

International Nuclear Science and Technology Conference

(INST 2014)

Journal of Physics: Conference Series Volume 611

**Bangkok, Thailand
28 – 30 August 2014**

**ISBN: 978-1-5108-0359-6
ISSN: 1742-6588**

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© (2014) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ROLE OF DEFORMED COULOMB POTENTIAL IN THE FUSION PROCESS AT DIFFERENT ORIENTATIONS OF THE COLLIDING NUCLEI	1
<i>Raj Kumari</i>	
GAMMA AND NEUTRON ATTENUATION PROPERTIES OF BARITE-CEMENT MIXTURE	9
<i>R Picha, J Channuie, S Khaweerat, T Liamsuwan, J Promping, W Ratanatongchai, K Silva, S Wonglee</i>	
INVESTIGATION OF TOROIDAL FLOW EFFECTS ON L-H TRANSITION IN TOKAMAK PLASMA BASED ON BIFURCATION MODEL	16
<i>B Chatthong, T Onjun</i>	
CHARACTERIZATION OF NEUTRON CALIBRATION FIELDS AT THE TINT'S 50 CI AMERICIUM-241/BERYLLIUM NEUTRON IRRADIATOR	23
<i>T Liamsuwan, J Channuie, W Ratanatongchai</i>	
THE SIMULATION OF L-H TRANSITION IN TOKAMAK PLASMA USING MMM95 TRANSPORT MODEL	31
<i>P Intharat, B Chatthong, T Onjun, N Poolyarat, R Picha</i>	
PRELIMINARY VALIDATION OF COMPUTATIONAL MODEL FOR NEUTRON FLUX PREDICTION OF THAI RESEARCH REACTOR (TRR-1/M1)	38
<i>S Sabaibang, S Lekchaum, C Tipayakul</i>	
VALIDATION OF THE MCNP COMPUTATIONAL MODEL FOR NEUTRON FLUX DISTRIBUTION WITH THE NEUTRON ACTIVATION ANALYSIS MEASUREMENT	44
<i>K Tiyapun, M Chimtin, S Munsorn, S Somchit</i>	
COMPARISON OF CARBON DENSITY DISTRIBUTION IN L-MODE PLASMA DISCHARGES IN TFTR TOKAMAK USING THE MIXED BOHM/GYRO- BOHM AND MULTI-MODE-95 TRANSPORT MODELS	51
<i>W Buangam, T Onjun, N Poolyarat, R Picha</i>	
DETERMINATION OF THE TOTAL INDUCTANCE OF TPF-I	58
<i>T Kunamaspakorn, N Poolyarat, R Picha, J Promping, T Onjun</i>	
COMPARISON OF DISCHARGE POWER IN DIELECTRIC BARRIER DISCHARGE (DBD) WITH STAINLESS STEEL AND KCL LIQUID ELECTRODE	64
<i>T Traikool, N Poolyarat, T Onjun</i>	
A NUCLEAR METHOD TO AUTHENTICATE BUDDHA IMAGES	69
<i>S Khaweerat, W Ratanatongchai, J Channuie, S Wonglee, R Picha, J Promping, K Silva, T Liamsuwan</i>	
EPR STUDY OF FREE RADICALS IN COTTON FIBER FOR ITS POTENTIAL USE AS A FORTUITOUS DOSIMETER IN RADIOLOGICAL ACCIDENTS	75
<i>W Sudprasert, P Insuan, S Khamkhongmee</i>	
ESTIMATION OF THE INDOOR RADON AND THE ANNUAL EFFECTIVE DOSE FROM GRANITE SAMPLES	81
<i>P Sola, W Srinuttrakul, P Kewsuwan</i>	
SAFETY AND SECURITY MANAGEMENT OF DISUSED SEALED RADIOACTIVE SOURCES IN THAILAND	87
<i>N Ya-Anant, P Nuanjan, A Phattanasub, T Akharawutchayanon, A O-Manee, N Prasertchiewchan, J C Benitez-Navarro</i>	
CARBOHYDRATE BASED MATERIALS FOR GAMMA RADIATION SHIELDING	93
<i>F Tabbakh, V Babae, Z Naghsh-Nezhad</i>	
RECENT DEVELOPMENTS IN GEM-BASED NEUTRON DETECTORS	99
<i>K Saenboonruang</i>	
IMPROVEMENT OF PORTABLE COMPUTED TOMOGRAPHY SYSTEM FOR ON-FIELD APPLICATIONS	106
<i>K Sukrod, P Khoonkamjorn, C Tippayakul</i>	
PRELIMINARY STUDY OF THE USE OF RADIOTRACERS FOR LEAK DETECTION IN INDUSTRIAL APPLICATIONS	113
<i>S Wetthagarun, A Petchrak, C Tippayakul</i>	
INNOVATIVE NEUTRON SHIELDING MATERIALS COMPOSED OF NATURAL RUBBER-STYRENE BUTADIENE RUBBER BLENDS, BORON OXIDE AND IRON(III) OXIDE	119
<i>C Jumpee, D Wongsawaeng</i>	
AN INDUSTRIAL RADIOGRAPHY EXPOSURE DEVICE BASED ON MEASUREMENT OF TRANSMITTED GAMMA-RAY INTENSITY	129
<i>C Polee, N Chankow, S Srisatit, D Thong-Aram</i>	

SPECIFIC ACTIVITY OF NATURAL AND ANTHROPOGENIC RADIONUCLIDES AND RADIOLOGICAL HAZARD ASSESSMENT IN SURFACE SOIL SAMPLES COLLECTED ALONG THE ANDAMAN SEA COAST IN SOUTHERN REGION OF THAILAND	136
<i>P Kessaratikoon, R Boonkrongcheep, S Benjakul, S Udomsomporn</i>	
TOLERANCE AND ACCUMULATION OF CESIUM AND STRONTIUM IN SAPROTHOPHIC FUNGI	144
<i>P Seeprasert, M Yoneda, Y Shimada, Y Matsui</i>	
ASSESSMENT OF RADIONUCLIDES AND HEAVY METALS IN MARINE SEDIMENTS ALONG THE UPPER GULF OF THAILAND	152
<i>S Khuntong, C Phaophang, W Sudprasert</i>	
VARIATIONS OF ²¹⁰PO ACTIVITY IN MUSSEL (PERNA VIRIDIS) OF SAMUT SAKHON AND ITS CONTRIBUTION TO DOSE ASSESSMENT	162
<i>B Porntepkasemsan, K Srisuksawad, W Kulsawat</i>	
ANALYSIS OF RADON IN SHALLOW-WELL WATER: A CASE STUDY AT PHICHIT SUBDISTRICT IN SONGKHLA PROVINCE, THAILAND	170
<i>A Charoensri, S Siriboonprapob, N Sastri</i>	
SPATIAL DISTRIBUTION OF ¹³⁷CS IN SURFACE SOIL UNDER DIFFERENT LAND USES IN CHAO PHRAYA WATERSHED: POTENTIAL USED AS SEDIMENT SOURCE TRACING	176
<i>K Srisuksawad, B Porntepkasemsan, N Noipow, A Omanee, W Wiriyakimateekul, R Chouybudha, P Srimawong</i>	
MEASUREMENTS OF INDOOR RADON CONCENTRATIONS IN CHAIYA AND THA CHANA DISTRICTS, SURAT THANI PROVINCE, THAILAND	182
<i>K Titipornpun, A Titipornpun, P Sola, T Bhongsuwan</i>	
A SIMPLE LABORATORY SYSTEM FOR DIFFUSIVE RADON FLUX MEASUREMENTS	189
<i>C Kranrod, S Chanyotha, S Tonlublao, W C Burnett</i>	
^{99m}Tc-CIPROFLOXACIN FOR DIAGNOSIS OF BACTERIAL INFECTION	197
<i>A Aungurarat, T Ngamprayad, M Dangprasert, S Phunkem, B Jowanaridhi</i>	
GAMMA IRRADIATION INDUCES DNA DOUBLE-STRAND BREAKS IN FIBROBLASTS: A MODEL STUDY FOR THE DEVELOPMENT OF BIODOSIMETRY	204
<i>P Uttayarat, T Tangtong, K Sukapirom, K Boonsirichai</i>	
AN EVALUATION ON THE DESIGN OF BEAM SHAPING ASSEMBLY BASED ON THE D-T REACTION FOR BNCT	211
<i>M Asnal, T Liamsuwan, T Onjun</i>	
Author Index	