

CONTENTS

Preface	8
<u>Advanced Neutron Sources and Perspective Experiments</u>	
Accelerator Based Neutron Source VITA for Measuring Nuclear Reaction Cross Sections and for Irradiating Advanced Materials <i>Bikchurina M., Bykov T., Kasatov D., Kolesnikov I., Koshkarev A., Osteinov G., Savinov S., Shchudlo I., Sokolova E., Sorokin I., Verkhovod G., Taskaev S.</i>	11
Accelerator Version of the Intensive Lithium Antineutrino Source <i>Lyashuk V.I.</i>	20
Modified Collimator for Neutron Therapy Applications: Enhancing Narrow Beam Detection of Fast Neutrons <i>Shehada A.M.</i>	27
<u>Nuclear Reactor Physics</u>	
Investigation of Gamma Dose Changes of High-Degree Occupation Hall of Tehran Research Reactor up to a Few Days after the LOCA Accident <i>Gholamzadeh Z.</i>	35
The Use of Pb-208 as a Reflector of the NEPTUNE Reactor <i>Hassan A.A., Chereskov D.G., Dikova T.S.</i>	40
Neutronic Chain Reactions in Bismuth Salts <i>Lim S.</i>	43
Definition of Thermophysical Parameters of the IVG.1M Reactor Core with LEU Fuel <i>Prozorova I.V., Martynenko Y.A., Irkimbekov R.A., Popov Y.A., Surayev A.S., Gnyrya V.S., Sabitova R.R., Medetbekov B.S.</i>	59
Thermal Model of the IGR Research Reactor <i>Surayev A.S., Vityuk V.A., Vityuk G.A., Irkimbekov R.A., Zhanbolatov O.M.</i>	67
<u>Intermediate and Fast Neutron Induced Reactions, Neutron Radiation Effects</u>	
Measurement of Cross Sections for Nuclear Reactions of Interaction of Protons and Deuterons with Lithium at Ion Energies 0.4–2.2 MeV <i>Bikchurina M., Bykov T., Kasatov D., Kolesnikov I., Koshkarev A., Osteinov G., Savinov S., Sokolova E., Taskaev S.</i>	75

The Covariance Analysis of $^{nat}\text{Sn}(\alpha, x)^{122}\text{Sb}$ Nuclear Reaction Cross Sections
*Choudhary M., Singh N., Sharma A., Gandhi A., Upadhyay M., Dasgupta S.,
 Datta J., Kumar A.88*

Effect of Angular Momentum Variation in Heavy Ion Induced Fusion Reaction

Mishra U., Dubey P., Choudhary M., Sharma A., Kumar A.92

Neutron Induced Reaction Cross Section Measurement for Silver with Detailed Uncertainty Quantification

*Upadhyay M., Choudhary M., Singh N., Gandhi A., Sharma A., Bamal S., Hingu A.,
 Mukherjee S., Mishra G., De S., Danu L.S., Sood S., Prasad S., Kumar Ajay,
 Thomas R.G., Kumar A.96*

Properties of Compound States, Nuclear Structure, Fundamental Interactions

On the Significant Enhancement of the Stern–Gerlach Effect for Neutron, Diffracting in a Crystal at Bragg Angles Close to the Right One

Fedorov V.V., Voronin V.V., Semenikhin S.Yu.103

Theoretical Works of G.C. Wick in Neutron Physics in the 30-ies

Gould Ch.R., Sharapov E.I.115

Electron Mass as the Basic Parameter of the Standard Model

Sukhoruchkin S.I.121

Grouping of Neutron Resonance Positions

Sukhoruchkin S.I., Soroko Z.N., Sukhoruchkina M.S.129

Nuclear and Related Analytical Techniques in Environmental and Material Science

Application of the Tagged Neutron Method for Elemental Analysis of Sinter

*Alexakhin V.Yu., Andreev E.I., Lichkunova A.I., Komarov I.K., Razinkov E.A.,
 Rogov Yu.N., Sapozhnikov M.G., Chirikov-Zorin I.E.139*

Characterization of Nano-Sized Titanium Dioxide

Imanova G., Aliyev A., Mansimov Z., Mirzayev M., Aliyev S.144

Determination of the Efficiency of Neutron Detectors in an Experiment of Inelastic Neutron Scattering on ^{12}C

Ionkin V.K., and TANGRA collaboration147

Non-Destructive Investigation of the Fragment of Mirror (6th–4th Centuries BCE) from the Necropolis Volna 1 on the Taman Peninsula by Neutron Resonance Capture Analysis

Simbirtseva N.V., Mazhen S.T., Yergashov A., Sedyshev P.V., Saprykina I.A., Mimokhod R.A......153

Using Rutherford Backscattering Spectroscopy to Investigate ErF₃ Doped CaF₂ Samples

Tuan P.L., Kulik M., Stef M., Phuc T.V., My N.T.B., Anh N.N., Zelenyak T.Y., Buse G., Racu A., Doroshkevich A., Khiem L.H., Cong V.D......159

Development of a Methodology for Analyzing Organic Carbon and $\delta^{13}\text{C}$ in Soil and Sediment Samples through EA-IRMS

Tran Quang Thien, Le Xuan Thang, Nguyen Thi Huong Lan, Phan Son Hai, Tran Tuan Anh, Nguyen Minh Dao, Nguyen Huu Nghia, Phan Quang Trung, Vo Thi Mong Tham164

Neutron Induced Reactions, Calculations

Evaluation of a Mistaken Asymmetry in the Projected Experimental Search of Spatial Anisotropy of Gammas from $^{109}\text{Ag}(n, \gamma)$ Reaction at Neutron Energies near 32-eV *p*-Wave Resonance

Kuznetsov V.L., Mitsyna L.V., Rebrova N.V., Sedyshev P.V.173

Observation of Structural Gamma Quanta in Neutron Radiative Decay

Khafizov R.U., Kolesnikov I.A., Nikolenko M.V., Tarnovitsky S.A., Tolokonnikov S.V., Torokhov V.D., Trifonov G.M., Solovei V.A., Kolkhidashvili M.R., Konorov I.V.179

Angular Distribution in Fast Neutrons Induced Reactions on ^{64}Zn Isotope

Oprea C., Oprea A.I.192

Forward-Backward Asymmetry Effect in Slow Neutrons Capture by Silver Nucleus

Sedyshev P.V., Oprea A.I., Oprea C., Kuznetsov V.L.198

Computer Simulation PFN Transport in Neutron Detector

Sidorova O., Zeynalov Sh.204

Neutron Detection & Methodical Aspects

New Time Pick-Off Algorithm for Time-Of-Flight Measurements with PIN Diodes

Kamanin D.V., Pyatkov Yu.V., Zhuchko V.E., Goryainova Z.I., Falomkina O.V., Pyt'ev Yu.P., Korsten R., Kuznetsova E.A., Naumov P.Yu., Solodov A.N., Strelkovsky O.V., Zhukova A.O......213

Neutron Spin-Filter with Spin-Exchange Interaction of ^3He Nuclei and the Atoms of a Saturated Ferromagnetic	
<i>Skoy V.R.</i>	220
The Development of the Setup for the Study of P-Even Correlations in p-Wave Resonances	
<i>Yergashov A., Hramko C., Kopatch Yu.N., Kuznetsov V.L., Mitsyna L.V., Rebrova N.V., Sedyshev P.V.</i>	224
<u>Nuclear Fission</u>	
Study of Neutron Multiplicity in $^{232}\text{Th}(n, f)$ Reaction Using TALYS-1.96	
<i>Dubey P., Kumar A.</i>	231
Measurement of Fission Cross Section and Angular Distributions of Fission Fragments from Neutron-Induced Fission of ^{243}Am in the Energy Range 1–500 MeV	
<i>Gagarski A.M., Vorobyev A.S., Shcherbakov O.A., Vaishnene L.A., Barabanov A.L., Kuz'mina T.E.</i>	236
The Virtual Character of Spontaneous and Induced (with the Participation of Thermal Neutrons) Ternary Fission of Nuclei with the Emission of Precission Nucleons and Light Nuclei	
<i>Kadmensky S.G., Otvodenko Ya.O.</i>	247
Status and Prospect of Studies of (γ, f) Reaction at MT-25 Microtron	
<i>Kamanin D.V., Pyatkov Yu.V., Solodov A.N., Zhuchko V.E., Goryainova Z.I., Kuznetsova E.A., Strekalovsky O.V., Zhukova A.O.</i>	263
Revision of Analytical Properties of Reaction Amplitude near Thresholds Using the Example of Muon-Induced Prompt Fission	
<i>Karpeshin F.F.</i>	272
Anisotropy in Pre-Fission Neutron Spectra of $^{235}\text{U}(n, F)$	
<i>Maslov V.M.</i>	278
Angular Anisotropy of Secondary Neutron Spectra in $^{232}\text{Th} + n$	
<i>Maslov V.M.</i>	290
^{236}Np Isomer Yields in $^{237}\text{Np}(n, 2n)$ and $^{238}\text{U}(p, 3n)$ Reactions	
<i>Maslov V.</i>	306