

CONTENTS

METALS

B. Leontić: QUANTUM INTERFERENCE ON DEFECTS - THE INFLUENCE OF HYDROGEN ON THE MAGNETORESISTANCE OF THE $(Zr_2Ni)_{1-x}H_x$ SYSTEM*	5
E. Babić: ELECTRICAL RESISTIVITY AND ELECTRONIC STRUCTURE OF AMORPHOUS $Ni_{81.5}P_xB_{18.5-x}$ ALLOYS	19
M. Davidović and Dj. Jović: STRUCTURE PROPERTIES OF AMORPHOUS MATERIALS	23
J. Dojčilović, D. Todorović, L. Novaković and M. Lj. Napijalo: THE PHYSICAL PROPERTIES OF THE MIXED PHOSPHATES OF THE TRANSITION ELEMENTS AND POTASSIUM	29
P. Dubček, M. Stubičar, J. Lukatela, B. Leontić and A. Jânosi: THE SAXS STUDY OF MICROSTRUCTURE OF SOME AMORPHOUS AND CRYSTALLINE ALLOYS	33
M. Gajdardžiska - Josifovska: OPTICAL CONSTANTS AND MICROSTRUCTURE OF THIN SILVER FILMS	37
E. Girt, B. Leontić, K. Novalija, J. Lukatela, N. Njuhović and G. Knežević: ANALYSIS OF THE ISOTHERMAL DILATOMETRIC BEHAVIOUR OF THE METAL GLASS $NiZr$ DOPED BY HYDROGEN BEING FUNCTION OF HYDROGEN CONCENTRATION	41
J. Ivkov and Z. Marković: THE ANOMALOUS HALL EFFECT IN AMORPHOUS $(FeCoNi)_{78}B_{12}Si_{10}$ ALLOYS	45
B. Leontić, J. Lukatela, P. Dubček: ANOMALOUS MAGNETORESISTANCE OF HYDROGEN - DOPED $Zr_{0.67}Ni_{0.33}$ METALLIC GLASS	49
T. Mihać, N. Bibić and T. Nenadović: THE INVESTIGATION OF LASER INDUCED CHANGES IN THIN Ti FILMS	53
M. Lj. Napijalo, J. Dojčilović and M. M. Napijalo: THE PHYSICAL PROPERTIES OF THE MIXED PYROPHOSPHATES CONTAINING $Fe(III)$, $Cr(III)$ AND ALKALINE METALS IONS	57
L. Novaković, L. Doblanović, M. M. Napijalo, J. Dojčilović and M. Lj. Napijalo: THE PHYSICAL PROPERTIES OF SOME MIXED CHLORIDES WITH THE SPINEL STRUCTURE	61
K. Novalija, E. Girt, N. Njuhović, G. Knežević and Ž. Majstorović: INVESTIGATION OF THE SYSTEM $Co_{94-x}Nb_xB_6$ BY THE DILATOMETRIC METHOD WITH THE ISOTHERMAL TREATMENT	65
A. Smontara, K. Biljaković and T. Sambongi: ANOMALOUS TRANSPORT PROPERTIES OF $ZrTe_5$	71

SEMICONDUCTORS

Z. Ogorelec: APPLIED PHYSICS OF SEMICONDUCTORS: THE CASE OF SENSORS ^(*)	75
V. Milanović: SEMICONDUCTOR SUPERLATTICE ^(*)	83
D. Krpan - Lisica, V. Gotovač and Lj. Aljinović: PHOTOELECTROCHEMICAL (PEC) STUDY OF THE CdS FeCl ₃ /FeCl ₂ Pt and CdSNaOCl/Cl ₂ Pt SYSTEMS	95
M. Busuladžić, D. R. Mašović, F. R. Vukajlović: SPIN-ORBIT INTERACTION IN SEMICONDUCTORS: CRITICAL ANALYSIS, DETAILS AND TEST CASES	99
D. Čajkovski, T. Čajkovski and R. Pušić: THE EFFECT OF COPPER ADSORPTION ON SURFACE MOBILITY IN GERMANIUM	105
Z. Ikonić, V. Milanović, D. Tjapkin: THE INFLUENCE OF THE EFFECTIVE MASS DISCONTINUITY ON WAVEFUNCTIONS IN A QUANTUM WELL IN ELECTRIC FIELD	113
Z. Ikonić, V. Milanović: FIELD INDUCED OPTICAL TRANSITIONS IN SEMICONDUCTOR QUANTUM WELLS	119
Gj. Ivanovski, N. Novkovski: ON THE THEORY OF LEVEL SPACING DISTRIBUTION IN TYPICAL QUANTUM SYSTEMS	125
Z. Ivić, M. Satarić and R. Žakula: THE PERTURBATIVE OF DONORS AND ACCEPTORS ON THE VALUE OF THE KINETIC COEFFICIENT OF ELECTRON TRANSFER ALONG A ONE-DIMENSIONAL MOLECULAR CHAIN ACHIEVED BY DAVYDOV SOLITONS	129
D. Jelčić, A. Bjeliš and I. Batišić: THE INTERFERENCE EFFECTS IN THE SLIDING CHARGE DENSITY WAVE	135
G. D. Maksimović, D. R. Mašović and Z. S. Popović: APPLICATION OF THE MODIFIED VELJKOVIĆ - SLAVIĆ PSEUDOPOTENTIAL FOR CALCULATION OF THE ELECTRONIC CHARGE DENSITY OF SI	139
V. Milanović, Z. Ikonić, D. Tjapkin: THE ELECTRON STRUCTURE OF SAWTOOTH SUPERLATTICE	143
V. Milanović, Z. Ikonić: THE INFLUENCE OF CONTINUOUS SPECTRUM ON ELECTRON CONCENTRATION IN SEMICONDUCTOR QUANTUM WELLS	149
S. Radenković and A. Szytula: INFLUENCE OF THERMAL TREATMENT ON CRYSTAL AND MAGNETIC STRUCTURE OF NiO	153
M. Ristov, Gj. Sinadinovski and M. Mitreski: SLOW RESPONSE PHOTOCONDUCTIVITY OF CHEMICALLY DEPOSITED ZnO THIN FILM	157
D. Stojanović, D. Stojanović, R. Ramović, D. Tjapkin: THE ANALYSIS OF ELECTRICAL PARAMETERS IN MULTILAYER HETEROSTRUCTURE	163
D. Tjapkin, B. Radenović, M. Avramov: SOME PROBLEMS OF HYBRIDIZATION AND OF THE DENSITY OF STATES SELF-CONSISTENT DETERMINATION IN SEMICONDUCTORS	167
Z. Vejnović, M. Davidović and F. Boreli: LUMINESCENCE OF PHOSPHORUS COMPOUNDS	173
D. Jakimovski, G. Ivanovski: TRANSITION TO CHAOS THROUGH AN INFINITE SERIES OF PHASE TRANSITIONS IN SYSTEMS MODELED WITH NONLINEAR TRANSFORMATIONS	177
A. Levstik, T. Carlsson, C. Filipič, and B. Žekš: DETERMINATION OF THE SmA - SmC' PHASE TRANSITION IN DOBAMBC AND ITS DIELECTRIC RELAXATION	181
A. Smontara, K. Biljaković, L. Forró and F. Levy: PROPERTIES OF THE STRUCTURAL PHASE TRANSITION IN THE CHAIN SEMICONDUCTOR (NbSe ₄) ₃	185

G. M. Stanišić, M. M. Ristić: EPR AND X-RAY ANALYSIS OF THE VARIATION OF ZnO-Bi ₂ O ₃ SYSTEM (ZnO≥95 mol%, Bi ₂ O ₃ ≤ mol%) STRUCTURAL PARAMETERS	189
R. Kranold and M. Stubičar: INVESTIGATION OF THE MICROHARDNESS OF SOME OXIDE GLASSES	193
R. Mičić, I. Burić, B. Drašković: THE PHOTOLUMINESCENCE OF Mn ²⁺ IONS IN MAGNESIUM BROMIDE WITH SOME BIVALENT CATIONS IMPURITIES	197
D. Lj. Mirjanić, B. S. Tošić and J. P. Šetrajčić: DIELECTRIC CONSTANT OF CRYSTAL IN FUNCTION OF THE WAVE VECTOR	203
M. Satarić, Z. Ivčić and R. Žakula: THE CONTRIBUTION OF SUPERSONIC DAVYDOV SOLITONS TO THE VALUE OF KINETIC COEFFICIENT OF ELECTRON TRANSFER ALONG A BIOPOLYMER CHAIN	207
M. M. Sekulić and Z. V. Popović: A TRANSMISSION SPECTRUM OF A SMOKY QUARTZ HAVING A JEWELLERY-COLLECTION IMPORTANCE	215
S. Stojanović, M. J. Škrinjar and D. Kapor: SOLITONS IN 1-d HEISENBERG FERROMAGNET WITH SPIN-PHONON INTERACTION IN HOLSTEIN-PRIMAKOFF REPRESENTATION	219
J. P. Šetrajčić, B. S. Tošić and D. Lj. Mirjanić: SUPERFLUIDITY IN MOLECULAR CRYSTALS	223
M. Škrinjar, D. Kapor and S. Stojanović: SOLITONS IN 1-d FERROMAGNET WITH PLANAR ANISOTROPY IN THE PRESENCE OF SPIN-PHONON INTERACTION	227
B. S. Tošić, D. Lj. Mirjanić and J. P. Šetrajčić: SUPERFLUIDITY OF THE HEISENBERG FERROMAGNET	231
J. Baturić - Rubčić and A. Rubčić: ENTROPY OF DISORDER AT MELTING OF SUBSTANCES WITH GENERAL SHAPE OF MOLECULES	235
A. Budkowski, A. Szytuła, D. Rodić, R. Duraj, J. Mayer, J. Sciesinski: SOME PROPERTIES OF THE COMPENSATION POINT IN RARE EARTH IRON GARNETS	239
B. Cviki, M. Čepič and J. Peternej, U. Dahlborg: INCOHERENT COLD NEUTRON SCATTERING SPECTRAL SHAPES UNDER THE INFLUENCE OF LOCALIZED STOCHASTIC MOTION OF PARALLEL MOLECULES	245
D. Hanžel, M. Drogenik, T. Birchall and C. Hallett: MÖSSBAUER SPECTRA OF ⁵⁷ Fe IN BaFe ₄ Sn ₂ O ₁₁	251
D. Hanžel, M. Čopič: EM FIELD DISTRIBUTION INSIDE LASER RESONATORS	257
S. Kilić, S. Sunarić: PRESSURE DEPENDENCE AND TRIPLET CORRELATION EFFECTS IN SPECTRUM OF SINGLE EXCITATIONS IN SUPERFLUID ⁴ He	267
M. M. Napijalo, L. Novaković and M. Lj. Napijalo: OPTICAL REFLECTION SPECTRA AND CRYSTAL FIELD OF Co(II) AND Ni(II) COORDINATION COMPOUNDS WITH MELAMINE	271
D. Rodić, M. Mitrić and J. Konstantinović: ON CRYSTAL STRUCTURE OF FERRIMAGNETIC RARE EARTH GARNETS IN COLINEAR MAGNETIC PHASE	275
F. Sokolić, D. Kirin and A. Rubčić: COMPUTER ANALYSIS OF SOLID, LIQUID AND GAS PHASE PROPERTIES OF SULPHUR DIOXIDE	279
M. Srećković, M. Drifford, J. P. Dalbiez and E. Hantz: THE COEFFICIENTS OF DIFFUSION OF SMALL MOLECULES MIXTURES, MICELLAR MILIEUX AND THEIR EXPLANATIONS ON THE BASIS OF LASER SCATTERING MEASUREMENTS	283
B. Žižić, A. Milutinović, P. Milutinović: GROWTH RATE DISPERSION AMONG ADP-MICROCRYSTALS. TEMPERATURE INFLUENCE ON THE RELATIVE WIDTH OF GAMMA DISTRIBUTION	289