## **Table of Contents**

Code	Title	Page
	Paper Reviewers	ē
	Editor	
	Foreword	i
	Table Of Contents	iii
	Schedule	vii
P1.1	Activities in TOKYO TECH Center of Excellence Innovative Nuclear	1
	Energy System (COE-INES), Hiroshi Sekimoto	
P1.2	Opportunities, Challenges and Common Design Objectives for	7
	Innovative Small and Medium Sized Reactors, Vladimir Kuznetsov	
P2.1	The Status of Nuclear Energy Program in Indonesia / Hudi Hastowo	17
A1.1	Neutronic Aspect of Subcritical Assembly for Mo-99 Production	23
	(SAMOP) Reactor, Topan Setiadipura	
A1.2	Simulation of Neutron Generating Target Cooling System with Finite	27
	Element Method (FEM), Elfrida Saragi, Slamet Santoso, Utaja	
A1.3	Pattern Recognition of Material Creep and Fatigue used in Nuclear	31
	Power Plant, Mike Susmikanti, Antonius Sitompul,	
	Ari Handayani, Suratman, Arya Adhyaksa	
A1.4	Simultaneous Selection of Beam Directions for Treatment	37
	Planning and for Image Reconstruction, R. Widita, L.C. Holloway	4.4
A2.1	Multistep Runge-Kutta Methods for Solving DAEs,	41
422	Heru Suhartanto, Kevin Burrage	4.7
A2.2	Development of Activity Analysis for Surveillance in Nuclear	45
	Facilities, RB. Wahyu, Tati R. Mengko, Bambang Pharmasetiawan,	
422	Andriyan B. Suksmono, Toto Widyanto	52
A2.3	Development of Anomaly Diagnosis Method using Neuro Expert	53
	for PWR Monitoring System, Muhammad Subekti,	
A2.4	Kazuhiko Kudo, Kunihiko Nabeshima	65
A2.4	Dynamic Transient Analysis of the Structure Based on the Finite Element with the Normal Mode Method, Utaja, Khairina Ns	65
A3.1	Thermal Performance Analysis of Novel UO <sub>2</sub> Pellet Containing	71
$\Lambda J.1$	Tungsten Matrix for Pressurized Water Reactor, Suwardi	/ 1
A3.2	Improving Computational Efficiency Using Brute	77
113.2	Force Method in Uncertainty/Sensitivity Analysis, M. Hendayun	, ,
A4.1	Influence To the Calculation Result of Reactor Characteristics	83
Λ.τ.1	by the Simplification of the ADS Analysis System, Shinya ISHIDA,	63
	Hiroshi SEKIMOTO, Kenji NISHIHARA, Hiroyuki OIGAWA	
A4.2	Affect of Reflectors on Criticality Parameters of Homogeneous	87
111.2	System of Uranyl Nitrate Solution, Tegas Sutondo	07
A5.1	Improvement of Treatment Planning System at JAEA (JCDS)	93
	for Boron Neutron Capture Therapy, H. Kumada, K. Yamamoto,	, ,
	Peng Hong Liem, A. Matsumura and Y. Nakagawa	
A5.2	A Computation and Database Development for Fast Neutron	99
	Activation Analysis, Slamet Santosa, Elin Nuraini	
B1.1	Status and Prospect of Development of Lead-Alloy-Cooled	105
	Fast Reactor, Minoru Takahashi	
B1.2	The Influence of Mass Flow Rate on Power Fluctuations in A Fluidized	113
	Bed Nuclear Reactor: A Space-Dependent Dynamics Perspective, Alexander Agung	
B1.3	Development of Integrated Simulation Code System of PWR for	119
	Education Purpose, Syeilendra Pramuditya, Zaki Su'ud, Abdul Waris	
B2.1	Recent Research Activities on CANDLE Burnup, Hiroshi Sekimoto	125
B2.2	Development of Advanced Nuclear Energy Systems in India, P.D. Krishnani	133

B2.3	Education of Nuclear Reactor Engineering in Project Based Learning, <b>Tadashi Narabayashi, Yoichiro Shimazu</b>	147
B2.4	Neutronic and Natural Circulation Aspect of Thorium Battery (Thobatt), a Long Life Small PWR with $(Th, U)O_2$ Fuel, <b>Topan Setiadipura, Zaki Su'ud</b>	155
B3.1	An Advanced Energy System Using a Small Fast Reactor as an	161
	Energy Source, Yasuyoshi Kato, Y. Muto, Takao Ishizuka, N. Nikitin, M. Utamura	
B3.2	Feasibility Analysis of Nuclear Energy System for Developing Countries	173
	Which can Utilize Natural Uranium/Thorium Efficiently without	
	Embedded Enrichment Plant nor Reprocessing Plants, Zaki Su'ud, Rida Siti Nm	
B3.3	Long-Term Load Forecasting on the Java-Madura-Bali Electricity	177
	System Using Artificial Neural Network Method, Arief Heru Kuncoro,	
	Zuhal, Rinaldy Dalimi	
B4.1	A Symbiotic System of a Large Fast Breeder Reactor and Small-Sized,	183
	Long Life, Thorium Satellite Reactors - General Introduction,	
	Peng Hong Liem, Ismail, Permana Sidik, Naoyuki Takagi, Hiroshi Sekimoto	
B4.2	A Symbiotic System of a Large Fast Breeder Reactor and Small-Sized,	189
	Long Life, Thorium Satellite Reactors – Performance Optimization,	
	Ismail, Liem Peng Hong, Sidik Permana, Naoyuki Takaki, Hiroshi Sekimoto	
B4.3	Advanced SPINNORs Concept and He Prospect of their	199
	Deployment in Remote Area, Zaki Su'ud	
B4.4	Study of Parallel Burnup Calculation on Multi PC, Imam Taufiq, Zaki Su'ud	209
B4.5	Design Study of Long Life HTGR Using Thorium Cycle (General Characteristics),	213
	Ferhat Aziz, Zaki Su'ud, Asril P., Ratu Fenny, Deby M.	
B5.1	Design Study and Analysis of Pb-Bi Cooled Fast Reactor for	217
	Hydrogen Production, Epung Saepul Bahrum, Zaki Su'ud,	
	Abdul Waris, Bambang Ari Wahjoedi	
B5.2	Study of Thorium Characteristic on Supercritical Water Reactor (SCWR),	221
	Bambang Joko Suroto and Zaki Su'ud	
C1.1	Design Study of Full Scale Accelerator Driven Transmutation System	225
	(ADTS), for Transmuting High Level Waste of MA/Pu from PWR Spent Fuel.,	
	Marsodi, K. Nishihara, Zaki. Su'ud	
C1.2	Breeding Capability of Uranium and Thorium Fuel Cycles for Water	233
	Cooled Reactors, Sidik Permana, Naoyuki Takaki, Hiroshi Sekimoto	
C2.1	Studies of Advanced Fuel Cycles in Indian PHWRs and AHWR,	239
	P.D. Krishnani, Baltej Singh, Umasankari Kannan, R. Srivenkatesan	
C2.2	Scenario for Thorium Fuel Cycle with Free <sup>233</sup> U in BWR,	245
	Abdul Waris, W. Nawangsary, S. Pramuditya, R. Kurniadi	
C2.3	Extended Wood-Saxon Potential for Determination of Fission	249
	Cross-Section of <sup>232</sup> Th with Neutron Energy Range 1-200 MEV,	
	Rizal Kurniadi, Abdul Waris, Suwoto	
C2.4	High Level Waste Confining in BWR with Thorium Fuel,	253
	Abdul Waris, R. Kurniadi, Novitrian, Z. Su'ud	
C3.1	Design Study of Long Life Pb-Bi Cooled Reactors with Natural Uranium as	257
	Fuel Cycle Input Using Radial Fuel Shuffling Strategy, Rida Siti NM, Zaki Su'ud	
C3.2	Design Study of the HTTR with Lead – Bismuth Coolant Use Uranium	263
	and Thorium Fuel, Deby Mardiansah, Ratu Fenny Muldiani, Zaki Su'ud	
C3.3	Development of Three Dimensional Accident Analysis Code for Pb-Bi	269
	Cooled Tank Type Fast Reactors, Yanti Yulianti, Zaki Su'ud	
C4.1	Application of Small Reactor 4S, Akio Minato	275
C4.2	Co-Evolution of Nuclear Technology and Society - Nuclear Social	283
	Responsibility and Education, Naoki YAMANO	
C4.3	Nuclear Education System in Indonesia for Improving Public	289
	Acceptance, Ekki Kurniawan	
C4.4	The Role of Nuclear Engineering Education in University Level to Support	295
	the First Nuclear Power Plant in Indonesia: a Lesson from Korea,	
	C. Hudaya, U.C. Lee	

C5.1	Calculation of Energy Dependent Level Density Parameter Using Extended Wood-Saxon Potential, Rizal Kurniadi, Abdul Waris, and Yudha Satya Perkasa	301
C5.2	Calculation of Isotopic Fission-Yield of <sup>233</sup> U and <sup>232</sup> Th for Fast Energy	305
C3.2	Spectrum, A. Waris, R. Kurniadi, Y. S. Perkasa, S. Pramuditya, Suwoto	303
C5.3	Shell Correction with Strutinskys Model, Adam Al Fatih	309
C5.4	Single Particle Level Density Calculation Using Extended Wood	313
C3.4	Saxon Potential, Rizal Kurniadi, Abdul Waris, Yudha. S. Perkasa	313
D1.1	The Prospect of Neutron Scattering in the 21 <sup>st</sup> Century: A Powerful	317
D1.1	Tool for Materials Research, E.Kartini	317
D1.2	Corrosion Resistance of Alloy-Sputtering-Coated Steels and High	325
D1.2	Chromium Steels in Pb-Bi at Transient Temperature Conditions,	323
	Abu Khalid Rivai, Minoru Takahashi	
D1.3	New Synthesis Method of the Mg <sub>2</sub> Ni Compound by Using Mechanical	333
<b>D</b> 1.3	Alloying for Hydrogen Storage, Hadi Suwarno, Wisnu Ari Adi, Andon Insani	333
D2.1	Structural Model of Superionic Conducting Glasses by a Reverse Monte	339
D2.1	Carlo Analysis, Shane Kennedy, Rhet Magaraggia, Evvy Kartini	337
D2.2	Application of Euler-Lagrange Method in Spatial Estimation of	345
D2.2	Pollutant in Advection Dominant Condition, Sunarko, Zaki Su'ud, Abdul Waris	373
D2.3	Influence of $\beta$ -Quenching on the Microstructure and Microhardness	351
D2.3	of Zr4-Nb Alloys., Djoko Hadi Prajitno	331
D3.1	State Responsibility for Nuclear Activities in Indonesia, Yanti Fristikawati	355
D3.1		359
D3.2	Simulation to Attain Optimal Composition of Power Plant Technology	339
	in Java-Madura-Bali up to Year of 2026, Ronald Winardi,	
D3.3	PY.Topo Suprihadi, Sudi Ariyanto Optimum Solution Expectation on Sumatra Electricity Expansion	367
D3.3	Planning Beyond 2030 Using WASP-IV Package, Edwaren Liun	307
D2 4		272
D3.4	Load Pattern and the Implication in the Electricity Expansion  Planning with Neeless Ontion Synamon, Tubel D. Bineldy	373
D2 5	Planning with Nuclear Option, Suparman, Zuhal, D. Rinaldy	379
D3.5	Environmental Impacts Assessment of Java's Electricity Generation Using SimPacts Model, Edwaren Liun, Arief H. Kuncoro, Edi Sartono	3/9
D4.1		385
D4.1	Study on Advanced Micro-Disk Gas Turbine Using Hydrogen Fuel	363
D. 7. 1	Produced by Very High Temperature Nuclear Reactor, Sri Sudadiyo	201
D5.1	Simulation of Radioactive Release in Muria Peninsula Using	391
D 5 0	Hysplit Model, Sudjatmi K. A, Teuku Alfa	207
D5.2	Corrosion Study of Steels in Liquid Lead-Bismuth Cooled	397
	Nuclear Reactors by Computer Simulation, Alan Maulana,	
D. 7. 0	Zaki Su'ud, Hermawan K.D,Khairurrijal	402
D5.3	Development of Cell Homogenization Code Using General	403
D 5 4	Geometry Approach, Mohamad Ali Shafii, Zaki Su'ud	405
D5.4	Design Study on Medium Size 700 MWt Lead-Bismuth Cooled Fast	407
	Reactor (LFR) with Metallic Fuel (U-Pu-10Zr), Andri Wahyudi, Zaki Su'ud	
	International Advisory Board	409
	Organizing Committee	409
	List of Participants	411