

10th International Nuclear Atlantic Conference (INAC 2021)

Nuclear Technology: Reducing our carbon footprint and increasing quality of life

Online

29 November – 2 December 2021

Volume 1 of 2

ISBN: 978-1-7138-4235-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2021) by Associacao Brasileira de Energia Nuclear (ABEN)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact Associacao Brasileira de Energia Nuclear (ABEN)
at the address below.

Associacao Brasileira de Energia Nuclear (ABEN)
Rua Candelária, nº 65, 14º andar - Centro,
Rio de Janeiro (RJ) - CEP 20.091-906
Brazil

Phone: (21) 2266-0480

www.aben-com.br

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

567-1 - DETERMINATION OF TRACE ELEMENTS OF FISH FROM THE LOWER PORTION OF POMBA RIVER BY NEUTRON ACTIVATION.....	1
<i>Paulo Sergio Silva</i>	
564-1 - THE EFFECTS OF CHEMICAL ADMIXTURE ON THE MECHANICAL PERFORMANCE OF PORTLAND CEMENT CONCRETE FOR USE IN THE BRAZILIAN RADIOACTIVE WASTE REPOSITORY.....	6
<i>Carlos Eduardo Santos, Cledola Cassia De Tello, Evandro Tolentino</i>	
560-2 - THE EVOLUTION OF THE ROBOTIC SYSTEMS FOR PROSTATE RADIOACTIVE SEED IMPLANTS IN LOW-DOSE-RATE BRACHYTHERAPY.....	10
<i>Leonardo Silva, Tarcisio Campos</i>	
603-1 - DEVELOPMENT OF A MOBILE APPLICATION AS A SUPPORT TOOL FOR ACCESSING ESSENTIAL INFORMATION IN APPLYING THE TESTS REQUIRED BY NORMATIVE INSTRUCTION 54/19 MS AND INTERNATIONAL PROTOCOLS.....	14
<i>Jose Silverio Dos Santos, Claudio Mesquita Menezes</i>	
589-1 - MONTE CARLO SIMULATION ASSISTED PROJECT OF A THERMALIZATION NEUTRON SYSTEM FOR NEUTRONGRAPHY FROM ²⁴¹ AMBE SOURCES: PROGRESS REPORT.....	17
<i>Antonio Orozco, Claudio Federico, Odair Goncalves</i>	
556-1 - PERFORMANCE AND OPTIMIZATION OF A GEM-BASED NEUTRON DETECTOR USING A PARAMETERIZED FAST SIMULATOR.....	21
<i>Renan Felix Dos Santos, Lucas Serra Filho, Marcelo Munhoz, Marco Bregant, Mauricio Morales, Francisco Souza</i>	
561-1 - OVERVIEW ON THE BRAZILIAN SCENARIO AND THE FIRST EFFORTS TOWARDS THE DEVELOPMENT OF A BOREHOLE REPOSITORY.....	25
<i>Mariana Milagre, Roberto Vicente, Julio Marumo, Temistocles Luz, Marcos Orlando, Isolda Costa</i>	
559-1 - REPLACEMENT OF ANGRA 1 NPP STEAM GENERATORS: EVALUATION OF RESULTS OBTAINED AFTER 10 YEARS.....	29
<i>Fernando Soares Filho, Matheus Silva</i>	
558-1 - QUALIFICATION OF SYSTEM CODE AC ² /ATHLET FOR NEW BUILTS.....	39
<i>Thorsten Hollands</i>	
441-1 - GROUNDWATER VULNERABILITY AND CONTAMINATION RISKS ON A URANIUM MINING SITE IN A WATER-SCARCE SCENARIO.....	43
<i>Guilherme Sobrinho, Mariza Franklin, Nelson Fernandes</i>	
26-1 - ANALYSIS OF THE APPLICATION OF REMOTELY OPERATED UNDERWATER VEHICLES IN NUCLEAR POWER PLANTS.....	47
<i>Giovana Ciongoli, Flavia Biaty, Patricia Paladino, Arthur Juliao, Gaiane Sabundjian</i>	

446-1 - PRELIMINARY RESULTS OF MONTE CARLO STUDY OF AN EXPERIMENT TO CALCULATE THERMAL NEUTRON CROSS SECTION USING NEUTRON BEAM FROM THE IEA-R1 REACTOR.....	51
<i>Eduardo P. Longhini, Frederico A. Genezini, Guilherme S. Zahn, Mauricio Moralles</i>	
466-1 - PROPOSED RESOLUTION OF THE IEA-R1 REACTOR RECHARGE OPTIMIZATION PROBLEM USING THE PARTICLE SWARM OPTIMIZATION METHOD.....	55
<i>Thiago Augusto Santos, Giovanni De Stefani, Frederico Genezini</i>	
211-1 - IMPACT OF THE COLLECTIVE EFFECTIVE DOSE OF THE POPULATION OF THE VALE DO AÇO REGION ON COMPUTED TOMOGRAPHY SCANS DURING THE COVID-19 PANDEMIC.	59
<i>Leticia Bacelar, Maria Da Penha Albuquerque, Roberto Vicente</i>	
549-1 - SMALL MODULAR REACTORS AND PERSPECTIVES FOR THEIR APPLICATION IN BRAZIL	62
<i>Caroline Silva, Leticia Goncalves, Jose Maiorino</i>	
15-1 - RELAP5 CODE SIMULATION OF THE ANGRA2 PRESSURIZER SURGE LINE ACCIDENT.....	66
<i>Gaiane Sabundjian, Rafael Pacheco, Thadeu Conti, Andrea Del Pozzo, Ana Lima</i>	
373-1 - OPTIMIZATION OF PRE-PROCESSING PARAMETERS IN THE X-RAY MICROTOMOGRAPHY (MICROCT) IMAGE RECONSTRUCTION PROCESS	70
<i>Alexandre Cordeiro</i>	
534-1 - DETERMINATION OF K, MG, MN, NA AND V IN TISSUES OF BIVALVE MOLLUSKS NATIVE TO CARAGUATATUBA, SP, BRAZIL BY INSTRUMENTAL NEUTRON ACTIVATION (INAA).....	74
<i>Claudio Lins, Eduinetty Ceci Sousa, Edson Moreira</i>	
415-1 - STUDY OF THE ENERGY SPECTRUM FOR RADIATION DETECTORS WITH DIGITAL OSCILLOSCOPE AND WORKSHEET SOFTWARE	78
<i>Silas Goncalves, Samuel Canazza, Fabio Costa, Margarida Hamada</i>	
154-1 - RESPONSE OF HEAD AND NECK RADIOTHERAPY IN PATIENTS WITH DENTAL IMPLANTS	82
<i>Maria Candida Oliveira</i>	
342-1 - VIABILITY ANALYSIS OF EMPLOYING ULTRASOUND TECHNIQUE FOR BORIC ACID CONCENTRATION MEASUREMENT IN LIQUID MEDIUM.....	86
<i>Thiago Roberto, Celso Lapa, Marcelo Bittencourt, Richard Kohara, Mario Silva</i>	
70-1 - DESIGN CONSIDERATIONS FOR RECTANGULAR BOLTED FULL FACE FLANGED JOINTS FOR SURFACE CONDENSERS	90
<i>Augusto Soave, Miguel Mattar Neto</i>	
167-1 - NEUTRONIC ANALYSIS FOR USING ACID BORIC AS A STABILIZER OF REACTIVITY FEEDBACKS IN AN AQUEOUS HOMOGENEOUS SUBCRITICAL SYSTEM.....	94
<i>Livan Hernandez Pardo, Daylen Milian Perez, Daniel Milian Perez, Daniel Milian Lorenzo, Carlos Brayner De Oliveira Lira</i>	
210-2 - SIMULATION OF AN ELECTRIC POWER SYSTEM BASED ON KILOPOWER PROJECT	95
<i>Patryck Ferreira, Lamartine Guimaraes</i>	

200-1 - SIMULATION OF VIRTUAL RADIATION DETECTORS IN NUCLEAR POWER PLANTS TO SUPPORT EQUIPMENT AGEING STUDIES BASED ON PARTICLE SWARM OPTIMIZATION	99
<i>Fernando Henrique Cardozo, Andressa Nicolau, Roberto Schirru, Marcos Silva</i>	
263-1 - COMPARISON BETWEEN METHODS USING THALLIUM AND INDIUM AS INTERNAL STANDARD FOR THE DETERMINATION OF TRACE ELEMENTS IN WATER SAMPLES BY ICP-MS	103
<i>Amanda Balassiano Carvalho, Sueli Da Silva Peres</i>	
245-2 - SIMULATION OF TRANSPORT AND CONCENTRATION OF RADIONUCLIDES BY DYNAMIC PROCESSES IN THE ATMOSPHERE.....	106
<i>Victor Tsutsumiuchi</i>	
212-1 - RISK MANAGEMENT OF RADIOACTIVE WASTE IN BRAZILIAN LAW: PRECAUTIONARY AND PREVENTIVE MEASURES	111
<i>Monise Andrade, Roberto Vicente</i>	
566-1 - RDC 330 IN PRACTICE: ANALYSIS OF THE CHALLENGES OF IMPLEMENTING NORMATIVE INSTRUCTION 97 IN THE PRIVATE MAGNETIC RESONANCE SERVICES OF THE CITY OF FORTALEZA-CE.	114
<i>Darlan Guerra, Taina Travassos Mota Martins, Orlando Junior, Carla De Souza</i>	
550-1 - PRIMARY CIRCUIT COOLANT ACTIVATION PRODUCTS DISTRIBUTION IN A SMALL MODULAR REACTOR.....	118
<i>Thiago Carluccio, Gregorio Souza, Priscila Sanchez, Pamela Piovezan</i>	
188-1 - DEVELOPMENT OF A METHODOLOGY FOR MANAGEMENT AND PHYSICAL-CHEMICAL CONTROL OF THE COOLING WATER OF THE IPR-R1 TRIGA RESEARCH NUCLEAR REACTOR.....	122
<i>Joao Gabriel Marques, Antonella Costa, Cláudia Pereira, Amir Mesquita</i>	
108-2 - INFLUENCE OF THE RESOLUTION MODE ON MEAN AND MAXIMUM SUV OF A PRECLINICAL PET IMAGE.	126
<i>Joao Do Carmo Barbosa, Guilherme Souza, Rodrigo Gontijo, Bruno Mendes, Andrea Ferreira</i>	
221-1 - USE OF THE ION EXCHANGE TECHNIQUE FOR PURIFICATION OF LITHIUM CARBONATE FOR NUCLEAR INDUSTRY	130
<i>Mariana Andrade, Gláucia Oliveira, Marycel Cotrim, Jose Seneda, Oscar Bustillos</i>	
223-1 - RELATIONSHIP BETWEEN OF THE RADON CONCENTRATION ON AIR INSIDE THE RESIDENCES AND THE ROCKS IN METROPOLITAN REGION OF BELO HORIZONTE - MG. A REVIEW.	133
<i>Natalia Taveira, Talita Santos, Zildete Rocha, Rose Pinheiro, Arno Heeren</i>	
371-1 - PROPOSAL FOR THERMAL STUDY OF A HIGH TEMPERATURE REACTOR USING A COMPUTATIONAL FLUID DYNAMIC TOOL	137
<i>Junio De Souza, Antonella Costa, Andre Dos Santos, Mario Ramos</i>	
101-3 - RADIOTHERAPY TREATMENT IN COVID-19 PANDEMIC: PERCEPTION OF PROFESSIONALS IN RADIOLOGICAL TECHNIQUES	141
<i>Enzo Cortez, Jony Geraldo, Adriana Batista</i>	
114-1 - EXPERIMENTAL INVESTIGATIONS OF ADDITIVES ON THE THERMAL CONDUCTIVITY UO ₂ PELLETS	144
<i>Denise Camarano, Fabio Mansur, Ana Maria Santos</i>	

548-1 - APPLICATION OF PEGYLATED COBALT AND NICKEL FERRITE NANOPARTICLES AS RADIOSENSITIZING AGENTS FOR BREAST CANCER CELLS.....	148
<i>Daniele Fagundes, Joice Yoko Idehara, Nayara Gonzaga, Liliam Leonel, Raquel Santos, Jose Ardisson</i>	
546-2 - A QUALITATIVE APPROACH OF THE REGULATION FOR THE LIFE EXTENSION OF BRAZILIAN NUCLEAR POWER PLANTS.....	152
<i>Carla Andrade</i>	
214-1 - MAGNETIC RESONANCE SAFETY IN THE VIEW OF NEW BRAZILIAN REGULATIONS.....	156
<i>Amanda Clemente, Renato Semmler</i>	
21-3 - P _N SYNTHETIC ACCELERATION FOR THE SOURCE ITERATION SCHEME IN SLAB-GEOMETRY DISCRETE ORDINATES TRANSPORT CALCULATIONS	160
<i>Alan Silva, Lisa Enomoto, Ricardo Barros</i>	
284-1 - A QUICK GUIDE OF REGULATIONS AND STANDARDS APPLIED FOR THE SUPPLY CHAIN OF NUCLEAR POWER PLANTS AND OTHER INSTALLATIONS	164
<i>Paulo Ferreira Junior, Mauricio Fernandes, Erick De Paula</i>	
484-1 - OPTIMIZATION OF ANALYSIS METHODOLOGY IN THE DETERMINATION OF CD, IN AND IMPURITIES IN NUCLEAR GRADE SILVER-INDIUM-CADMIUM ALLOYS	170
<i>Luis Oliveira, Ieda Silva, Elaine Pereira, Erica Santana, Leonardo Iwaki, Jose Lopes, Guilherme De Oliveira</i>	
63-1 - SYNTHESIS OF GEOPOLYMERS FOR IMMOBILIZATION OF RADIOACTIVE WASTE USING SEWAGE TREATMENT PLANT SLUDGE.....	174
<i>Alexandre Casas, Leandro Araujo, Rafael Garcia, Roberto Vicente, Margareth Franco, Julio Marumo</i>	
439-1 - WATER BOILING TIME IN A SPENT FUEL POOL WITH ADIABATIC AND NON-ADIABATIC BOUNDARY CONDITIONS	181
<i>Fernando De Faria, Dario Godino, Santiago Corzo, Damian Ramajo, Antonella Costa, Claubia Pereira</i>	
46-1 - PHYSICAL PROTECTION SYSTEM EFFECTIVENESS EVALUATION UNDER INSIDER ATTACK SCENARIO TO A NUCLEAR FACILITY	185
<i>Luiz Felipe Silva, Anizia Silva, Alexandre Lima, Francisco Silva, Renato Tavares</i>	
377-1 - DEGRADATION AND TOXICITY OF AMOXICILLIN AFTER ELECTRON BEAM IRRADIATION.....	189
<i>Bruno Villardi</i>	
462-1 - CARACTERIZAÇÃO DE CAMPOS DE NÊUTRONS TÉRMICOS PARA A CALIBRAÇÃO DE MONITORES DE NÊUTRONS EM TERMOS DA GRANDEZA EQUIVALENTE DE DOSE AMBIENTE H* (10,0)	193
<i>Larissa Paizante Santos Da Silva, Simone Da Silva Fernandes, Karla Cristina De Souza Patrao, Walsan Wagner Pereira</i>	
107-1 - AN ANALYSIS OF SCIENTIFIC LITERATURE PRODUCTION RELATED TO RADIATION PROTECTION AND STRATEGIC ENVIRONMENTAL ASSESSMENT	197
<i>Rocio Reis, Ana Cristina Ferreira</i>	
213-1 - XRF DATA SIMULATION TO CALCULATE PIGMENT LAYER THICKNESS IN WORKS OF ART.	204
<i>Ana Leticia Castro De Oliveira, Renato Freitas, Andre Pimenta, Marcelino Dos Anjos</i>	

246-1 - MATHEMATICAL MODELING UTILIZING THE MCNP CODE AND DETERMINATION OF RESPONSE CURVES OF A NAI(TL) DETECTOR	209
<i>Bruno Zaninotto, Cesar Salgado, William Salgado, Sophia Dam</i>	
193-1 - ¹⁸ F-FES RADIATION DOSIMETRY PRELIMINARY ESTIMATES FOR PRECLINICAL STUDIES BASED ON VOXELIZED PHANTOM	213
<i>Andrea Ferreira, Ana Carolina Bispo, Christiane Leite, Juliana Silva, Marcelo Mamede, Rodrigo Gontijo, Bruno Melo</i>	
536-1 - DETERMINATION OF DIFFERENT FE OXIDES USING EDXRF	217
<i>Luiz Felipe Ribeiro Garcia, Paulo S. Parreira, Dimas A. M. Zaia, Antonio C. S. Da Costa</i>	
391-3 - EVALUATION OF DITHIOL SPECTROPHOTOMETRIC METHOD FOR TIN DETERMINATION IN LYOPHILIZED REAGENTS	221
<i>Higor Castro, Vincenzo Couri, Patricia Martins, Joel Santos, Margareth Matsuda</i>	
383-1 - SOIL METALS AND SEDIMENTS: A REVIEW	224
<i>Vivianne Souza, Sandra Barbosa, Luana Silva, Waldecy Silva</i>	
21-4 - ESTIMATION OF NEUTRAL PARTICLE LEAKAGE VIA THE ADJOINT DISCRETE ORDINATES TRANSPORT TECHNIQUES	228
<i>Jesus Curbelo, Ricardo Barros</i>	
176-2 - ANALYSIS OF PORE GEOMETRY IN THE COMPACTED FINE AGGREGATE MATRIX BY X-RAY MICROTOMOGRAPHY	232
<i>Rogério Da Costa, Inaya Lima</i>	
125-1 - CFD ANALYSIS OF AN INFINITE WIRE-WRAPPED LBE-COOLED FAST REACTOR SUB-CHANNEL	236
<i>Ivan Umezu, Antonella Costa, Andre Augusto Dos Santos</i>	
239-1 - OPTIMIZATION OF PWR NUCLEAR REACTOR RELOAD PROBLEM UTILIZING PARALLELED STRUCTURED PBIL.....	240
<i>Flavio Gomes De Castro E Silva</i>	
551-1 - ISOTOPIC CHARACTERIZATION TO EVALUATE THE AUTHENTICITY OF BRAZILIAN REFINED VEGETABLE OIL.....	244
<i>Samuel Gimenes, Vladimir Costa</i>	
110-4 - SAFE RADIATION TRAINING USING WIRELESS SIGNALS DEVICES	247
<i>Marcos Farias, Douglas Sales, Gustavo Wong</i>	
81-1 - THERMOHYDRAULIC ANALYSIS OF THE COOLANT ENTRANCE INTO THE CORE OF PEBBLE BED GAS-COOLED REACTOR.....	251
<i>Abel Gamez Rodriguez, Daniel Milian Perez, Carlos Brayner De Oliveira Lira</i>	
96-1 - COUNTING TIME OPTIMIZATION FOR GAMMA-RAY SPECTROMETRY ANALYSIS: A REVIEW OF PUBLISHED SCIENTIFIC PAPERS	255
<i>Marcelo Nisti, Marcelo Maduar, Catia Saueia, Fernanda Cavalcante</i>	
147-1 - TRATAMENTO DE REJEITO BORRA DE PETRÓLEO PELA TÉCNICA DE PIRÓLISE COM MICRO-ONDAS	259
<i>Claudia Paixao, Roberto Vicente, Leandro De Araujo</i>	
319-1 - INTERNATIONAL LAW AND THE USE OF NUCLEAR TECHNOLOGY IN WEAPONS.....	263
<i>Valeria Alcantara E Alves, Amir Mesquita, Vitor Fernandes De Almeida</i>	

369-1 - SIMULATION OF THE CONTRIBUTION OF PMMA SUPPORT SCATTERING IN THE RESPONSE OF TLDS IRRADIATED IN AIR KERMA.....	266
<i>Marcos Lino, Renata Silveira, Clayton Augusto Benevides</i>	
532-1 - EVALUATION OF THE FEASIBILITY OF SEAWATER DESALINATION USING THE AP1000 NUCLEAR REACTOR AS A ENERGY SOURCE	270
<i>Maria Da Silva, Daniel Rodriguez, Carlos Alberto Oliveira Lira, Fernando Andrade Lima</i>	
238-1 - STUDY OF ALUMINOTHERMIC SLAG LEACHING FOR URANIUM AND THORIUM RECOVERY	274
<i>Vanderlei Moura, Talita Santos, Claubia Pereira</i>	
226-1 - CHALLENGES OF A RADIOACTIVE WASTE COMMUNICATION PROGRAM	282
<i>Lilian Bueno, Roberto Vicente</i>	
45-2 - SURVEY ON RADON ACTIVITY IN THE AIR OF DWELLINGS OF CURITIBA URBAN Area: AND CARAMBEÍ RURAL REGION (PARANÁ STATE, BRAZIL).....	285
<i>Sergei Paschuk, Silvia De Palma, Janine Correa, Amanda Da Silva, Monique De Oliveira, Francesco Antonelli, Oderson De Souza Filho</i>	
315-1 - QUANTITATIVE ANALYSIS OF MINOR AND TRACE ELEMENTS IN BLOOD SERUM OF DAIRY CATTLE (BOS TAURUS) BY WDXRF	289
<i>Natalia Carrillo Gaeta, Daniel Ubriaco Oliveira Goncalves De Carvalho, Mario Reyes Aleman, Jeferson Silva Carvalho, Patricia Padua Cedraz, Joao Ulrich, Luigi Jovani, Lilian Gregory, Mascos Scapin</i>	
149-1 - CHARACTERIZATION OF BENTONITE, VERMICULITE AND SOIL AS POTENTIAL MATERIALS TO COMPOSE THE NATURAL BARRIERS IN A NEAR-SURFACE REPOSITORY	293
<i>Daisy Dos Santos, Samara Barroso, Thais Teixeira, Cledola Tello</i>	
413-1 - PORTABLE RADIATION DETECTOR WITH PIN PHOTODIODE FOR X-RAYS AND CSI(TL) SCINTILATOR WITH PHOTODIODE FOR GAMMA RAYS	297
<i>Samuel Canazza, Silas Goncalves, Fabio Costa, Margarida Hamada</i>	
257-1 - PROBLEMS IN APPLICATION OF LEVEL 2 PROBABILISTIC SAFETY ASSESSMENT FOR NPP IN BRAZIL	301
<i>Maritza R. Gual, Marcos C. Maturana, Nathalia N. Araujo, Hugo Da Costa Romberg Junior</i>	
161-1 - RADIATION SHIELDING FOR A NUCLEAR FUSION DEVICE WITH INERTIAL ELECTROSTATIC CONFINEMENT.....	303
<i>Seung Min Lee, Eduardo Cabral, Helio Yoriyaz</i>	
312-1 - WOMEN IN THE NUCLEAR FIELD PROMOTING LATIN AMERICAN INTEGRATION	307
<i>Nelida Del Mastro, Juana Gervasoni</i>	
313-1 - CALCULATION OF DEFORMED CROSS SECTIONS APPLYING KANIADAKIS DISTRIBUTION USING FRENDDY CODE	311
<i>Joao Maciel, Willian De Abreu, Aquilino Martinez, Alessandro Goncalves</i>	
480-1 - NUCLEAR TECHNIQUES IN THE ANALYSES OF MAGNESIUM-BASED ALLOYS.....	315
<i>Caio Da Silva, Lilian Braguin, Jesualdo Rossi, Marcos Scapin, Isolda Costa, Mitiko Saiki</i>	
390-1 - GAMMA RADIATION EFFECTS IN JATOBA FLOUR.....	319
<i>Marcia Harder, Larissa Harder, Rodrigo Leandro, Paula Arthur, Valter Arthur</i>	

367-1 - LONG TERM COMPARISON BETWEEN REPROCESSED NUCLEAR FUEL CYCLES.....	323
<i>Fidellis Estanislau, Carlos Velasquez, Antonella Costa, Claubia Pereira</i>	
79-3 - SIMULATION OF PSBT EXPERIMENT SUBCHANNELS S1 TO S4 USING A CFD CODE AND COMPARISON WITH THE EXPERIMENTAL RESULTS.....	327
<i>Deiglys Monteiro, Jose Maiorino</i>	
125-2 - ADS LBE SPALLATION TARGET DESIGN: A REVIEW ON GEOMETRICAL INFLUENCES ON NEUTRONIC AND THERMAL BEHAVIOR.....	331
<i>Ivan Umezu, Jose Da Silva, Antonella Costa, Carlos Velasquez, Claubia Pereira</i>	
306-1 - DEVELOPMENT OF A BOOKLET FOR THE USE OF MOBILE X-RAY EQUIPMENT IN INTENSIVE CARE UNITS.....	334
<i>Ana Paula Da Silva, Ricardo Da Silva, Jose Rogero</i>	
363-1 - PROTOCOL FOR TRIAGE DOSE ASSESSMENT IN CASE OF LARGE-SCALE RADIOLOGICAL EMERGENCY: PRELIMINAR RESULTS.....	337
<i>Julianne Lima, Akiria Torreao, Suy Hwang, Mariana Mendes, Fabiana Lima</i>	
206-5 - MUST NUCLEAR ENERGY BE INCREASED ON BRAZILIAN ENERGY MIX IN A POST-COVID-19 WORLD?.....	341
<i>Luiz Ferrari, Jamil Ayoub, Renato Tavares, Andre Silva, Jose Seneda</i>	
250-1 - LONG-TERM INSTITUTIONAL STABILITY FOR RADIOACTIVE WASTE GOVERNANCE	348
<i>Cecilia De Menezes, Roberto Vicente</i>	
261-1 - QUALITY DETERMINATION IN MEDICAL RADIOLOGY	351
<i>Paulo Travassos, Luis Alexandre Magalhaes, Catarine Leitao</i>	
451-1 - REACTORS FUEL ENRICHMENT PROCESS BY RECONVERSION OF UO ₂ TO UF ₆	355
<i>Adalberto Goncalves, Giovanni De Stefani</i>	
493-1 - EVALUATION OF TARIN ON THE RECOVERY OF IRRADIATION INDUCED MEDULLARYHYPOPLASIA IN MICE	359
<i>Anna Correa, Lyris Merida, Patricia Pereira, Vania Paschoalin, Mauricio Vericimo, Marco Frota</i>	
179-1 - IDENTIFICATION OF DESIGN BASIS ACCIDENTS OF A PWR NUCLEAR POWER PLANT USING LSTM AUTOENCODERS	363
<i>Marcelo Dos Santos, Claudio Pereira, Roberto Schirru</i>	
431-1 - DYNAMIC ANALYSIS OF A CLAMPED-CLAMPED PIPE CONVEYING SINGLE-PHASE FLUID.....	367
<i>Valeria Franca, Jian Su</i>	
410-1 - PREPARATION OF IRRADIATED SILVER NANOPARTICLES FOR POLYPROPYLENE NANOCOMPOSITES WITH PINEAPPLE FIBER.....	371
<i>Mariana Zaine, Maria Esther Vecchia, Luiz Komatsu, Washington Oliani, Duclerc Parra</i>	
432-1 - THE RADIOACTIVE PARTICLE TRACKING TECHNIQUE FOR VALIDATION OF CFD SIMULATIONS IN SMR DESIGNS.....	375
<i>Wilson Vieira, Jonathan De Melo, Celso Lapa</i>	

247-1 - DOSE ESTIMATION IN ABDOMINAL CT SCANS FROM DICOM HEADER DATA.....	380
<i>Daiane Souza, Roberto Vicente, Lidia Sa, Edilaine Silva, Marcus Vinicius Oliveira, Maria Eduarda Cidral, Naythyara Camilo, Camila Faria</i>	
290-1 - CLASSIFICATION OF TWO-PHASE FLOW INSTABILITY PHASES USING CONVOLUTIONAL NEURAL NETWORKS.....	384
<i>Sandro Schott, Marcones Da Silva, Roberto De Mesquista</i>	
28-1 - CHARACTERIZATION OF THE GUIGNARD PAINTER'S PALETTE BY XRF AND FTIR	388
<i>Valter Felix, Andre Pimenta, Renato Freitas</i>	
240-1 - CHARACTERIZATION OF CALCIUM BENTONITE TO USE AS A NATURAL BARRIER IN A SURFACE REPOSITORY	391
<i>Thais Teixeira, Cledola Tello</i>	
474-1 - ACCIDENT TOLERANT FUELS BASED ON FECRAL ALLOYS FOR PRESSURIZED WATER REACTOR	395
<i>Isabella Magalhaes, Patricia Reis, Antonella Costa, Clarysson Silva, Claubia Pereira</i>	
227-2 - ANALYSIS OF THE ADVANCES OF RDC 330/19 IN RELATION TO ORDINANCE 453/98 UNDER THE FOCUS OF RADIOLOGICAL PROTECTION.....	398
<i>Fernando Razuck, Gustavo Conceicao</i>	
268-1 - THE NEED FOR THE EVOLUTION OF THE NUCLEAR EMERGENCY RESPONSE PLAN USING MECHANISMS OF LEARNING, INNOVATION AND COMMUNICATION	401
<i>Andre Luiz Lopes Quadros, Alexandre Gromann De Araujo Goes</i>	
399-1 - USE OF PSA DATA FOR THE PERFORMANCE SPECIFICATION OF SAFETY CONTROL SYSTEMS IN NUCLEAR POWER PLANTS	406
<i>Fernando Schweizer, Bruno Warth, Marcos Coelho Maturana Maturana</i>	
300-1 - STUDIES OF HYDROTHERMAL QUARTZ FROM AMETISTA DO SUL TREATED WITH GAMMA RADIATION.....	410
<i>Cyro Enokihara, Rainer Guttler, Paulo Rela</i>	
95-1 - POSITIONING SYSTEM FOR INFINITE SOURCE SIMULATION AND CALIBRATION OF RADIATION DETECTORS.....	415
<i>Diego Salvador, Arno Heeren</i>	
457-1 - AVALIAÇÃO DO REATOR REGENERADOR A SAL FUNDIDO (MSBR) USANDO O CÓDIGO MCNP	419
<i>Gabriela Abreu, Isabella R. Magalhaes, Claubia Pereira, Clarysson A. M. Silva</i>	
14-1 - NEUTRONIC ANALYSIS OF DUAL COOLED ANNULAR FUEL WITH OPENMC MONTE CARLO CODE	423
<i>Artur Souza, Aquilino Martinez, Alessandro Goncalves</i>	
452-1 - DEVELOPMENT OF NEUTRON DETECTOR USING LI-DOPED CSI SCINTILLATOR CRYSTAL	426
<i>Jose Berretta, Maria Costa, Tufic Filho, Carlos Mesquita</i>	
30-1 - CHARACTERIZATION OF SUSPENDED PARTICULATE USING CASCADE IMPACTOR AND X-RAY FLUORESCENCE.....	430
<i>Vinicius Da Costa, Julien Pereira, Marcelino Dos Anjos</i>	

79-2 - SIMULATION OF STEAD-STATE AND TRANSIENT OF SLOW LOSS OF COOLING ACCIDENT OF A CHANNEL IN A PLATE TYPE FUEL ELEMENT REACTOR.....	434
<i>Deiglys Monteiro, Jose Maiorino</i>	
109-1 - NEUTRONIC COMPARISON OF TRADITIONAL FUEL ASSEMBLIES USING UO ₂ (URANIUM DIOXIDE) AND UN (URANIUM MONONITRIDE) FUEL IN THE SCALE 6.0 (NEWT) CODE.....	438
<i>Raphael Henrique Silva</i>	
187-3 - OPTIMIZATION OF A MICROREACTOR CORE'S DIMENSIONS USING METAHEURISTIC METHODS.....	442
<i>Nicolas Santana, Angelo Passaro, Alexandre Caldeira, Lamartine Guimaraes</i>	
169-1 - EFFECTS OF ELECTRON-BEAM AND GAMMA IRRADIATION ON THE ANTIOXIDANT COMPOUNDS OF EDIBLE FLOWERS SPECIES	446
<i>Amanda Koike, Bianca Negrao, Janis Lana, Elias Araujo, Ligia Almeida-Muradian, Anna Lucia Villavicencio</i>	
333-1 - ESTIMATION OF RADIATION DOSE EXPOSURE IN THE TREATMENT OF PROXIMAL FEMUR FRACTURES	450
<i>Lilian Ribeiro, L. T. R. Aricia Cruz, Luiz Matheus Leite, Julio Cezar Filho, Thiago Andrade, Felipe Monte, Viviane Asfora, Vinicius Barros, Helen Khoury</i>	
544-1 - NYSTRÖM METHOD APPLIED TO THE NON-HOMOGENEOUS TRANSPORT EQUATION	453
<i>Luana Lazzari, Esequia Sauter, Fabio De Azevedo</i>	
288-1 - USE OF IONIZING RADIATION AS A TECHNOLOGICAL AND STRUCTURAL IMPROVEMENT IN FRESH AND DEHYDRATED DIOSPYROS KAKI STRONG RAMA.....	457
<i>Janis Lana, Bianca Negrao, Amanda Cristina Koike, Anna Lucia Villavicencio</i>	
139-1 - A DESKTOP APPLICATION FOR AUTOMATIC GAMMA SPECTROSCOPY ANALYSIS WITH DEEP LEARNING.....	461
<i>Andre Gomes Lamas Otero, Juliana Dos Santos Lino, Ademar Jose Potiens Junior, Julio Takehiro Marumo</i>	
110-1 - HARDWARE FOR IIOT IN MISSION-CRITICAL NUCLEAR APPLICATIONS.....	465
<i>Marcos Farias, Guilherme Jaime</i>	
20-1 - METODOLOGIA PARA ELABORAÇÃO DE UM BANCO DE DADOS BASEADO NOS NÚMEROS DE CASOS DE CÂNCER FATAL E NÃO FATAL DA POPULAÇÃO IOE DE INSTALAÇÕES RADIOATIVAS.....	469
<i>Thalia De Moura, Talita Coelho, Gaiane Sabundjian</i>	
271-1 - DEVELOPMENT OF A PHASE SPACE CONVERSION TOOL FOR TOPAS AND MCNP MONTE CARLO CODES.....	473
<i>Isabela Branco, Ana Laura Burin, Paulo De Tarso Siqueira, Julian Marco Shorto, Helio Yoriyaz</i>	
152-1 - EXTERNAL EVENTS PSA - REQUIREMENTS APPLICABLE TO NEW NUCLEAR INSTALLATIONS PROJECTS.....	477
<i>Thiago Padilha, Marcos Maturana, Miguel Mattar Neto, Patricia De Oliveira</i>	
189-1 - DEVELOPMENT OF A 3D PRINTED ANTHROPOMORPHIC SKULL PHANTOM FOR CLINICAL PHOTONS BEAM DOSIMETRY	481
<i>Shirlane Almeida</i>	

187-1 - OPTIMIZATION OF A MICROREACTOR CORE'S DIMENSIONS USING METAHEURISTIC METHODS.....	483
<i>Nicolas Santana, Angelo Passaro, Alexandre Caldeira, Lamartine Guimaraes</i>	
314-1 - COMPARISON OF DATA IMPUTATION USING THE METHODS OF FUZZY LOGIC, MEAN AND AUTOENCODER NEURAL NETWORK.....	487
<i>Andre Nogueira, Casimiro Munita</i>	
222-1 - EFFECTS OF GAMMA RAY IN CONCRETE AFTER LOW DOSE.....	491
<i>Luan Bastos, Olga De Araujo, Tamara Teixeira, Sebastiao Calixto, Alessandra Machado, Renata Funcke, Marcelo Goncalves, Ricardo Lopes, Davi Oliveira</i>	
16-1 - DURABILITY STUDY OF CONCRETE CONTAINER.....	495
<i>Isabella Gomes, Cledola Tello</i>	
378-1 - PRELIMINARY STUDY USING EISENIA FETIDA AS URANIUM (U) BIOMONITOR IN INDUSTRIAL LANDFILL RESIDUE, CULTIVATED IN VITRO	499
<i>Maria Tessari-Zampieri, Jorge Sarkis, Marcelo Dias, Marcos Hortellani, Cristina Barbieri, Marcos Scapin</i>	
435-1 - THERMAL STUDY OF THE MODULAR HIGH-TEMPERATURE GAS-COOLED REACTOR	503
<i>Mario Ramos, Antonella Costa, Vitor Silva, Claubia Pereira, Maria Veloso</i>	
150-1 - THE FECRAL CLADDING ASSESSMENT UNDER ACCIDENT CONDITION USING TRANSURANUS FUEL PERFORMANCE CODE	507
<i>Alfredo Abe, Caio Melo, Tamirys Santos, Claudia Giovedi</i>	
79-1 - MOLTEN SALT REACTOR THERMAL-FLUID DYNAMICS EVALUATION USING A CFD CODE FOR A THEORETICAL POWER DENSITY.....	511
<i>Deiglys Monteiro, Leticia Goncalvez, Jose Maiorino, Pedro Rossi</i>	
79-5 - EVALUATION OF THE DECOMMISSIONING FUND FOR A NUCLEAR POWER PLANT IN BRAZIL.....	515
<i>Deiglys Monteiro, Joao Moreira</i>	
227-3 - AN ANALYSIS OF THE DISCIPLINES FOCUSED ON RADIATION PROTECTION OF THE RADIOLOGY TECHNOLOGIST COURSES IN ACCORDANCE WITH 7.01 STANDARD FOR THE VERTIFICATION OF RADIATION PROTECTION SUPERVISOR QUALIFICATION.....	519
<i>Fernando Razuck, Stephanie Silva, Tatiane Almeida</i>	
128-1 - EFFECT OF MOUNTING ORIENTATION ON TESTING EQUIPMENT ON THE ELASTIC COMPLIANCE OF CLAMPED SE(T) SPECIMENS	522
<i>Leonardo Ferreira De Andrade, Gustavo Donato, Miguel Neto</i>	
27-1 - IEAR1 RENEWED PRIMARY SYSTEM PUMP B1B NOZZLES STRESS ANALYSIS	526
<i>Altair Faloppa, Gerson Fainer, Carolina Figueiredo, Daniel Carvalho, Miguel Mattar Neto</i>	
58-1 - ESTUDO DA EFICIÊNCIA DE DETECÇÃO DE UM DETECTOR DE NAI(TL) PARA DIFERENTES GEOMETRIAS DE FONTES RADIOATIVAS UTILIZANDO O CÓDIGO MCNP6.....	530
<i>Alessandra Dos Santos, Ross Dam, William Salgado, Cesar Salgado</i>	
99-2 - ADJUST OF CHEST CT SCAN PROTOCOLS USING CHILD PHANTOMS	534
<i>Fernanda Santos, Arnaldo Mourao</i>	

522-1 - AN OVERVIEW OF MOLTEN SALT REACTORS AND PRELIMINARY CALCULATIONS	538
<i>Leticia Goncalves, Jose Maiorino, Deiglys Monteiro, Pedro Rossi</i>	
276-1 - REVIEW OF REGULATORY REQUIREMENTS FOR IMPLEMENTING AN AGING MANAGEMENT SYSTEM FOR THE CDTN TRIGA IPR-R1 REACTOR.....	542
<i>Ana Rosa Baliza Maia, Amir Mesquita, Youssef Morghi</i>	
173-2 - GADD45A GENE EXPRESSION APPLIED TO BIODOSIMETRY FOR RADIOLOGICAL ACCIDENTS.....	547
<i>Amanda Franca</i>	
171-1 - ZONAL REFINING AND BRIDGMAN TECHNIQUE FOR CSI:TL SCINTILLATION CRYSTAL GROWTH	551
<i>Karoline Suzart, Maria Conceicao Pereira, Margarida Hamada, Carlos Henrique Mesquita</i>	
304-1 - COMPARATIVE ANALYSIS BETWEEN RADIOACTIVE SEED LOCALIZATION AND WIRE-GUIDED FOR NON-PALPABLE BREAST CANCER SURGERY	555
<i>Hortencia Ferreira, Carlos Zeituni, Hamona Santos, Wilmer Rosero, Guilherme Alcantara, Maria Rostelato</i>	
230-1 - INFLUÊNCIA DE HIDROCARBONETOS NA DETERMINAÇÃO DO COEFICIENTE DE ATENUAÇÃO MÁSSICO UTILIZANDO DENSITOMETRIA GAMA E CÓDIGO MCNPX.....	558
<i>Luiz Otavio Costa Mello, Roos Sophia Freitas Dam, William Salgado, Cesar Salgado, Julio Cezar Suita</i>	
234-1 - FRACTIONATION LITHIUM ISOTOPES BY INORGANIC ION EXCHANGE	562
<i>Joao Ferreira, Jose Seneda, Vanderlei Bergamaschi, Maise Gimenez, Oscar Bustillos</i>	
163-1 - SCREENING AND SELECTION OF STRUCTURES, SYSTEMS AND COMPONENTS TO BE CONSIDERED IN AGEING MANAGEMENT AND PERIODIC SAFETY REVIEW OF THE TRIGA IPR-R1 REACTOR	565
<i>Keferson Carvalho, Graiciany Barros, Emanuela Lemos, Vanderley Vasconcelos, Andre Santos</i>	
334-1 - DOSIMETRIC EVALUATION OF I-125 AND PD-103 EYE PLAQUES WITH THE EGS-BRACHY CODE.....	569
<i>Matheus Ribeiro, Tarcisio Campos</i>	
430-1 - DEVELOPMENT OF A COMPUTER CODE PADPLAC-UMO FOR PERFORMANCE ANALYSIS OF MONOLITHIC URANIUM MOLYBDENUM FUEL PLATE.....	573
<i>Regis Reis, Antonio Silva</i>	
386-1 - IMPROVEMENT STUDY FOR NEUTRON SHIELDING OF THE IODINE-123 PRODUCTION LINE FOR THE CV-28 CYCLOTRON.....	577
<i>Bianca Da Cruz, Cesar Salgado, Julio Suita</i>	
381-1 - PASSIVE AUTOCATALYTIC RECOMBINER PERFORMANCE ASSESSMENT USING COCOSYS CODE.....	581
<i>Hugo Galvao</i>	
54-1 - AN ANALYSIS OF THE INFORMATION FLOW FROM DISUSED SEALED SOURCES IN RADIOACTIVE WASTE MANAGEMENT	585
<i>Italo Alves, Renato Tarciso Sousa, Roberto Vicente</i>	

442-1 - ELECTRONIC AND NUCLEAR INTERACTIONS INVOLVED IN TISSUE ON PROTON RADIOTHERAPY	588
<i>Lais Jesus, Tarcisio Campos, Bruno Mendes</i>	
488-1 - MEASUREMENT OF THE INSENSITIVE SURFACE LAYER THICKNESS OF A PIN PHOTODIODE BASED ON ALPHA-PARTICLE SPECTROMETRY	592
<i>Josemary Goncalves, Kelly Pascoalino, Fabio De Camargo, Carmen Bueno</i>	
222-2 - EVALUATION OF MASS ATTENUATION COEFFICIENT OF CONCRETE SAMPLE FOR DIFFERENT TRAITS.....	596
<i>Luan Bastos, Tamara Teixeira, Hamilton Gama Filho, Sebastiao Calixto, Marcelo Goncalves, Marcelino Dos Anjos, Ricardo Lopes, Davi Oliveira</i>	
460-1 - DEVELOPMENT OF EUROPIUM-DOPED ULTRASMALL LUMINESCENT TIN OXIDE NANOPARTICLES FOR APPLICATIONS IN NUCLEAR MEDICINE.....	600
<i>Francine Salvador, Leonardo Francisco, Hermi Brito, Maria Felinto</i>	
456-1 - GEM-BASED THERMAL NEUTRON DETECTOR PROTOTYPE USING BORON-CARBIDE CONVERTER.....	604
<i>Lucas Filho, Renan Dos Santos, Marco Bregant, Marcelo Munhoz, Francisco Souza, Mauricio Moralles, Hugo Da Luz</i>	
18-1 - EVALUATION OF AGGREGATES INFLUENCE ON REINFORCED CONCRETE REBAR DETECTION BY COMPTON SCATTERING	609
<i>Alexandre Iori, Emerson Boldo</i>	
251-1 - DESENVOLVIMENTO DE UM MODELO DE DINÂMICA E FLUIDOS COMPUTACIONAL PARA A MODELAGEM DO CROSS-VESSEL DE UM REATOR NUCLEAR DE GERAÇÃO IV.	613
<i>Andrew Ribeiro</i>	
99-1 - COMPARATIVE STUDY OF PROCEDURES TO REDUCE ORGAN DOSE IN NECK CT SCANS USING BISMUTH SHIELDING.....	617
<i>Fernanda Santos, Arnaldo Mourao</i>	
31-4 - ADVANCED NUCLEAR FUELS BASED ON THORIUM MIXED OXIDES	621
<i>Daniel De Souza Gomes Gomes</i>	
69-1 - LIMITATIONS OF THIN LAYER CHROMATOGRAPHY (TLC) IN THE EVALUATION OF RADIOLABELING OF NEW PEPTIDECOMPOUND.....	625
<i>Raquel De Oliveira</i>	
146-1 - DETERMINATION OF ²³⁸ U AND ²³² Th IN SOIL SAMPLES COLLECTED NEAR THE AMAZON TALL TOWER OBSERVATORY, BRAZILIAN AMAZON	630
<i>Bruno Tappiz, Paulo Silva, Elias Carvalho, Davi Souza, Santiago Botia, Horacio Linhares, Caroline Ostermann, Oscar Bustillos</i>	
237-1 - ESTUDO E DESENVOLVIMENTO DE TÉCNICA NUCLEAR APLICADA PARA IDENTIFICAÇÃO DE DIFERENTES COMPONENTES DA ÁGUA DO MAR.....	635
<i>Caroline Carvalho, Lucas Silva, Caroline Barbosa, Cesar Salgado, Cesar Raitz</i>	
416-1 - ¹⁰⁸ Mg ACTIVITY CONCENTRATION DETERMINATION IN LOW AND MEDIUM LEVEL RADIOACTIVE WASTE FROM ANGRA NUCLEAR POWER PLANT.	639
<i>Matheus Angelini</i>	

217-1 - OTIMIZAÇÃO DE PARÂMETROS DE UMA GEOMETRIA DE MEDIÇÃO PARA CÁLCULO DE VELOCIDADE EM ESCOAMENTO MONOFÁSICO USANDO RASTREAMENTO DE PARTÍCULA RADIOATIVA	643
<i>Juliana Luzie, Roos Sophia Dam, Julio Suíta, William Salgado, Cesar Salgado</i>	
130-2 - ANALYSIS OF THE REGULATORY FRAMEWORK IN BRAZIL FOR THE MANAGEMENT OF NORM WASTE FROM OIL AND GAS INDUSTRY	647
<i>Valeria Cuccia, Jose Godoy, Rogerio Mourao, Manoel Ramos, Gisele Tonietto</i>	
96-2 - COUNTING EFFICIENCY IN GAMMA-RAY SPECTROMETRY WITH DIFFERENT VOLUMES FOR THE SAME GEOMETRY	651
<i>Marcelo Nisti, Marcelo Maduar, Sandra Damatto, Marcos Alencar</i>	
588-1 - A SIMPLE MODEL OF THE ACCUMULATION OF TRAPPED IONIZATION CHARGES FOR RADFET DOSIMETERS	655
<i>Eduardo Mendonca</i>	
398-1 - ON THE COMMERCIAL FEASIBILITY OF DECOMMISSIONING A NUCLEAR POWER PLANT SHIP.....	659
<i>Adalberto Sobreiro</i>	
110-2 - SYSTEM FOR MONITORING CYCLOTRON CV-28 SAFETY PARAMETERS	663
<i>Marcos Farias, Guilherme Jaime, Fabio De Lacerda, Silas Augusto</i>	
44-1 - COPPER WATER HEAT PIPE APPLIED FOR STIRLING ENGINE.....	667
<i>Ana Santos, Valeria Leite, Lamartine Guimaraes, Lucia Delfini</i>	
220-1 - MÉTODOS PARA TRATAMENTO DE REJEITOS NORM DA INDÚSTRIA DE ÓLEO E GÁS	671
<i>Gabriel Alcantara, Valeria Cuccia</i>	
323-1 - FUSION-FISSION HYBRID SYSTEM – NEUTRON FLUX ANALYSIS AFTER DIVERTOR INSERTION.....	675
<i>Natalia Oliveira, Carlos Velasquez, Claubia Pereira</i>	
218-1 - PRODUCTION OF ^{114M} INDIUM IN TRIGA MARK IPR-R1 REACTOR AND EVALUATION FOR RADIONUCLIDE THERAPY APPLICATION	679
<i>Beatriz Cancelier Ribeiro</i>	
187-2 - APPLICATION OF NEUTRON TRANSPORT AND DIFFUSION THEORIES TO HOMOGENEOUS MEDIA	683
<i>Nicolas Santana, Lamartine Guimaraes, Alexandre Caldeira</i>	
335-1 - METHODOLOGY FOR IDENTIFICATION OF PLASTIC FRAGMENTS (PET) IN AQUEOUS MEDIA THROUGH COMPUTERIZED MICROTOMOGRAPHY	687
<i>Renata Funcke, L. Bastos, O. De Araujo, C. M. Santos, A. Machado, D. Oliveira, R. Lopes</i>	
463-1 - ABOUT MEASUREMENTS OF NUCLEAR REACTOR'S ROD WORTH WITH THE ROD DROP TECHNIQUE.....	691
<i>Guilherme De Carvalho, Giovanni Stefani</i>	
436-1 - EVALUATION OF PERFORATED PLATES MANUFACTURING WITH 3D PRINTING PROCESS	695
<i>Wallen De Souza</i>	

258-1 - PIGMENTS AND PREPARATION LAYERS CHARACTERIZATION OF A SAINT JOHN THE EVANGELIST PAINTING USING X-RAY FLUORESCENCE TECHNIQUE AND RAMAN SPECTROSCOPY	699
<i>Francis Anna Sanches, Raysa Nardes, Ramon Dos Santos, Carlos Eduardo Netto, Renato Freitas, Davi Oliveira, Ricardo Lopes, Catarine Leitao, Marcelino Dos Anjos</i>	

105-1 - PROPOSAL OF BRAZILIAN NATIONAL PROGRAM FOR QUALITY CONTROL IN THE SMALL ANIMAL PET SCANNERS	703
<i>Rodrigo Gontijo, Andrea Ferreira, Juliana Silva, Marcelo Mamede</i>	

428-1 - MACROSCOPIC CROSS SECTION GENERATION USING WIMS-ANL/ PARCS 2.4 CODES —COMPARISON WITH BEAVRS-PWR.....	707
<i>Wilmer Coloma, Patricia A. Reis, Clarysson Da Silva, Claubia Pereira</i>	

VOLUME 2

391-1 - QUANTIFICATION OF ACTIVE PHARMACEUTICAL INGREDIENT IN SAH-TEC RADIOPHARMACEUTICAL BY UV-VISIBLE SPECTROPHOTOMETRY	712
<i>Joel Santos, Margareth Matsuda</i>	

445-1 - EVALUATION OF RECOVERY YIELDS OF ⁶⁰ CO AND ¹³⁷ CS IN EXTRACTION PROCEDURES.....	715
<i>Matheus Almeida, Rafaella Ayllon, Matheus Agelini, Roberto Vicente, Paulo Da Silva</i>	

136-1 - NEUTRONIC SIMULATION OF A SMR USING OPENMC CODE.....	719
<i>Marco Lima</i>	

201-1 - CONSTRUCTION OF RADON EXPOSURE MAPS ON BEACHES IN HBRA AREAS: A PROPOSITION	723
<i>Ricardo Garcez, Jardel Thalhoffer, Luciana Carvalheira, Rogerio Nunes, Francisco Ferreira, Alessandro Domingues</i>	

216-1 - THE INFLUENCE OF THE AGGREGATES ON THE CONCRETE MECHANICAL PROPERTIES	727
<i>Gabriella Rodrigues Rocha Müller, Cledola Tello</i>	

219-1 - ESTUDO DE VIABILIDADE PARA PRODUÇÃO DE UMA FONTE RADIOATIVA DE BR 82 PARA MEDIDA DE VELOCIDADE SUPERFICIAL EM SISTEMAS MONOFÁSICOS	731
<i>Lucas Silva, Caroline Carvalho, Caroline Barbosa, Cesar Salgado, Cesar Raitz</i>	

43-1 - CHARACTERIZATION AND CALIBRATION OF THERMOLUMINESCENT DOSIMETERS OF LiF:Mg, Ti IN THE QUANTITY H _p (0.07)	735
<i>Gabriel Nascimento, Vicente Campos, Leticia Campos</i>	

116-1 - TRANSFER VALUES OF TH AND U IN A CONTROLLED STUDY USING A HYDROPONIC SYSTEM.....	738
<i>Rodrigo Moura, Maria Angela Menezes</i>	

208-1 - NEW TOOLS OF PUBLIC COMMUNICATION ON RADIOACTIVE WASTE DISPOSAL PROJECTS.....	742
<i>Rafaela Rodrigues</i>	

91-1 - DEVELOPMENT OF A PROTOTYPE FOR AN AUTONOMOUS ENVIRONMENTAL GAMMA RADIATION MONITOR.....	746
<i>Cesar Raitz, Marcos Farias, Fabio De Lacerda, Paulo De Carvalho</i>	

158-1 - REUSE OF BRAZILIAN MILL TAILINGS RADIONUCLIDES AS POWER SOURCES	750
<i>Julio Oliveira, Roberto Vicente</i>	
151-1 - ESTUDO NEUTRÔNICO DE MATERIAIS ABSORVEDORES DE NÊUTRONS NO REATOR AVANÇADO CANDU	755
<i>Vinicius Costa, Michel De Almeida, Clarysson Silva</i>	
110-3 - A NEW DOSE CALIBRATOR FOR NUCLEAR MEDICINE LABORATORIES.....	759
<i>Marcos Farias, Larissa Farias, Roberto Claudio Nunes</i>	
364-1 - MONTE CARLO SIMULATION OF DAMAGE IN DNA PRODUCED BY DIRECT RADIATION IMPACT.....	763
<i>Jonathan Ternes, Beatriz Moreira Magiore, Victoria Raposo Da Silva, Joel Mesa Hormaza</i>	
493-2 - CALCULATION OF EQUIVALENT DOSE FOR PHOTONS RESULTING FROM SKYSHINE PRODUTION ACCORDING TO NCRP151	766
<i>Marco Frota, Alphonse Kelecom</i>	
340-1 - METAL, TRACE AND MAJOR ELEMENTS ASSESSMENT IN A SEDIMENT PROFILE FROM LOBO/BROA RESERVOIR BY INAA, SÃO PAULO STATE, BY INAA	770
<i>Deborah Ines Favaro</i>	
105-3 - DIAGNOSTIC IMAGING TECHNOLOGIES APPLIED TO THE COVID-19 SCENARIO	775
<i>Rodrigo Gontijo, Guilherm Souza, Joao Barbosa, Andrea Ferreira</i>	
360-2 - CHITOSAN COATED MAGNETITE NANOPARTICLES APPLIED IN EFFLUENT TREATMENT FOR URANIUM REMOVAL.....	778
<i>Debora Pirani, Mainara Faustino, Helio Furusawa, Walter Pedreira Filho, Marycel Cotrim</i>	
344-1 - INVESTIGATION OF HYPERFINE INTERACTIONS OF MULTIFERROIC OXIDES $\text{Bi}_{0.85}\text{La}_{0.15}\text{FeO}_3$ THROUGH PERTURBED ANGULAR CORRELATION SPECTROSCOPY.....	782
<i>Arnaldo Miranda-Filho</i>	
45-1 - RADON AND RADIUM ACTIVITY MEASUREMENTS IN ARTESIAN WELL WATERS FROM THE CARAMBEÍ RURAL Area: OF PARANÁ STATE, BRAZIL	786
<i>Sergei Paschuk, Monique De Oliveira, Janine Correa, Silvia De Palma, Aline Martin, Francesco Antonelli, Oderson De Souza Filho</i>	
124-2 - LICENSING APPROACH FOR NUCLEAR-POWERED SUBMARINES LAND SUPPORT FACILITIES	790
<i>Douglas Baroni, Sad Borsoi, Miguel Neto, Patricia De Oliveira, Marcos Maturana</i>	
255-1 - HEALTH EVALUATION OF TRIGA REACTOR IPR-R1 OPERATORS ACCORDING TO CNEN NE 6.01 STANDARD.....	794
<i>Izabella Machado, Daniel Almeida Magalhaes Campolina</i>	
134-1 - DETERMINATION OF NATURAL RADIONUCLIDES (RA-226, PB-210, PO-210, RA-228 AND K-40) AND CS-137 IN FISH CONSUMED IN THE CITY OF SÃO PAULO.....	798
<i>Andressa Nery, Marcelo Nisti, Catia Saueia, Barbara Mazzilli</i>	
231-1 - COMPARISON OF UNCERTAINTY PROPAGATION METHODS IN THE SCOPE OF PROBABILISTIC RISK ASSESSMENT.....	802
<i>Vanderley Vasconcelos, Graiciany Barros, Luiz Da Silva, Cassia Martins, Keferson Carvalho</i>	

360-1 - ION EXCHANGE RESINS APPLIED IN THE REMOVAL OF URANIUM FROM CONTAMINATED EFFLUENTS.....	806
<i>Debora Pirani, Mainara Faustino, Helio Furusawa, Walter Pedreira Filho, Marycel Cotrim</i>	
233-1 - ANÁLISE ESTATÍSTICA MULTIVARIADA DE DADOS DE XRF OBTIDOS DE MOEDAS HISTÓRICAS UTILIZANDO PYTHON	810
<i>Barbara Goncalves, Mariane Da Silva, Matheus Oliveira, Miguel Oliveira, Renato De Freitas</i>	
438-1 - STEADY STATE STUDIES ON ACCIDENT TOLERANT FUELS FOR PRESSURIZED WATER REACTOR.....	814
<i>Patricia Reis</i>	
450-1 - DETERMINATION OF SCALE FACTOR FOR NI-59 AND AG-108M IN ION EXCHANGE RESIN FROM ANGRA 1	818
<i>Ibere Ribeiro Jr., Frederico Genezini, Paulo Da Silva, Matheus Angelini, Lucas Junqueira, Guilherme Zahn</i>	
41-1 - COMPARATIVE STUDY OF MICROCT IMAGES FOR EX VIVO HUMAN SPECIMENS	822
<i>Adriana Moreira</i>	
31-3 - ANALYSIS OF CHROMIUM OXIDE DOPED PELLET FOR LWRS USING FRAPCON CODE.....	826
<i>Daniel De Souza Gomes Gomes</i>	
424-1 - SENSITIVITY ANALYSIS OF A RESEARCH REACTOR NODALIZATION MODELED IN THE RELAP5 CODE	830
<i>Maria Elisa Magalhaes, Antonella Costa</i>	
78-1 - ONE-GROUP CROSS SECTIONS FOR ^{230}Th ^{233}U ^{238}U ^{235}U AND ^{239}Pu ISOTOPES AVERAGED OVER OPAL AND TERRA NEUTRON SPECTRA	834
<i>Renato Silva, Lamartine Guimaraes, Alexandre Caldeira</i>	
19-1 - COMPARISON OF 18F-FDG AND 68-PSMA-11 IN PET FOR PROSTATE CANCER DIAGNOSIS	838
<i>Natalia Fulle, Gaiane Sabundjian</i>	
227-1 -PROPOSAL FOR A PROFESSIONAL QUALIFICATION COURSE IN RADIATION PROTECTION FOR OBTAINING THE REGISTRATION OF INDIVIDUALS TO WORK IN TEACHING AND RESEARCH LABORATORIES	842
<i>Fernando Razuck, Jorge Nascimento</i>	
281-2 - SMALL PUNCH TEST DEVICES IN DEVELOPMENT AT IPEN AIMING TO PERFORM TESTS IN RMB HOT CELLS	845
<i>Carlos A. Miranda, Jose Lima, Altair Faloppa, Arnaldo Andrade, Miguel Mattar Neto, Mariano Castagnet, Raquel Lobo, Leticia Pereira</i>	
24-1 - PUBLIC AWARENESS IN SCIENCE AND TECHNOLOGY USING LUDIC LEARNING TOOLS: AN APPLICATION FOR NUCLEAR ENERGY AND ITS ROLE IN CLIMATE CHANGE.....	849
<i>Andre Vidal Soares, Marta Maximo Pereira, Luana Linda Da Silva</i>	
518-1 - MECHANICAL AND NUCLEAR PROPERTIES OF SODA-LIME GLASSES CONTAINING BORON AND NIOBIA.....	853
<i>Danilo Silva</i>	

195-1 - CONTROL AND DATA ACQUISITION SOFTWARE OF A MECHANISM FOR MOVING A NUCLEAR FUEL IRRADIATION CAPSULE: USABILITY ASSESSMENT	857
<i>Eduardo Stehling Saraiva, Vanderley De Vasconcelos, Daniel Magalhaes Campolina</i>	
99-3 - DOSIMETRY IN CR MAMMOGRAPHY USING BREAST PHANTOM	861
<i>Fernanda Santos, Mabel Flores, Arnaldo Mourao</i>	
192-1 - PROPOSAL FOR A BENCHTOP CHAMBER FOR SARS-COV-2 INACTIVATION BY ULTRAVIOLET-C IRRADIATION	864
<i>Roberta Manon De Paula Sales Borges, Hamilton Santos Gama Filho, Marcelino Dos Anjos, Luis Cristovao Porto, Catarine Gondim Leitao Canellas</i>	
310-1 - CREEP BEHAVIOR OF GLASS FIBER/EPOXI COMPOSITE CYLINDER SUBJECTED TO HYDROSTATIC PRESSURE	869
<i>Vinicius Oliveira, Leonardo Silva, Gerson Marinucci</i>	
281-4 - NUMERICAL ANALYSIS OF THE SMALL PUNCH TEST FOR DIFFERENT THEORETICAL MATERIALS	873
<i>Leticia Pereira, Miguel Mattar Neto, Carlos A. Miranda, Jose Lima, Altair Faloppa, Arnaldo Andrade, Mariano Castagnet, Raquel Lobo</i>	
42-1 - DETERMINATION OF METALS IN ELECTRONIC CIGARETTE REFILL LIQUIDS USING TOTAL REFLECTION X-RAY FLUORESCENCE AND PCA ANALYSIS	877
<i>Gabriel Faria, Tiago Galvao, Fabio Melquiades, Paulo Parreira</i>	
281-3 - SMALL PUNCH TESTS WITH A RECENTLY DEVELOPED DEVICE IN IPEN: FIRST RESULTS AND FUTURE PROGRAM AT LOW TEMPERATURES	881
<i>Carlos A. Miranda, Arnaldo Andrade, Mariano Castagnet, Raquel Lobo, Altair Faloppa, Miguel Mattar Neto, Jose Rodrigues, Leticia Pereira</i>	
275-1 - HYBRID EMERGENCY POWER SYSTEMS FOR RESEARCH NUCLEAR REACTORS	885
<i>Marcio Belloni, Thadeu Conti</i>	
339-1 - DEVELOPMENT OF AN ADDITIONAL FILTRATION SYSTEM BY 3D PRINTING FOR THE IMPLEMENTATION OF NEW X-RAY BEAM QUALITIES USED IN DIAGNOSTIC RADIOLOGY	889
<i>Jose Junior, Maria Da Penha Albuquerque Potiens, Orlando Rodrigues Junior</i>	
322-2 - ETHICAL AND ENVIRONMENTAL PRINCIPLES OF RADIOACTIVE WASTE MANAGEMENT	893
<i>Naline Silva, Andreza Franca, Italo Alves, Monise Andrade, Roberto Vicente</i>	
330-2 - EVALUATION OF TH ₀ U ₀ ₂ FUEL BEHAVIOR AT DIFFERENT TEMPERATURES IN ADS	897
<i>Jose Silva, Natalia Peixoto Lelis, Carlos Velasquez, Claubia Bezerra Lima</i>	
513-1 - STUDY OF THE LOCATION OF MAXIMUM POINT BREAST DENSITY AT DIFFERENT THICKNESSES OF THE COMPRESSED BREAST	901
<i>Camila Engler, Daniele Souza, Maria Nogueira</i>	
93-2 - A RELEVÂNCIA DO CONHECIMENTO DE PROTOCOLOS DE PREPARO DE EXAMES CONTRASTADOS PARA A DIMINUIÇÃO DE EXPOSIÇÕES NA RADIOGRAFIA MÉDICA	904
<i>Ana Maria Da Silva Mendes, Luciana Batista Nogueira, Adriana De Souza Medeiros Batista, Talita De Oliveira Santos, Crissia Carem Paiva Fontainha</i>	

437-1 - DOPPLER EFFECT ANALYSIS OF A FAST NEUTRON REACTOR FOR A FUSION-FISSION SYSTEM	908
<i>Renato Vinicius Marques, Carlos Eduardo Velasquez, Claubia Pereira</i>	
387-1 - INFLUENCE OF EROSION ON THE MECHANICAL PROPERTIES OF INCONEL 718 JOINTS BRAZED WITH BFM NICRP	912
<i>Renato Rezende, Mauricio Neves</i>	
22-1 - THE EFFECT OF MASS SCALING AND SPEED INCREASE IN EXPLICIT DYNAMIC SIMULATIONS USING TENSILE TEST	916
<i>Leticia Pereira, Gustavo Donato, Miguel Mattar Neto</i>	
101-4 - ANALYSIS OF GEOCHEMICAL PROCESS SIMULATION DATA RELATED TO MINERALOGICAL CONTROL ON MOBILITY OF OLIGOELEMENTS IN URANIUM MINE.....	920
<i>Mariana Reis, Ricardo Sousa, Adriana Batista</i>	
51-1 - EXTENDING THE NODAL EXPANSION METHOD BASIS FUNCTIONS.....	924
<i>Sergio Paixao, Fernando Da Silva</i>	
225-1 - PURIFICATION OF LITHIUM HYDROXIDE BY ION-EXCHANGE PROCESSES FOR APPLICATION IN NUCLEAR REACTORS	928
<i>Maise Gimenez, Juliana Otomo, Joao Ferreira, Vanderlei Bergamaschi, Oscar Bustillos</i>	
205-1 - DECISION SUPPORT METHOD IN THE ASSESSMENT OF NUCLEAR KNOWLEDGE MANAGEMENT USING FUZZY LOGIC.....	932
<i>Jaqueline Souza, Claudio Henrique Grecco, Paulo Victor Carvalho, Carlos Cosenza</i>	
443-1 - CONCENTRATIONS OF TRACE ELEMENTS IN GEOPHAGUS BRASILIENSIS FISH FROM THE BILLINGS RESERVOIR - RIACHO GRANDE, SP/ BRAZIL	936
<i>Daniele Reis, Edson Moreira</i>	
512-2 - APPLICATION OF THE GRS CORE SIMULATOR KMACS ON ACCIDENT TOLERANT FUELS.....	940
<i>Thomas Eisenstecken, Alexander Aures, Romain Henry, Robert Kilger</i>	
198-1 - SEGURANÇA NA GESTÃO DE FONTES RADIOATIVAS SELADAS EM DESUSO	944
<i>Heloisa Reis, Roberto Vicente</i>	
459-1 - A PWR FUEL ASSEMBLY ANALYSED WITH SERPENT, KENO VI, MCNPX AND NEWT CODES	946
<i>Victor Castro</i>	
329-1 - SPATIAL ASSESSMENT OF GROSS ALPHA, BETA, AND GAMMA RADIATION AS A PRE-OPERATIONAL ENVIRONMENTAL BASELINE FOR THE UNCONVENTIONAL HYDROCARBON INDUSTRY: THE CASE OF SÃO FRANCISCO BASIN - BRAZIL	950
<i>Gustavo Filemon Lima, Danilo Vasconcelos, Carlos Alberto De Carvalho Filho, Rubens Moreira</i>	
105-2 - CURRENT BRAZILIAN SCENARIO ABOUT QUALITY ASSURANCE IN PRECLINICAL PET IMAGING SYSTEMS	954
<i>Rodrigo Gontijo, Andrea Ferreira, Guilherme Souza, Joao Barbosa, Marcelo Mamede</i>	
103-1 - FUNCTIONAL ANALYSIS, DIVERSITY AND DEFENSE-IN-DEPTH PRINCIPLE APPLIED FOR INSTRUMENTATION AND CONTROL ARCHITECTURE IN ACCORDANCE WITH U.S.NRC	958
<i>Claudio Santos, Luciano Freire, Delvonei De Andrade</i>	

409-1 - MODELLING AND SIMULATION OF DCMD SHELL AND HOLLOW FIBRE MODULE FOR SEAWATER DESALINATION	962
<i>Paulo Augusto De Sampaio</i>	
166-2 - COMPARISON BETWEEN TWO THERMOCHEMICAL HYDROGEN PRODUCTION METHODS AND SEAWATER DESALINATION COUPLED TO THE HTR-PM NUCLEAR REACTOR	966
<i>Daniel Gonzalez Rodriguez, Fernando De Andrade Lima, Carlos Brayner De Oliveira Lira</i>	
60-1 - GAMMA RADIATION PROCESSING FOR DISINFECTION OF A 19TH CENTURY PHOTO ALBUM	970
<i>Maria Luiza Nagai, Paulo Santos, Isabela Parron, Francis Lee, Pablo Vasquez</i>	
433-1 - DOSE PROFILE EVALUATION FOR TWO FIELDS OF A LINAC 6 MV BEAM USING A SOLID WATER PHANTOM	974
<i>Caio Fernando Portela</i>	
434-1 - ON CANDU REACTORS: HISTORY, FEATURES AND ITS USE AROUND THE WORLD	978
<i>Igor Vitorino, Giovanni De Stefani</i>	
301-1 - ASSESSMENT OF DOSE FOR NORM OIL SLUDGE DISPOSED OF IN LANDFILLS.....	982
<i>Natalie Rolindo, Ana Paula Tessaro, Roberto Vicente</i>	
129-1 - EVALUATION OF A DYNAMIC LEACHING TECHNIQUE AND FACTORIAL DESING TO OPTIMIZE THE RECOVERY OF LEACHED URANIUM ORE WASTE FROM LAGOA REAL - BA.....	985
<i>Natalia Fonseca</i>	
79-4 - HEAT PIPE REACTORS: A REVIEW OF HEAT PIPES IN NUCLEAR REACTORS AND THE ROLE FOR SMALL MODULAR REACTORS AND TO SPACE EXPLORATION	989
<i>Deiglys Monteiro, Joao Moreira</i>	
374-1 - GRAIN REFINEMENT THROUGH SEVERE PLASTIC DEFORMATION USING MULTIAXIAL FORGING	993
<i>Rejane Silva, Jonnas Peressinotto, Jefferson Vilela</i>	
449-1 - GENE EXPRESSION MEASUREMENT OF CDKN1A IN HUMAN LYMPHOCYTES GAMMA-IRRADIATED.....	997
<i>Fernanda Moraes, Amanda Franca, Houemakou Djidonou, Suy Hwang, Mariana Esposito, Fabiana Lima</i>	
186-2 - INTERAÇÃO DA RADIAÇÃO GAMA COMO FERRAMENTA QUIMIOMÉTRICA PARA AVALIAR INTEGRIDADE DE PROTETORES RESPIRATÓRIOS PFF2 SUJEITOS À DESCONTAMINAÇÃO MICROBIOLÓGICA.....	1000
<i>Douglas Ferreira, Thiago Santos, Suy Hwang, Giselda Neves, Elvis Franca</i>	
509-1 - IMAGE CAPTIONS GENERATION FOR NON-PROLIFERATION CONTROL WITH ARTIFICIAL INTELLIGENCE	1004
<i>Andre Luis Marques</i>	
280-1 - ONLINE MONITORING SYSTEM FOR WATER CHEMISTRY IN THE PRIMARY COOLANT CIRCUIT OF TRIGA REACTOR	1008
<i>Vitor Almeida, Amir Mesquita, Valeria Alcantara E Alves</i>	

396-1 - MICRO REACTORS FOR ELECTRICITY GENERATION IN THE 20 KW TO 2 MW RANGE	1012
<i>Joao Moreira, Pedro Rossi, Adolfo Braid</i>	
178-1 - SELECTION OF APTAMERS AGAINST JAGGED-1 PROTEIN.....	1016
<i>Fabio Alves Da Silva, Sofia Dos Santos, Jhonatas Pereira, Dino Gushiken Junior, Maria Carneiro, Emerson Bernardes</i>	
184-1 - NEUTRONIC EVALUATION OF TH AS ABSORBER ON REPROCESSED FUEL BUNDLES ON DUPIC FUEL CYCLE	1020
<i>Michel Almeida, Rochkhudson Faria, Clarysson Silva, Claubia Pereira</i>	
118-1 - RISK-BASED DESIGN OF ELECTRIC POWER SYSTEMS FOR NON-CONVENTIONAL NUCLEAR FACILITIES AT SHUTDOWN MODES.....	1024
<i>Sad Sandrini Borsoi, Douglas Brandao Baroni, Miguel Mattar Neto, Patricia Da Silva Pagetti De Oliveira, Marcos Coelho Maturana</i>	
454-1 - STUDY ON THE APPLICATION OF OPTICAL CT FOR FRICKE GEL DOSIMETRY	1028
<i>Paulo Dos Santos Tavares, Orlando Rodrigues Jr, Leticia Lucente Campos Rodruigues</i>	
86-1 - SIMULATING ARAPONGA - THE HIGH RESOLUTION DIFFRACTOMETER OF BRAZILIAN MULTIPURPOSE REACTOR.....	1031
<i>Alexandre Souza, Luiz Paulo Oliveira, Frederico Genezini, Adimir Santos</i>	
379-1 - METALS AND TRACE ELEMENTS ASSESSMENT IN A SEDIMENTARY PROFILE FROM THE BILLINGS RESERVOIR, TAQUACETUBA BRANCH, SÃO PAULO STATE	1035
<i>Gisiele Schenemann, Robson Franklin, Deborah Teixeira Favaro</i>	
73-1 - PROGRESS OF IN-CORE FUEL MANAGEMENT SYSTEM FOR PWR REACTORS: USE OF MACROSCOPIC CROSS SECTIONS GENERATED BY SCALE 6.0 IN A DEVELOPED NODAL CODE.....	1039
<i>Pedro Rodrigues, Jose Maiorino, Roberto Asano Junior, Patricia Asano</i>	
88-1 - ENERGY ANALYSIS OF NUCLEAR BATTERIES BASED ON DIFFERENT RADIOISOTOPES.....	1043
<i>Krosli Andrade, Carlos Cabrera, Claubia Lima</i>	
32-1 - NUCLEAR APPLICATION FOR ECONOMIC SPACE EXPLORATION	1047
<i>Lamartine Guimaraes</i>	
327-1 - RIGID AND DEFORMABLE IMAGE REGISTRATION ANALYSIS IN RADIATION THERAPY BASED ON SIFT METHOD.....	1050
<i>Amanda Mazer, Helio Yoriyaz</i>	
89-1 - BROWN, CRYSTAL, REFINED AND ORGANIC SUGAR SAMPLES FROM SEVERAL COUNTRIES: EVALUATION OF CHEMICAL IMPURITIES.....	1054
<i>Paula Maria Salles, Hellen Oliveira, Maria Angela Menezes, Radojko Jacimovic</i>	
348-1 - CFD ANALYSIS OF A SMALL MODULAR REACTOR USING POROUS MEDIUM MODEL.....	1058
<i>Erik Hisahara, Gabriel Caetano, Jian Su</i>	
515-1 - MACHINE LEARNING TECHNIQUES FOR SIMULTANEOUS DETERMINATION OF PARAMETERS ASSOCIATED WITH THE K0 METHOD OF NEUTRON ACTIVATION ANALYSIS	1062
<i>Rafael Ribeiro, Mauricio Morales, Mauro Dias</i>	

514-1 - ADSORPTION OF AMOXICILLIN BY IRRADIATED GADOLINIUM-DOPED NICKEL FERRITE NANOPARTICLES.....	1066
<i>Joice Yoko Idehara, Daniele Fagundes, Nayara Gonzaga, Liliam Leonel, Jose Ardisson</i>	
194-1 - ADAPTATION OF A 10MWE SMALL MODULAR REACTOR FOR THORIUM MOX FUEL.....	1070
<i>Caio Wichrowski, Claudio Oliveira, Sergio Vellozo</i>	
112-1 - PERFORMANCE EVALUATION OF NAI(TL) AND LABR3(CE) PORTABLE RADIOLOGICAL IDENTIFIERS IN THE IDENTIFICATION OF 226-RA AND 228-RA IN SCALES FROM THE PETROLEUM INDUSTRY	1073
<i>Ana Izidorio, Davi Oliveira, Luciano Oliveira, Rodrigo Curzio</i>	
202-1 - CHANNEL ANALYSIS OF THE AP-TH 1000 REACTOR CONCEPT.....	1077
<i>Caio Julius Cesar Miranda Rodrigues Da Cunha, Daniel Gonzalez Rodriguez, Fernando Roberto De Andrade Lima, Giovanni Laranjo De Stefani</i>	
203-1 - PYTHON TOOL FOR PARAMETRIC MODELING AND SIMULATION OF A GENERIC SMR REACTOR CORE WITH THORIUM-URANIUM FUEL.	1081
<i>Salah Eddine Bentridi, Hakim Bouzoudar, Hossam Makhloufi, Imene Guellou, Naima Amrani, Djelloul Benzaid</i>	
361-1 - SECONDARY ELECTRON PRODUCTION BY PROTONS AND ALPHA-PARTICLES IN WATER TARGETS IN THE DIELECTRIC APPROXIMATION.....	1085
<i>Beatriz Moreira Magiore, Jonathan Ternes, Victoria Raposo Da Silva, Joel Mesa Hormaza</i>	
25-1 - VISITA VIRTUAL AO CETER - CENTRO DE TECNOLOGIA DAS RADIAÇÕES - INSTITUTO DE PESQUISAS ENERGÉTICAS E NUCLEARES.....	1089
<i>Thalita Barbosa, Flavia Biaty, Patricia Paladino, Arthur Juliao, Gaiane Sabundjian</i>	
243-1 - PORTABLE MAXRF SYSTEM DEVELOPMENT USING A LOW POWER X-RAY TUBE AND A RASPBERRY PI MICROCOMPUTER.....	1093
<i>Hamilton Gama Filho</i>	
145-1 - OVERVIEW AND CURRENT PERSPECTIVES FOR THE USE OF THE GFR REACTOR IN RESEARCH AND ELECTRICITY GENERATION IN BRAZIL.	1097
<i>Fernando Romano</i>	
71-1 - VALIDATION OF A COMPUTACIONAL MODEL OF A NUCLEAR FUEL ASSEMBLY BOTTOM NOZZLE	1101
<i>Andre Lotto</i>	
191-1 - PHYSICAL PROPERTIES OF IRRADIATED SAPODILLA (MANILKARA ZAPOTA).....	1104
<i>Bianca Negrao, Amanda Cristina Koike, Janis Lana, Anna Lucia Villavicencio</i>	
346-1 - TOXICITY AND ABSORCIOMETRIC DECAY OF TEXTILE DYEING EFFLUENT WITH REACTIVE DYESTUFF RB21 SUBMITTED TO ELECTRON BEAM IRRADIATION	1108
<i>Camila Melo, Jorge Rosa, Sueli Borrely, Maria Pereira</i>	
358-1 - APPLICATION OF A LEVEL 2 PSA METHODOLOGY IN THE EVENT OF LOSS OF COOLANT CIRCULATION ACCIDENT IN THE SPENT FUEL POOL OF A VSMR	1112
<i>Nathalia Araujo, Maritza Gual, Hugo Romberg, Marcos Maturana, Marcelo Martins</i>	
394-1 - THE CONTRIBUTION OF RADIOPROTECTORS TO MINIMIZE ACUTE AND DELETERIOUS DAMAGE CAUSED BY RADIATION.....	1117
<i>Julio Da Silva, Eduarda Silva, Mariana Mendes, Suy Hwang, Isvania Lopes, Fabiana Lima</i>	

395-1 - EFFECTS OF VIRTUAL SOURCE WIDTH AND COLLIMATOR APERTURE ON THE DOSE PROFILE FOR 6 MV BEAM FIELDS.....	1121
<i>Clayton Souza, Julian Shorto, Helio Yoriyaz</i>	
330-1 - EVALUATION OF NEUTRON PRODUCTION IN SPALLATION TARGETS WITH MCNPX AND FLUKA CODES.....	1125
<i>Jose Silva, Carlos Velasquez, Claubia Bezerra Lima</i>	
496-1 - VALIDATION OF THE MCNP6 AND GEANT4 MODELING OF THE RDS-80A SURFACE CONTAMINATION METER IN WITH BETA EMITTING SOURCES.....	1129
<i>Edson Da Silva, Carlos Soares, Bruno Mendes</i>	
245-1 - SIMULATION OF TRANSPORT AND CONCENTRATION OF RADIONUCLIDES BY DYNAMIC PROCESSES IN THE ATMOSPHERE.....	1133
<i>Victor Tsutsumiuchi</i>	
511-1 - STUDY ON THE SOCIOCULTURAL PROFILE OF WOMEN WORKING IN A BRAZILIAN NUCLEAR AREA INSTITUTION.....	1137
<i>Ana Gabryele Dos Santos, Karoline Suzart, Priscila Rodrigues, Nelida Mastro</i>	
248-1 - PSO-BASED MODELING PARTICULATE EMISSION RATES IN NUCLEAR ACCIDENTS.....	1141
<i>Douglas Brasil, Andressa Nicolau, Roberto Schirru, Claudio Pereira</i>	
362-1 - NUCLEAR AND NON-NUCLEAR ANALYTICAL TECHNIQUES APPLIED TO PRE-COLONIAL ARCHAEOLOGICAL CERAMICS FROM THE UPPER MADEIRA RIVER/BRAZIL (940 TO 760 B.P).....	1145
<i>Angislaine Freitas Costa, Casimiro Munita, Denise Gomes, Rogerio Baria, Michelle Tikuza, Renato Kipnis, Shiguelo Watanabe, Jose Chubaci</i>	
33-1 - STERILIZATION DOSES UNDER HYPOXIA FOR STRAINS OF ANASTREPHA FRATERCULUS (DIPTERA: TEPHRITIDAE).....	1149
<i>Thiago Mastrangelo</i>	
565-1 - INORGANIC CHEMICAL CHARACTERIZATION OF THE PEÑA LAGOON SEDIMENT BY INAA.....	1153
<i>Carlos Eduardo Rodrigues</i>	
206-4 - ENERGY AND COVID 19 – ANALYSIS OF THE IMPACT ON THE GLOBAL ENERGY MATRIX.....	1157
<i>Luiz Ferrari, Jamil Ayoub, Leni Lima, Elaine Rodrigues, Maria Pereira, Mariana Lima, Efrain Perini, Jose Seneda</i>	
53-1 - NEUTRONIC ANALYSIS OF AN AQUEOUS HOMOGENEOUS REACTOR FOR ⁹⁹ MO ISOTOPE PRODUCTION BASED ON AN AQUEOUS THORIUM SULFATE SOLUTION.....	1162
<i>Daniel Milian Perez, Daylen Milian Perez, Livan Hernandez Pardo, Daniel Milian Lorenzo, Abel Gamez Rodriguez, Carlos Brayner De Oliveira Lira, Antonio Celso Dantas Antonino</i>	
120-1 - WHOLE BODY DOSE DUE TO STATION BLACKOUT AT ANGRA 2 NUCLEAR POWER PLANT.....	1166
<i>Andre Aguiar, Seung Lee, Gaiane Sabundjian</i>	
519-1 - PARAMETRIC STUDY OF THE HETEROGENEOUS ASSEMBLY WITH THORIUM APPLIED TO NUSCALE.....	1170
<i>Diego Manoel Goncalves, Giovanni De Stefani</i>	

121-1 - AVALIAÇÃO DA CRITICALIDADE DO REATOR ELECTRA EMFUNÇÃO DO RAI DO REFLETOR	1175
<i>Ana Luiza Oliveira, Clarysson Silva</i>	
519-3 - PARAMETRIC STUDY OF THE HETEROGENEOUS ASSEMBLY WITH THORIUM APPLIED TO NUSCALE.....	1179
<i>Diego Manoel Goncalves, Giovanni De Stefani</i>	
185-1 - ANÁLISE DE SEGURANÇA E CONFIABILIDADE DO DISPOSITIVO DE MOVIMENTAÇÃO DE CÁPSULA DO RMB: RESULTADOS PRELIMINARES	1187
<i>Cassia Martins, Graiciany Barros, Luiz Da Silva, Eduardo Saraiva, Antonio Da Costa, Vanderley De Vasconcelos</i>	
47-1 - IMPACT OF COVID-19 ON THE NUCLEAR FUEL CYCLE IN BRAZIL AND REPERCUSSIONS ON THE URANIUM MARKET.....	1191
<i>Josue Medeiros</i>	
417-1 - ANALYSIS OF THE SWOT/FOFA MATRIX AS A STRATEGY FOR IMPLEMENTING THE AP-TH1000 REACTOR IN BRAZIL	1195
<i>Francky Roger Da Silva, Giovanni De Stefani</i>	
396-4 - ROBOTIC SYSTEM FOR PIPE WALL THICKNESS INSPECTION FOR THE LONG-TERM OPERATION OF ANGRA 1	1199
<i>Rogério Vitalli, Joao Moreira</i>	
224-1 - COMPUTATIONAL MODEL FOR THERMOHYDRAULIC ANALYSIS OF AN INTEGRAL PRESSURIZED WATER REACTOR WITH MIXED OXIDE FUEL (TH, PU)O ₂	1203
<i>Mariana Cecilia Betancourt, Pedro Moraes Santos, Leorlen Rojas Mazaira, Carlos Garcia Hernandez, Dany Dominguez, Jesus Rosales Garcia, Carlos Brayner</i>	
135-1 - HOW COMMUNITIES OF PRACTICE HELP TO MAINTAIN AN ORGANIZATIONAL PRACTICE AND ENHANCE RESEARCHERS' KNOWLEDGE: PROGRESS REPORT IEN, A CASE STUDY.....	1207
<i>Adriana Davila, Silas Cordeiro, Paulo Victor De Carvalho</i>	
326-1 - MULTIELEMENT ANALYSIS IN BEER CANS USING X-RAY FLUORESCENCE	1211
<i>Gabriel Ferreira, Ramon Santos, Hamilton Gama Filho, Davi Oliveira, Catarine Leitao, Marcelino Anjos</i>	
123-1 - THE PARTICIPATION OF BRAZIL, AS A POSSIBLE SIGNATORY TO THE ADDITIONAL PROTOCOL TO THE NUCLEAR SAFEGUARDS AGREEMENT	1215
<i>Nathalie Silva, Cesar Salgado, Thais Santos</i>	
393-1 - SEMICONDUCTORS (LEDS) QUALITY CONTROL BASED IN HIGH-RESOLUTION 3D X-RAY MICROSCOPE	1218
<i>Diogo Da Costa, Alessandra Machado, Davi Oliveira, Ricardo Lopes, Marcelino Anjos</i>	
55-1 - EVALUATION OF THE INSERTION OF A TRANSMUTATION LAYER IN THE ARC COMPACT REACTOR	1222
<i>Karytha Correa, Carlos Velasquez, Cláudia Pareira</i>	
155-1 - PERFORMANCE OF LBIOVT FOR 210PB DETERMINATIONS BY LSC OVER EIGHT YEARS OF PARTICIPATION IN THE NATIONAL INTERCOMPARISON PROGRAM OF BRAZIL.	1225
<i>Camilla Lucena, Geiza Medeiros, Sueli Mesquita, Wanderson Sousa</i>	

168-1 - OPTIMIZATION OF THE METHODOLOGY FOR DETERMINATION OF TETRABUTYLAMMONIUM IN THE RADIOPHARMACEUTICAL 18F-PSMA-1007 BY THIN LAYER CHROMATOGRAPHY	1228
<i>Carolina Dos Santos, Elaine De Araujo</i>	
455-1 - NEUTRONIC AND TRANSMUTATION ANALYSIS FOR DIFFERENT FUEL MATRICES IN ADS.....	1232
<i>Marcia Saturnino</i>	
196-1 - DOSIMETRY OF PEDIATRIC PATIENTS IN SKULL COMPUTED TOMOGRAPHY EXAMS.....	1236
<i>Max Well Caetano Araujo, Vinicius Saito Barros, Marcos Andrade, Vagner Cassola, Helen Khoury</i>	
448-2 - EVALUATION OF FDXR GENE EXPRESSION IN HUMAN LYMPHOCYTES AFTER EXPOSURE TO IONIZING RADIATION	1240
<i>Houemakou Rimaud Djidonou</i>	
425-1 - RAMAN CHARACTERIZATION OF LDPE-G-POLYVBC MEMBRANES OBTAINED BY GAMMA IRRADIATION SIMULTANEOUS METHOD.....	1244
<i>Laura Nakashima, Elisabete Santiago, Yasko Kodama</i>	
318-1 - COMPUTER SIMULATIONS APPLIED TO SMALL-FIELD DOSIMETRY IN RADIO THERAPY	1248
<i>Frederico Da Silva, Andre Castro, Telma Fonseca</i>	
38-1 - ON THE MAGNIFICATION OF THERMAL NEUTRON RADIOGRAPHS	1252
<i>Maria Ines Silvani, Erica Souza, Gevaldo De Almeida</i>	
156-1 - GROWTH OF SCINTILLATING BROMIDE-DOPED CESIUM IODIDE CRYSTALS FOR RADIATION DETECTION.....	1255
<i>Joao Paulo Da Silva Alves, Tufic Filho, Maria Da Conceicao Pereira</i>	
563-1 - ONLINE NEUTRON TRANSPORT PROBLEM SOLVER TOOL.....	1259
<i>Iram B. Rivas Ortiz, Dany Sanchez Dominguez, Jesus Perez Curbelo, Joel Sanchez Dominguez, Carlos Rafael Garcia Hernandez, Ricardo Barros</i>	
160-1 - COLD IODIDE ENCAPSULATION IN ALGINATE MATRIX FOR FUTURE RADIOIODINE PRECISE DOSAGE IN THYROID DISORDERS.....	1263
<i>Kethele Loureiro, Rogerio Nunes, Francisco Ferreira, Jose Pinto, Marcel Martins, Luciana Carvalheira</i>	
543-1 - SYNTHESIS AND TDPAC CHARACTERIZATION OF MULTIFERROICS: THE HOMNO_3 CASE	1267
<i>Nicole Lima, Anastasia Burimova, Alexandre Souza, Osmar Leite Neto, Artur Carbonari</i>	
35-1 - ENCAPSULATED OSB ENERGY ABSORPTION POTENTIAL: A PRELIMINARY ANALYSIS	1271
<i>Daniel Carvalho, Miguel Mattar Neto</i>	
390-2 - GAMMA RADIATION EFFECTS IN PRECOOKED FIGS	1275
<i>Marcia Harder, Larissa Harder, Rodrigo Leandro, Paula Arthur, Valter Arthur</i>	
396-3 - MICRO REACTORS AND SMALL MODULAR REACTORS IN THE BRAZILIAN ELECTRICITY GENERATION MARKET	1280
<i>Joao Moreira, Adolfo Braid, Maria Villarreal</i>	

254-2 - RISK ASSESSMENT OF AN URANIUM ISOTOPIC ENRICHMENT PLANT	1284
<i>Eduardo Souto, A. Nicolau, P. Melo</i>	
79-6 - DECOMMISSIONING ESTIMATION CONSIDERING THE FACILITATION BY THE USE OF REMOTE-CONTROLLED EQUIPMENT	1288
<i>Deiglys Monteiro, Joao Moreira, Jose Maiorino</i>	
183-1 - CONSTRUCTION OF A COMPUTATIONAL TRACHEOBRONCHIAL MODEL TO SIMULATE RADON PROGENY DEPOSITION WITH COMPUTATIONAL FLUID DYNAMICS.....	1291
<i>Laura Takahashi, Maria Angela Menezes, Talita Santos, Andre Santos, Marcos Filho, Guilherme Vidal, Rudolf Huebner, Douglas Ribeiro, Aimore Neto, Ricardo Passos, Zildete Rocha</i>	
440-1 - INFORMATION GUIDE FOR IDENTIFICATION OF RADIOACTIVE MATERIALS OUT OF REGULATORY CONTROL IN SCRAP METAL SITES	1295
<i>Dayane Souza, Rodrigo Brito, Francisco Da Silva, Renato Tavares, Alexandre Lima</i>	
337-1 - THE EFFECT OF HOST ROCK TEMPERATURE ON SPENT NUCLEAR FUEL DISPOSAL DENSITY	1298
<i>Raoni Adao Salviano Jonusan, Fernando Pereira De Faria, Antonella Lombardi Costa, Claudia Pereira Bezerra Lima</i>	
396-2 - ALTERNATIVE METHOD FOR CLASSIFICATION OF STRUCTURES, SYSTEMS AND COMPONENTS FOR DEDICATION IN RESEARCH REACTORS.....	1302
<i>Alexander Busse, Joao Moreira</i>	
464-1 - DEVELOPMENT OF AUTOMATED SYSTEM FOR CALIBRATION OF BARKHAUSEN MAGNETIC NOISE TESTING.....	1305
<i>Rafael Correa, Roger Da Silva, Silverio Da Silva Junior</i>	
140-1 - PLATAGAM: A VIDEO GAME STRUCTURED AS A DIDACTICAL MATERIAL FOR DIVULGATION OF SOME OF THE BENEFITS OF THE GAMMA RADIATION PRODUCED IN THE COBALT 60 MULTIPURPOSE IRRADIATOR AT IPEN'S FACILITIES	1308
<i>Patricia Paladino, Flavia Biaty, Arthur Juliao, Gaiane Sabundjian</i>	
162-1 - RELOAD OPTIMIZATION OF NUCLEAR POWER PLANTS USING GA TOTALLY DISCRET TOGETHER WITH THE GENES REACTOR PHYSICS CODE.....	1312
<i>Alan De Lima, Andressa Nicolau, Fernando Freire</i>	
74-1 - VERY HIGH TEMPERATURE REACTOR (VHTR) – A PROPOSAL TO GENERATION IV REACTORS	1316
<i>Madison Almeida, Claudia Paixao, Juliana Arquinto, Paloma Kotani, Thayna Marinho, Vanessa Alonso, Delvonei Andrade</i>	
101-2 - ASSESSMENT OF THE PARTICULAR DEMAND FOR ¹⁸ FDG/PET-CT PROCEDURES: A DISCUSSION REGARDING NEW INCORPORATIONS BY THE SUS	1320
<i>Marlon Silva, Priscila Santana, Adriana Batista</i>	
375-1 - LONG-TERM CORROSION KINETICS IN PRESSURIZED WATER LOOP OF AN ACCIDENT TOLERANT FUEL CLADDING CANDIDATE: AISI 348 STAINLESS STEEL	1324
<i>Vanessa Silva, Tiago Turcarelli, Fabio De Camargo</i>	
96-3 - ASSESSMENT OF NATURAL RADIOACTIVITY IN BOTTLED MINERAL WATER FROM BRAZIL	1328
<i>Marcelo Nisti, Andressa Nery, Catia Saueia, Fernanda Cavalcante</i>	

376-1 - INITIAL CRITICALITY OF THE NEW CORE WITH PLATE-TYPE-FUEL ELEMENTS OF THE NUCLEAR REACTOR IPENMB-01	1332
<i>Ulysses Bitelli, Hugo Landim, Rogerio Jerez, Reginaldo Gilioli, Luis Bocardo</i>	
101-1 - PERCEPTION OF SAFETY DURING THE MAMMOGRAPHY EXAM: CONTRIBUTION OF HUMANIZED CARE	1336
<i>Adriana Batista, Crissia Carem Fontainha, Luciana Nogueira, Talita Santos</i>	
21-5 - A REVIEW OF THE DETERMINISTIC SOLUTION OF NONCLASSICAL TRANSPORT PROBLEMS.....	1340
<i>Leonardo Moraes, Ricardo Barros, Richard Vasques</i>	
157-1 - PREDICTION OF FAILURES IN ROTATING MACHINES BY VIBRATION SPECTRAL ANALYSIS	1344
<i>Pedro Poveda, Roberto De Mesquita</i>	
461-2 - THERMAL STUDY OF THE MODULAR HIGH-TEMPERATURE GAS-COOLED REACTOR_NOVO.....	1348
<i>Mario Cerrogrande Ramos, Antonella Lombardi Costa, Vitor Vasconcelo Silva, Claubia Pereira, M. A. Veloso</i>	
102-1 - THORIUM, URANIUM AND POTASSIUM LEVELS OF BRAZIL GEOLOGICAL SEDIMENT BY GAMMA-RAY SPECTROMETER AND INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS.....	1352
<i>Rogério Ribeiro</i>	
175-1 - TOXICITY REMOVAL OF PHARMACEUTICALS MIXTURES THROUGH ELECTRON BEAM IRRADIATION.....	1356
<i>Nathalia Boiani, Flavio Tominaga, Sueli Borrely</i>	
113-1 - METODOLOGIA PARA SÍNTESE DE GEOPOLÍMERO VISANDO O TRATAMENTO DE REJEITOS RADIOATIVOS ORGÂNICOS	1360
<i>Stela Silva, Carolina Freire</i>	
31-2 - ASSESSMENT OF A UO ₂ -GRAPHENE COMPOSITE FUEL PROPOSED FOR NUCLEAR REACTORS	1364
<i>Daniel De Souza Gomes Gomes</i>	
142-1 - SAMPLE SIZE DETERMINATION IN RADIOACTIVE WASTE CHARACTERIZATION USING VALUE OF INFORMATION AS A CRITERION.	1368
<i>Paloma Suzane Cabrera, Roberto Vicente</i>	
272-1 - SIMULATION OF TRANSIENTS IN A SUB-CRITICAL HETEROGENEOUS SYSTEM IN THREE-DIMENSIONAL GEOMETRY	1372
<i>Jose Carneiro, Alessandro Goncalves, Zelmo De Lima</i>	
57-1 - AN ESTIMATE OF THE COSTS INVOLVED IN EACH STRATEGY OF DECOMMISSION OF NUCLEOELECTRIC PLANTS OF TYPE PWR.....	1376
<i>Maria Vitoria De Oliveira</i>	
124-1 - EVALUATION OF “SAFETY RELATED” AND “IMPORTANT TO SAFETY” TERMINOLOGY FOR SAFETY CLASSIFICATION OF NUCLEAR INSTALLATION ITEMS IN BRAZIL	1379
<i>Douglas Baroni, Sad Borsoi, Miguel Neto, Patricia De Oliveira, Marcos Maturana</i>	
353-1 - EXPERIMENTAL DOSIMETRY OF PULMONARY REGION IN TBI PROTOCOL	1383
<i>Fernando Rodrigues, Arnie Nolasco, Luiz Meira, Telma Fonseca</i>	

281-1 - A REVIEW ON THE FATIGUE CRACK PROPAGATION IN THE THRESHOLD REGION.....	1387
<i>Carlos A. Miranda, Luiz Ricardo, Luiz Ricardo</i>	
138-1 - SYNTHESIS AND CHARACTERIZATION OF FOLATE-MEDRONATE[64CU] AS A NEW THERANOSTIC AGENT FOR BONE CANCER AND SKELETAL DISEASES	1391
<i>Marcelo Cipreste, Wagner Mussel, Carolina Ferreira, Ronaldo Batista, Pedro Gastelois, Waldemar Macedo, Edesia Sousa</i>	
331-1 - USE OF TIPUANA TIPU TREE BARKS IN ACTIVE BIOMONITORING OF ATMOSPHERIC POLLUTANTS	1395
<i>Gabriel Ishimaru, Mitiko Saiki</i>	
338-1 - COMBINED APPLICATION OF GAMMA RADIATION, CLEANING AND CHEMICAL SANITIZERS IN DECONTAMINATION OF VEHICLE AIR CONDITIONING FILTERS	1399
<i>Simone Aquino, Jose Eduardo De Lima, Sueli Borrely</i>	
266-1 - PXRF ANALYSIS OF CAVE PAINTINGS IN ALTO VALE DO JEQUITINHONHA.....	1403
<i>Jonas Fantin Nardello, Carlos Appoloni, Renato Ikeoka, Marcelo Fagundes</i>	
111-1 - METHOD FOR EVALUATING THE HOMOGENEITY OF CEMENTED RADIOACTIVE WASTE	1407
<i>Andreza Franca, Roberto Vicente</i>	
337-2 - VERIFICATION OF HEAT TRANSFER RESULTS FROM A SPENT FUEL REPOSITORY USING AN ANALYTICAL LINE HEAT SOURCE MODEL.....	1409
<i>Victor Faria De Castro, Raoni Adao Salviano Jonusan, Fernando Pereira De Faria, Antonella Lombardi Costa, Claubia Pereira Bezerra Lima</i>	
137-1 - COMPUTER SECURITY ON BRAZILIAN NUCLEAR FACILITIES: CHALLENGES, ACTIONS AND THE PATH FORWARD	1413
<i>Renato Luiz Alves Tavares, Francisco Luiz De Lemos, Antonio Teixeira E Silva</i>	
180-1 - HYDROGEN AS A NUCLEAR THERMAL ROCKET PROPELLANT	1417
<i>Pedro Rezende, Joao Marques, Antonella Costa, Claubia Pereira</i>	

Author Index