouni, B. El Bakkari, **E. M. Chakir**, Experimental validation of the thermal-hydraulic code SACATRI, *Nuclear Engineering and Design*, 239 (2009) 2875-2884.
- [80] B. El Bakkari, T. El Bardouni, O. Merroun, C. El Younoussi, Y. Boulaich, **E. M. Chakir**, The development of an MCNP tally-based burnup code, *International Journal of Nuclear Energy Science and Technology*, 4 (2009) 179-195.
- [81] B. El Bakkari, T. El Bardouni, O. Merroun, C. El Younoussi, Y. Boulaich, **E. M. Chakir**, Development of an MCNP-tally based burnup code and validation through PWR benchmark exercises, *Annals of Nuclear Energy*, 36 (2009) 626-633.
- [82] B. El bakkari, T. El Bardouni, O. Merroun, C. El Younoussi, Y. Boulaich, H. Boukhal, **E. M. Chakir**, Validation of a new continuous Monte Carlo burnup code using a Mox fuel assembly, *Nuclear Engineering and Design*, 239 (2009) 1828-1838.
- [83] T. El Khoukhi, R.C. El Moursli, A. Chouak, Z. Moutia, M. Lferde, A. Senhou, A. Gaudry, S. Ayrault, **E. M. Chakir**, Comparative use of tree leaves, needles, tree barks and lichens for air pollution biomonitoring, *Physica Scripta T*, T118 (2005) 211-214.
- [84] L. Erradi, **E. M. Chakir**, A. Htet, T. Elbardouni, A. Chetaine, Analysis of KRITZ and KAMINI reactivity temperature coefficient benchmarks, *Radiation Physics and Chemistry*, 71 (2004) 745-747.
- [85] T. El Khoukhi, R.M. Cherkaoui, A. Gaudry, S. Ayrault, A. Senhou, A. Chouak, Z. Moutia, **E. M. Chakir**, Air pollution biomonitoring survey in Morocco using k0 -INAA, *Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms*, 213 (2004) 770-774.
- [86] T. El Bardouni, A. Mouadili, **E. M. Chakir**, F. El Moussaoui, M. Azahra, H. Boukhal, L. Erradi, A. Kamili, A. Sekaki, Study of thermal to 14 MeV neutron conversion in Triga

reactor: Application to averaged cross section measurement, Radiation Physics and Chemistry, 71 (2004) 885-886.

[87] M. Azahra, C. González-Gómez, J.J. López-Peñalver, T. El Bardouni, A. Camacho García, H. Boukhal, F. El Moussaoui, **E. M. Chakir**, L. Erradi, A. Kamili, A. Sekaki, The seasonal variations of ^7Be and ^{210}Pb concentrations in air, Radiation Physics and Chemistry, 71 (2004) 789-790.

[88] L. Erradi, A. Htet, **E. M. Chakir**, Analysis of benchmarks on the reactivity temperature coefficient using new libraries based on ENDF/B-VI (release 5) and JEF2-2 data, Radiation Physics and Chemistry, 61 (2001) 773-775.

Autre production scientifique :

- Chapter 12 – Can We Accelerate Neutrons? Experimental and Monte Carlo Study of Thermal to 14MeV Neutron Conversion in TRIGA Reactor by Means of Secondary Nuclear Reactions; Nova Science Publishers Radiation Physics Research Progress, 2008, pp. 407-423, ISBN: 1-60021-988-8