



*Electronic Processes in Organic and
Inorganic Materials
(ICEPOM-12)*

**June 1 - 5, 2020
Kamianets-Podilskyi, Ukraine**

With support of
**Taras Shevchenko National University of Kyiv
Institute of Physics, NASU
Kamianets-Podilskyi National Ivan Ohienko University**



ICEPOM-12
Conference abstracts

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GREEN SYNTHESIS AND ADSORPTION PROPERTIES OF COBALT FERRITES

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Materials with spinel structure have long been a topic of interest because they exhibit different properties depending on synthesis method. In this research, we have used the green chemistry method for cobalt ferrites synthesis using of various plant extracts. The reducing capability of this plants is based on several reactive components such as polyphenols, terpenoids, amino acids etc.

Spinel type materials have long been a topic of interest because they may exhibit different sizes depending on synthesis method. In addition, they can be use as magnetic materials, pigments, catalysts and refractory materials. The aim of our research is to design an ecological method for the synthesis of magnetic nanoparticles with a high specific surface area. Spinel structure of magnetic nanoparticles has been confirmed by XRD and IR spectroscopy. The IR spectra contain two main peaks that correspond to tetrahedral and octahedral sites in spinel structure respectively, and few peaks in the range 1300-3700 cm^{-1} that shown surface functionalization of magnetic nanoparticles. The surface morphology and elemental composition were proved by using SEM and EDS respectively. The synthesized cobalt ferrites were investigated as magnetic adsorbents using anionic dye Congo red as model pollutant. In addition, the CoFe_2O_4 nanoparticles obtained by eco-friendly method using plant extract as chelating agent could be used as good candidate for biomedical applications, such as drug delivery and hyperthermia application.

AUTHOR INDEX

		A	
Abdinov A.Sh.	344, 345	Androulidaki M.	52
Abdinova G.D.	94, 179	Andrulevicienė V.	315
Abdullayeva I.A.	94	Anoshenko M.	65
Afanasyev D.A.	176	Antonenko O.	232
Agayev T.N.	177	Antonenko O.I.	105
Aghazade A.I.	209	Antonyuk N.	75
Akhmedova A.M.	177	Antypov I.	300, 313
Akhundova N.M.	179	Apostolova R.	57
Aksimentyeva E.I. .	144	Ardjoum N.	196
Aksimentyeva O.	119, 121, 138, 316, 320, 335	Artemenko A.	174
Alakbarova T.M.	268	Ariffin A.	315
Alekberov R.I.	93	Ariffin A.B.	330
Alekseev O.	250	Aslanov A.	154
Alekseeva T.T.	178	Astakhova O.	81, 180
Aliexsandrov M.A.	103	Astrelin I.	234
Aliiev Z.S.	268	Atayeva S.U.	50, 159
Aliyeva T.D.	179	Aurbach D.	57
Andriiko O. O.	217	Averchenko K.	277
Andriyevsky B.	66	Azhniuk Y.M.	51, 129
		B	
Babanly M.B.	181, 209, 219, 253, 268	Bei I.	182
Babčenko O.	174	Bek A.	160, 162, 183, 189, 343
Babnikov E.A.	77	Belous A. G.	220
Babkina N.	232	Berest V.P.	280
Babuka T.Ya.	227	Berezhnyska O.S	329, 338, 340
Bagiyeva G.Z.	179	Berezhnyy B.	184
Bakkali H.	170, 337	Berezovska N.	197
Balevicius V.	40	Berezovska N.I.	157
Bandura Kh.	216	Berezovskaya I.V.	104, 112, 261
Baran J.	204, 205	Bernard R.S.	315
Baran N.	184	Bespalova I.	140, 154
Barbash V.	52, 71	Bevzo V.	14
Barbash V.A.	69	Bezrodna T.V.	105, 141, 232
Barkhalov B.Sh.	179	Bezrodnyi V.I.	105, 141, 232
Bakhtiyarly I.B.	219	Bezvikonnyi O.	175, 207, 256, 315, 317
Barylo H.I.	18	Biliuk A.A.	106
Baumer V.N.	228	Bilyk S.	313
Bayramova U.R.	181	Bilogubka O.	185
Bazylyuk T.	65	Blanco E.	170, 337
Blashkiv O.	278	Bratychak M.	81, 180, 191, 310

Blazevicius D.	186, 323	Brazhnyk D.V.	80
Blazhynska M.M.	32	Brizhnik L.	9
Bliznyuk V.	139, 240	Brodin O.M.	167
Bliznyuk V.N.	173, 187	Brodyn M.S.	167
Blonskyi I.	197	Brovarets V.	230
Bogatyrov V.M.	148	Brovarets V. S.	26, 131
Bogoslovska A.	188	Brovko O.O.	105
Bondar O.O.	201	Bruzaud S.	276
Bordyuh H.	165	Brychenko I.	202
Borets A.	70	Bucinskas A.	175, 321
Borkovska L.	107, 318	Budianska L.V.	280
Borova M.	279	Budzinska V.	65, 182
Bortchagovsky E.G.	53, 56, 108, 188	Bugaychuk S.	165
Borynskyi V.Yu.	64	Bukhinik O.	192
Boryseiko O.	10	Bukivskii A.P.	110, 201
Borysenko M.	200	Bukivskii P.M.	110, 201
Bovgyra O.	55, 66	Bulavin L.A.	136
Boychuk V.	216	Bunyakina N.	198, 225
Boyko D.V.	20	Burlachenko J.	319
Boyko I.	109	Burlakov V.O.	54
Boyko V.	250	Busko T. O.	22, 97, 100

C

Candemir O.	160, 343	Chernii V.Y.	296
Cardin J.	318	Chernykh S.I.	251
Cekaviciute M.	193, 206	Chetrus P.	76
Çınar K.	183	Chisca D.	4
Ciobanu M.	58, 86	Chmil A.	28
Chaban O.	42	Chomicki D.	164
Chabecki P.	156	Chornenka N.	36, 296
Charnyi D.V.	97, 100	Chornous V. O.	211
Chavhan S.	323	Chornyi V.S.	291
Chayka M.	307	Chuenko R.M.	282
Chibani N.	196	Chudoba D.	136
Chigvintseva O.	264	Chuprina N.G.	62, 87
Chegel V.I.	22	Chygyrynents O.	342
Chekhun V.	292	Cociu V.	4
Chepurna O.M.	269	Coropceanu E. B.	239
Chernii S.V.	296	Croitlor L.	4

D

Dai F.	108	Davidenko N.	62, 87, 218, 221
Danilenko I.	124	Datsko T.	194
Davidenko I.	62, 87	Degoda V.	40, 293

Dehouche N.	276	Dotsenko I.	116
Demchenko A.P.	95	Dotsenko V.P.	104, 112
Dementjev A.	13, 29, 205	Doualan J.-L.	107, 318
Demianenko E.M.	111, 118	Dovbeshko G.	13, 27, 29
Demydenko Yu.V.	56	Dovhopyatyty Yu.	260
Denis L.V.	22	Drozd M.	204
Derevyanko N.A.	187	Dryuchko O.	198, 225
Derkowska-Zielinska B.	164	Dubey D.K.	323
DeVol T.A.	173, 187, 240	Dubey I.	30
Didenko K.	122	Dubey L.	30
Dimitriev O.P.	283	Dubok V.A.	291
Diyuk O.A.	142	Duca G.	8
Djidjelli H.	196	Dudok G.	236, 310
Dlubovskiy R.M.	228	Dukarov S.V.	69, 73
Dmitruk I.	197	Dupliak I.	199, 321
Dmitruk I.M.	157	Dusheyko M.	71, 240
Dmytruk A.	197	Dutka V.	121
Dmytruk I.M.	131	Dyachenko A.	200
Dmytrenko O.P.	103	Dzeryn M.	335
Dmytriv Yu.V.	211	Dzhafarova S.Z.	345
Dobrovolskiy A.	160	Dzhagan V.	99
Dorbani T.	250	Dzhagan V.M.	51
Doronin Yu.S.	258	Dzhafarova S.Z.	177
Doroschuk V.	281	Dziaman I.	236
Doroshenko I.	40, 43	Dziazko O.G.	201
Doroshenko I.P.	37, 293	Dzikovskiy V.	55, 66
Doroshenko I.Yu.	137	Dzundza B.	61
Doroshenko O.	40	Dzyadevych S.V.	308

E

Efryushina N.P.	112	El Haimour A.	170, 337
Eidimtas M.	186	Ennan A.A.	228
Eken K.	169	Ezhova V.	265
Eken S.K.	162, 195		

F

Fadieiev E.M.	261	Fenping L.	199
Faulques E.	258	Ferenchuk Ye.	14
Fechan A.	42, 184	Fesenko O.M.	96
Fedchenko A.	202	Fesych I.V.	110, 201, 238
Fedchenko A.N.	327	Filatov O.V.	54
Fedorenko G.V.	244	Filatova V.S.	15
Fedoryak O.M.	283	Fitio V.	321
Fleischer M.	108	Fomanyuk S.S.	84

Fochuk P.M.	223	Fomenko A.S.	203, 255
Fokin A.A.	72	Fonari M. S.	239

G

Gabchak O.L.	210	Gorban O.	124
Gagolkina Z.	122	Gorbyk P.P.	294
Galstian I.	113	Gorishnyi M.P.	96
Galunov N.	254	Gornitsky I.	198, 225
Gamernyk R.	153	Grankina I.	146
Ganizade G.F.	41	Grazulevicius J.V.	175, 193, 206, 207, 243, 248, 315, 317, 321, 325, 330, 331, 336
Gaponov A.M.	103	Grebenyuk A.G.	111, 115, 145
Garashchenko A.	75	Gridyakina A.	165
Garibova S. N.	50	Grigalevicius S.	186, 323
Gavrilkov T.	204, 205	Grishchenko L.N.	203, 255
Gayvoronsky V.G.	161, 168	Gruodyte A.	175
Gelmboldt V.O.	228	Grygorova G.	277, 309
Georgiev Y.S.	2	Grygorova G.V.	284
Gerda V.I.	114	Gryn D.V.	16, 37
Gerush I.	14	Grynko D.	188
Glamazda A.	30	Grytsenko O.	184
Glazunova V. A.	320	Gryshchouk G.	153
Globa N.I.	77	Grytsenko K.	339, 341
Glukhov K.E.	227	Gubanov V.	5, 12, 98, 116
Glushko E.Ya.	59	Gubriy Z.V.	45
Gnatenko Yu.P.	110	Gudeika D.	137, 207, 243, 317, 331
Gnatyuk I.	205	Gudyma Iu.	208
Gnatyuk O.	13, 29	Gudimenko V.A.	215
Gnilitskiy I.	240	Gudymenko O.	249
Goleus V.	79	Gumienna-Kontecka E.	36
Golovina I. S.	217, 220	Guozhu Y.	199
Golovynskiy S.	157	Gura S.	192
Gomeniuk Yu.V.	249	Gurova Yu.	17
Gomenyuk O.	250	Guryn P.O.	15
Gomonnai A.V.	51	Guzauskas M.	248, 336
Gomory A.	305	Guzenko N.V.	210
Goncharenko N.G.	20	Gvozдовskyy I.A.	160, 211
Goncharov V.V.	80		
Goncharuk O.	200		

H

Hajiali A.	212	Hanulia T.	27
Hajiyeva F.V.	159	Harbuz D.O.	215
Halechko H.	121	Havryliuk O.O.	106
Hamamda S.	250	Herus A.O.	258

Hodlevska M.	216	Hrytsko H.	235
Hodlevskiyi M.	216	Hsueh T.-C.	323
Horbatenko Yu.V.	322	Hubenko K.	297
Horbenko Yu.	335	Hubenko K.O.	285, 312
Horbenko Yu.Yu.	138, 320	Hura A.O.	246
Horiunova I.	279	Huseynova A.S.	159
Hrabovsky E.	197	Husson S.M.	187

I

Iarova N.	178	Ishkov Yu.V.	228
Ibragimov T.D.	41	Ismailova E.N.	219
Ibrayev N.Kh.	143, 155, 176	Iukhymenko N.	65, 182, 242
Idres C.	276	Ivanytska I.	198, 225
Idrissi A.	32	Ivakh M.S.	18
Ilchenko M.	30	Ivakha N.	329
Ilchuk H.	55, 66, 78	Ivanenko I.	202, 234
Ilnytskyi Y.	42	Ivanitska V.G.	223
Ilyin P.P.	97, 100	Ivaniuk Kh.	321
Imamaliyev A.R.	41	Ivaniuk K.	199, 206, 256
Imamaliyeva S.Z.	209, 268	Ivaniuk H.B.	320
Isayev A.I.	7, 50, 93	Ivanov O.V.	201
Isaeva O.	99	Ivanov V.V.	32, 117
Ischenko O.	200	Ivashchysyn F.	156
Ishchenko A.A.	143, 176, 187, 221		

J

Jeżowski A.	322	Jou J.-H.	323
-------------	-----	-----------	-----

K

Kachkovsky A.	12	Karachevtsev V.	30
Kachkovsky O. D.	26, 131	Karbovnyk I.D.	138
Kadan V.	169	Karpenko O.S.	111, 118
Kadashchuk A.	6, 152, 333	Karpenko S.	75
Kachmar A.	216	Karpenko Yu.V.	224
Kaci M.	276	Karpicz R.	205, 254
Kalchenko V.I.	68	Kartel M.T.	118, 289
Kaleinikova O.	278	Kartel N.T.	111
Kalugin O.N.	32	Karvatskiy I.	278
Kamarchuk G.V.	215, 222, 258	Kasatkin A.L.	88
Kamarchuk L.V.	222	Kashuba A.	55, 66, 78
Kanak L.M.	223	Kavetskiy T	151
Kanchev K.S.	2	Kavok N.S.	277, 285
Kanyuk M.I.	22	Kazantseva Z.I.	68, 160
Kapush O.	279	Keda T.Ie.	74

Kenaz R.	108	Kolendo A.Yu.	161, 168, 242, 270
Kerita O.	254	Kolesnik V. M.	133
Keruckas J.	325	Kolosova O.	21
Keruckiene R.	206	Komarenko D.	161
Kettouche H. S.	213	Kondratenko O.	271
Khabuseva S.	21	Kondratenko O.S.	60, 328
Khaniukov V.	198, 225	Kondratenko S.	52
Kharchenko O.	164, 226	Konopelnik O.I.	119
Kharchenko T.O.	286, 306	Konotop A.P.	215
Kharkhalis L.Yu.	227	Kopach V.R.	69, 73
Khatsevich O.M.	272	Kopčanský P.	47
Khilya O.V.	74	Korenivski V.	64
Khlebnikova M.E.	104, 112	Kormienko N.E.	5, 11, 98, 101
Khodzhaeva R.S.	19	Kornii A.	70
Khoma R.E.	228	Kornii Y.	230
Khomenko A.V.	20, 23, 25	Korobeinyk A.V.	231
Khomenko O.V.	104, 112	Korobsky V.V.	245
Khomenkova L.Yu.	252	Korolyuk O.A.	322
Khomyak S.V.	45	Korostil A.M.	166
Khristenko I.V.	117	Korsunskaya N.O.	252
Khrypunova A.L.	69	Kosevich M.	305
Khrypunova I.V.	73	Koshets I.A.	68
Khyzhun O.	249	Kosogina I.	202
Kinzhybalov V.	256	Kostetskyi A.O.	120
Kiose T.A.	267	Kosyanchuk L.	232
Kirichenko M.V.	73	Kosyanchuk L.F.	105, 141
Kisyl D.	249	Kotova N.V.	328
Kitova S.	2	Kotsun V.	42
Klenina O.	287	Kotsyubynsky V.	216
Klepikova K.S.	69, 73	Koval V.M.	71
Klepko V.	326	Kovalchuk O.V.	47, 48
Klepko V.V.	203, 255	Kovalchuk S.I.	288
Klishevich G.V.	141	Kovalenko M.	55, 66
Klochko N.P.	69, 73	Kovalenko S.I.	33
Klochkov V.	277	Kovalenko S.M.	32
Klochkov V.K.	284, 285, 312	Kovalska V.	36, 296
Klymchuk D.O.	203, 255	Kovalskyi Ya.	121
Kniazieva K.S.	45	Kowalonek J.	164
Kobzev D.	21	Kozak N.	122, 232
Koci K.	262	Kozak N.V.	178
Köhler A.	152	Kozakevych R.B.	233
Koksharova T.V.	229, 241	Kozanecka-Szmigiel A.	164
Kołaćnińska K.	173	Kozoriz K.	318
Kolbasov G.Ya.	75, 84	Kozyreva T.	79
Koledov V.V.	144	Kramar O.	260

Krasinskiy V.	263	Kukh A.	234
Kravchenko A.V.	222	Kukhta N.	206
Kravchenko I.	274	Kukla O.	139
Kravchenko T.V.	246	Kukla O.L.	324, 327
Kravchenko V.V.	62, 87	Kulai I.	168
Kravchuk R.	160	Kulikov L.V.	11
Kravets A.F.	64	Kulikova O.	4, 239
Kravtsov V. Ch.	239	Kulish M.	134
Kremer I.P.	18	Kulish M. P.	22, 97, 100, 103
Krivchikov A. I.	322	Kunitskaya L.	326
Krivets O.S.	171	Kuranda N.N.	87
Krivoruchko Ya.S.	344	Kurnosov V.	124
Kromka A.	174	Kurochka L.I.	100
Krucaite G.	186, 323	Kurta S. A.	272
Kruglenko I.	319	Kusyak A.P.	294
Kruglyak O.	257	Kusyak N.V.	291, 294
Krupa M.M.	166	Kutsevol N.	123, 235, 274, 278
Krupka O.	164, 226		280, 281, 292, 298, 301, 303
Krupskaya T.V.	289	Kutsiy S.	256
Krysa B.V.	290	Kuziv Yu.I.	235, 378, 380, 292
Krysa V. M.	290, 301	Kychkyruk O.	273, 332
Kryshenik V.M.	51	Kyrychenko A.V.	17, 32
Kublanovsky V.	89	Kysil A. I.	170, 327
Kublanovsky V.S.	77	Kysil Kh.	236
Kudrya V.Yu.	157	Kytaihora K.	198, 225

L

Labbé C.	318	Leonenko E.	151
Lamkiewicz J.	34	Leonov V.O.	128
Lamonova K.	124	Lesiuk A.I.	22
Lazarenko M.	52, 250	Levchenko G.G.	238
Lazarenko O.	125	Levchyk V.M.	91
Lazarev I.	254	Levkov I.V.	170, 337
Lazoryk I.V.	126	Liakh M.V.	227
Le Normand F.	147	Liakovetskyi V.R.	167
Lebedev V.	237	Liaskovska M.	295
Lebedyeva I.	10	Liedienov N.A.	238
Lelyushok S.	281	Lin W.K.	330
Lemishko S. V.	217, 220	Lisetski L.N.	211
Len E.	113	Lisnyak V.V.	70
Len E.G.	127	Lizunov V. V.	127
Len T. A.	132, 147	Lobanov V.V.	334
Len T. S.	127	Logvinenko D.T.	23
Lendel V.V.	201	Lokshyn M.	307
Lopatina Ya.Yu.	72	Luchynets M.M.	47

Lopatynskiy A.M.	22	Lunko T.S.	60, 328
Lopushanska B.V.	129	Lutsenko L.V.	244
Lopushansky V.V.	51, 129	Lutsyk P.M.	120
Losytskyy M.	40	Lysenko V.	307
Losytskyy M.Y.	137, 293, 296	Lytvyn R.	256
Loya V.Y.	51	Lytvynenko A.	278
Lozovan V. N.	239	Lytvynenko Ya.M.	64
Lozovski V.	307	Lyubov V.M.	73
Lozitsky O.V.	130, 132		
M			
Magunov I.	90	Mazur N.	99
Maiko K.O.	131	Mazur T.	61
Makeeva I. M.	133	Matzui L.	125
Makeiev A.M.	74	Matzui L.Yu.	130, 132, 147, 148
Maksimchuk P.	124, 154, 297, 304, 309	Medyk I.	75
Maksimchuk P.O.	285, 312	Mekhtiyeva S.I.	7, 50, 93
Maksymov A.	208	Melekhovets O.	286, 299, 306
Maksymovych N.P.	244, 247	Melekhovets Y.	286, 299, 306
Maksymych V.	156	Melikova S.Z.	177
Malek M	325	Melnic E.	4
Malynovskiy M. B.	44	Melnik N.	235
Malyukin Yu.	124, 140, 146, 154, 297, 304, 309	Melnyk D. O.	24
Malyukin Yu.V.	284, 285, 312	Melnyk O. Ja.	24
Maltseva T.	89	Melnyk V.I.	141
Mammadova A.T.	209	Melnyk Yu.	310
Mammadova H.I.	7	Merzhyievskiy D.O.	131
Mamontova I.B.	60, 328	Miannay F.-A.	32
Mamunya Ye.	134	Milekhin I.	108
Mamykin S.V.	60, 63, 67, 240, 328	Milokhov D.S.	74
Mamykin A.V.	139, 324	Mishura V.	299
Mandzii T.V.	229, 241	Misiura A.	134
Manousaki A.	52	Mocreac O.	86
Marchenko A.A.	72	Mokrinskaya E.V.	62, 87, 221
Markovsky B.	57	Mosendz A.O.	91
Marton M.	174	Mozkova O.	90
Martynes-Harsiia A.	242	Mrachkovska N.	300
Martynuk V.	298, 303	Mrachkovsky A.M.	245
Marynin A.I.	269	Mukha Yu.	307
Mashadiyeva L.F.	181, 219	Multian V.	161, 168
Masimukku N.	243	Musina A.O.	246
Mateychenko P.V.	215	Myagchenko Yu.	43
Matkivska G. M.	320	Myhalchuk A.O.	340
Matushko I.P.	244, 247	Mykhailova H.Yu.	135
Mazna Yu.I.	38	Mykytyuk Z.M.	18, 45
		Myronyuk I.	139

N

Nadtoka O.	97, 281, 298, 301, 303	Nedilko S.A.	201
Nagorna T.V.	136	Nedilko S.G.	52, 250
Nalyvaiko V.	300	Negriyko A.M.	105
Naoui Y.	250	Nesin S.	122
Nasiri S.	315	Nessin S.	326
Nasser H.	189, 343	Nikitchuk O.	263
Narbutaitis E.	248	Nikitenko V.M.	77
Naumenko A.P.	5, 11, 12, 98, 101, 116, 123, 137, 279	Nikolaeva O.A.	269, 271, 293
Navozenko A.	12	Nikolaiev R.O.	251
Navozenko O.M.	137, 341	Nikolenko A.	27, 29
Nazar A.P.	267	Nicorici V.	76
Nazarov A.	249	Nosenko V.	318
Nazarov A.N.	67	Nosenko V.V.	252
Nazarova T.	249	Noskov Yu.	139, 173

O

Obernikhina N.V.	26, 131	Olenych Yu.I.	138
Oblovatna S.	75	Oliinyk Y.	28
Obukhova O.	21	Oliynyk V.	257
Obushak M.	256	Oliynyk V.V.	130
Ogurtsov N.	139, 257	Omastova M.	134
Ogurtsov N.A.	173, 324	Omieliaeva V.	297
Ogurtsov V.	287	Onanko A.P.	97, 100, 103
Ohulchanskyy T.Y.	37, 269, 293, 302	Onanko Y.A.	97, 100
Okovytyy S. I.	33	Oranska O.I.	210
Okrushko E.	304, 309	Orel S.	124
Okulov S.M.	252	Orujlu E.N.	253
Okushko O.	300	Ostapenko N.	254
Oleksenko L.P.	244, 247	Ostapenko Yu.	254
Olenchuk M.	27	Ovdenko V.	161, 168, 218, 221
Olenych I.B.	138	Ovsiienko I. V.	147

P

Pak V.	299	Pavlov V.	62, 87, 218, 221
Paluszkiewicz C.	29	Pavlova S.	169, 195
Panasenko A. I.	224	Pavlusiak N.	249
Pancheva H.	259	Pashchenko A.V.	238
Papadopoulos A.	52	Pashkevich Yu.	124
Pashazadeh R.	206	Pashynska V.	305
Pavlenko V.	235	Patoka V. I.	133
Pavlov E.	3	Pavlenko O.L.	22, 97, 100
Pavlov I.	160, 169, 189, 195, 343	Pavlenko T.V.	83

Perederii O.	27	Pogorelov O.E.	54
Permyakova N.M.	203, 255	Pogrebnyak V.G.	238
Persson B.N.J.	23, 25	Pokhodylo N.	256
Petkov V.D.	2	Poletaev N.I.	104, 112
Petranovska A.L.	294	Polishchuk D.M.	64
Petrina R.O.	18, 45	Polishchuk V.	313
Petrov E.G.	128	Polupan Ya.	254
Petrovska H.	321	Polyshchuk L.M.	233
Petrus R.	55, 66, 78	Popovych D.I.	126
Petrushenko S.I.	69, 73	Pospelov A.P.	215, 222, 258
Petrychuk M.	257	Powell B.A.	173
Petryk I.	262	Prochazka M.	134
Piergies N.	29	Prokopets V.	250
Pilipenko A.	192, 259	Prokopiv M. M.	217
Pinchuk-Rugal T.M.	22, 97, 100, 103	Prokopiv V.	61
Piryatynski Yu.P.	44, 120, 131	Prostota Ya.O.	131
Pitkovich Kh.	256	Prystai T.V.	18
Pliusnina M.	4	Pud A.A.	139, 173, 257, 324
Plokhovska S.	279	Pundyk I.P.	22
Poberezhets S.I.	47	Pylypenko A.	134
Podust G.	40, 293	Pylypenko O. O.	33
Pogodin A.I.	47		

Q

Qu J.	157
-------	-----

R

Rabiy V.I.	119	Romantsova O.O.	322
Rachkov A.	107	Romanyuk V.R.	60
Radchenko T.M.	150	Ropakova I.	140
Radfar B.	189	Roshal A.D.	17, 19
Radko A.S.	286, 306	Roshchin O.M.	141
Radko I.	300	Rozhin A.	120
Raievska O.	99	Rozhkovskiy O.M.	97
Rakitskaya T.L.	267	Rud M.	113
Ramazanov M.A.	159	Rudenko V.I.	167
Rapaport R.	108	Rudnichenko A.V.	211
Rashevskaya A.	35	Rusakova N.V.	261
Rawiso M.	292	Rusavsky A.	249
Revo S.	250	Rusavsky A.V.	67
Ripko O.P.	247	Rusetskii I.A.	84
Rogovtsov O.O.	83	Rusinchuk N.	307
Romanov M.D.	215	Ryazanova O.	30
Romanova E.	31	Rybak A.	160

S

Sachuk O.V.	142	Shyshchak O.	81, 180
Sadykova A.E.	155	Sihunov O.O.	246
Saenko G. V.	147	Silchenko D.	259
Saiapina O.Y.	308	Simokaitiene J.	193, 206, 325, 336
Salei An.	79	Sini G.	193
Salman S.H.	162	Siniugina A.T.	82
Sanzhak O.V.	80	Skhirtladze L.	330
Savchenko I.O.	271, 273, 329, 332, 338	Skorenkyy Yu.	260
Savchenko O.	229, 241	Skorobahatko M.V.	211
Savytskyi A.V.	258	Skorokhoda V.	236, 310
Scherbatskii V.	52, 250	Skowroński Ł.	164
Scolyar G.I.	247	Skuodis E.	206, 331
Seliman A.F.	187	Slisenko O.	182, 265
Seliverstova E.V.	143	Sliusarchuk L.I.	83
Selyshchev O.	99	Slobodian O.	249
Semchuk O.Yu.	106	Slominskii Yu.L.	137, 283, 341
Semenova O.	21	Smertenko P.	151
Semenyuk N.	236, 310	Smilyk V.O.	84
Seminko V.	124, 154, 297, 304, 309	Smirnova O.V.	145
Semikina T.V.	63, 67	Smokal V.	164, 226
Semkiv I.	55, 66, 78	Smola S.S.	261
Serdiuk I.E.	19	Snegurskaya T.	31
Serednytski A.S.	126	Snegursky A.	31
Sergeieva T.	33	Snopok B.	319
Shablykin O.	131, 230	Solonenko D.	51, 129
Shapovalov V.A.	144	Solopan S. O.	220
Shapovalov V. V.	144	Song C.	238
Sharanov I.P.	283	Sorokin A.	140, 146
Shatnii T. D.	127	Spodoba M.O.	311
Shavrov V.G.	144	Spylka D. O.	147
Shcherbakov O.B.	293	Sribna V.	278
Shcherban N.	204	Stakhira P.	206, 256, 321
Shcherban N.D.	205	Stanicka M.	256
Sheludko V.	250	Stankevich A.	333
Shembel E.	57	Stanoeva N.A.	2
Shevelkov A.V.	219	Stanovyi O.	197
Shevchenko Ye.V.	128	Styopkin V.I.	167, 204
Shirshov Yu.M.	327	Stara T.	318
Shkolnikova T.	259	Starukh H.	262
Shmatok Yu.V.	77	Starykov G.O.	320
Shmeleva L. V.	102	Stashkiv O.	153
Shmyryeva L.N.	63	Stepanenko O.	21
Shukurova G.M.	181	Stepanenko Ye.Yu.	46, 251
Shyrchenko D.	226	Stepaniuk D.S.	32

Stepanov V.	249	Suprun A.D.	102
Sternik D.	271, 273, 332	Surovtseva E.R.	327
Storozhenko D.	198, 225	Sutkuvienė S.	186
Stoianov Yu.	109	Swayamprabha S.S.	323
Strizhak P.	151	Sych G.	315, 336
Stroyuk O.	99	Syromiatnikov V.	270
Studenyak I.P.	47, 129	Syrotynska I.	34
Studzinsky S.L.	62, 82, 85, 87, 114	Sytnik O.	299
Styopkin V.	165	Syvolozhskiy O. A.	125, 148
Sviatenko L. K.	33	Szewczyk D.	322
Suberlyak O.	184, 263	Szmigiel D.	164
Sukhov V.M.	69		

T

Tagare J.	323	Tolstov A.	265
Tagiyev M.M.	94, 149, 177	Tolstov O.	182
Tamuliene E.	31	Tomchuk A.V.	157
Tan X.	206	Tomkeviciene A.	206, 256
Tananaiko O.	70	Tovstenko-Zabelin M.	271
Tang J.	108	Tovstolytkin A.I.	64
Tarasenko S.	311	Trepachko M.	217
Tatarchuk T.	295	Tretyakova I.M.	296
Tatarenko V.A.	150	Truba A.S.	267
Tatarets A.	21	Trunova E.K.	329
Tavgeniene D.	186	Trunova O.K.	83, 338
Telbiz G.	151	Tsapko E.	113
Temirbayeva D.A.	143	Tsaregradskaya T. L.	147
Terebinska M.I.	334	Tsiulyanu D.	58, 86
Terentyeva Yu.	35	Tsizh B.	335
Tereshchenko O.	43	Tsupryk H.	109
Tertykh V.A.	231, 233	Tsvitkovskiy V.P.	88
Teselko P.	52, 197, 250	Tsyba M.M.	142
Teselko P.O.	157	Tunçkol E.	195
Timko M.	47	Tupychak M.	256
Tkach V.I.	144	Turan R.	189
Tkachuk O.I.	334	Türker V.	162, 195
Tkachuk Z.U.	16	Turkov O.V.	132
Tkachuk Z. Yu.	46, 251	Turov V.V.	289
Tokar A.V.	264	Tykhomyrova T.	237

U

Uklein A.	168	Urbonas E.	256
Ukrainets N.	78	Ushakov M. V.	127
Ukrainsev E.	174		

V

Vaidyanathan S.	323	Vistak M.	320
Vahula O.A.	327	Vityuk N.	307
Vakarov S.	36	Vlasenko N.	151
Vakhnin A.	152, 333	Vodzinskiy S.V.	228
Vakula V.L.	258	Voitenko T.A.	201
Valkunas L.	254	Voitenko Z.V.	170, 337
Vartik P.	43	Vojs M.	174
Vashchenko O.V.	280	Volchak G.	90
Vasilev A.	2	Volkova G.	124
Vasilieva A.V.	117	Volkova V.Y.	267
Vasin A.	249	Voloshin I.	30
Vasin A.V.	67	Voloshin Y.	36
Vasylechko V.	153	Volovenko Yu.M.	74
Vasylyev M.O.	15, 133	Volyniuk D.	175, 193, 206, 207, 243, 248,256, 315, 321, 331, 336
Veligina E. S.	26	Vorobets V.	75
Venhryn Yu.I.	126	Vorona I.	318
Verbitsky A.B.	120	Vorona I.P.	220, 252
Viagin O.	124, 154	Vovchenko L.L.	130, 132, 148
Vicol C.	8	Vovk M. V.	211
Videva V.	2	Vovk V.E.	48
Viduta L.	165	Voynarovych I.M.	51
Vilchinskiy V.V.	148	Voznesenskaya T.	278
Vinogradova-Anyk O.	278	Vretik L.	203, 255, 269, 271, 293, 332
Virsta T.	121	Vukstich V.	31
Viryh Pavlo	298, 301, 303	Vyshnevsky D.	218, 221, 270
Viryh Petro	303		

W

Wårgberg T.	174	Wojkiewicz J.-L.	139
-------------	-----	------------------	-----

X

Xue B.	157		
--------	-----	--	--

Y

Yadav R.A.K.	323	Yashchenko O.V.	69
Yağcı E.	169	Yashchuk V.M.	3, 10, 16, 37, 40, 46, 137, 293
Yağcı M.E.	162, 195	Yefimova S.L.	140, 146, 284, 285, 297, 312
Yakovenko O.S.	148	Yegorova T. V.	170, 337
Yakovyna V.	42	Yeremenko A.V.	222
Yakubiak M.R.	272	Yeshchenko O.	197
Yanovska E.	271, 273, 332	Yeshchenko O.A.	157
Yapontseva Yu.	89		
Yashchenko O.	52		

Yuchen L.	199	Yushchenko O.V.	171
Yukhymchuk V. O.	220		
Z			
Zablodskiy M.M.	282, 288, 311	Zinchenko V.	90
Zagrodnii V.	257	Ziółkowska D.	34
Zagrodnii V.V.	130	Zhadan D.O.	69, 73
Zagrodnaya S.	307	Zhang B.	186
Zahn D.	108	Zheleznova L.I.	83
Zahn D.R.T.	51, 99, 129	Zheltonozhskaya T.	203, 255, 326
Zakharov M.V.	25	Zhugayevych A.	152
Zapukhlyak R.	216	Zhuk T.S.	72
Zazhigalov V.A.	80, 142	Zhumabekov A.Zh.	155
Zelenko M.A.	201	Zhuravkov O.	125
Zelentsov V.	194	Zolfaghari Borra M.	189, 343
Zelinskiy A.	153	Zorin V.	123, 274, 292
Zembouai I.	276	Zorina T.	274
Zeynalova G.S.	209	Zubrevicius R.	331
Zimenkovsky B.	287	Zui M.F.	91
Zinchenko O.	265	Zuy O.V.	38

CONTENTS

SECTION 1. Electronic processes at interfaces of organic materials with metals, as well as biological, organic, and inorganic media

ANALOGUES OF THIAZOLE ORANGE – NEW SYNTHETIC CONDITIONS AND PHOTOPHYSICAL PROPERTIES OF LIOPHILIC ASSYMETRIC MONOMERIC MONOMETHINE CYANINE DYES – NONCOVALENT NUCLEIC ACIDS BINDERS	2
V. Videva, A. Vasilev, S Kitova, Y. S. Georgiev, K. S. Kanchev, N. Al. Stanoeva, V. D. Petkov	
NESTED MAPPING FOR DECONVOLUTION AND FUNCTION TRANSITION	3
Eugen Pavlov, Valeriy Yashchuk	
PHOTOLUMINESCENCE PROPERTIES OF SIX NEW METAL-ORGANIC COMPOUNDS WITH 4,4-DIAMINODIPHENYLMETHANE LIGAND	4
O. Kulikova, V.Cociu, M.Pliusnina, E.Melnic, L. Croitor, D. Chisca	
ANTISTOKS AND STOKS RAMAN SCATTERING IN MOLYBDENUM DISULPHIDE (MoS ₂) AND GRAPHENE UNDER EXCITATION BY CONTINUOUS LASER RADIATION	5
Kornienko N.E., Naumenko A.P., Gubanov V.O.	
DETERMINATION OF THE DENSITY-OF-STATES IN OLED ORGANIC SEMICONDUCTORS USING THERMALLY STIMULATED LUMINESCENCE	6
Andrey Kodashchuk	
THE STUDY OF THE CHARACTERISTICS I – V FOR THE CHALCOGENIDE GLASS COMPOSITIONS WITH SANDWICH STURCTURE Te-Ge _{8.33} As _{16.67} Te ₇₅ - Al, Te-Ge ₁₀ As ₂₀ Te ₇₀ -Al AND Te-Ge _{12.5} As ₂₅ Te _{62.5} -Al	7
A.I. Isayev, S.I. Mekhtiyeva, H.I. Mammadova	
THE INFLUENCE OF TARTARIC ACID ON DPPH RADICAL SCAVENGING ACTIVITY OF VITAMIN C	8
Crina Vicol, Gheorghe Duca	
SOLITON FACILITATED LONG-RANGE ELECTRON TRANSPORT IN DONOR-POLYMER-ACCEPTOR SYSTEM	9
Larissa Brizhik	
INFLUENCE OF SPATIAL STATIC AND DYNAMIC INHOMOGENEITIES ON THE DISTRIBUTION OF ELECTROELASTIC FIELDS AND ELECTRONIC PROCESSES IN PIEZOCERAMIC COMPOSITES	10
I. Lebedyeva, V. Yashchuk, O. Boryseiko	
OBSERVATION OF GRAPHENE- AND DIAMOND-LIKE NANOSTRUCTURES IN MoS ₂ -BASEDCOMPOSITES WITH SMALL CARBON ADDITIVES	11
Kornienko N.E., Naumenko A.P., Kulikov L.M.	
ORGANIC DYE GRAPHENE HYBRID STRUCTURES: AN AB INITIO STUDY	12
A. Navozenko, A. Naumenko, V. Gubanov, A. Kachkovsky	
COHERENT ANTI-STOKES RAMAN SCATTERING SPECTROSCOPY AND IMAGING OF DNA ON GRAPHENE LAYERS	13
Galyna Dovbeshko , Olena Gnatyuk , Andrej Dementjev	

ELECTRON TRANSPORT CHAIN IN THE LIVER BY KIDNEY DISEASE Ferenchuk Ye., Bevzo V., Gerush I.	14
CHANGE OF ELECTROCHEMICAL POTENTIALS FOR DENTAL IMPLANTS SURFACE IN A PHYSIOLOGICAL SOLUTION M.O. Vasylyev, V.S. Filatova, P.O. Guryin	15
SOME PECULIARITIES OF SPECTRAL PROPERTIES OF VARIOUS COMPOUNDS OF ADENINE NUCLEOTIDE AND POLYNUCLEOTIDE Gryn D.V., Yashchuk V.M., Tkachuk Z.U.	16
COMPLEX FORMATION OF α -POPOP WITH THE ALKALINE EARTH METAL IONS IN ACETONITRILE SOLUTION: DFT AND MOLECULAR DYNAMICS SIMULATION STUDIES Yuliia O. Gurova, Alexander D. Roshal, Alexander V. Kyrychenko	17
OPTICAL SENSOR FOR DETECTING THE AMINO ACIDS CONCENTRATION IN AQUEOUS SOLUTIONS Mykytyuk Z.M., Barylo H.I., Petrina R.O., Kremer I.P., Ivakh M.S., Prystai T.V.	18
8-FORMYL-7-HYDROXYFLAVONE AS ION SENSOR. COMPLEX FORMATION WITH Mg^{2+} IONS Ruslana S. Khodzhaieva, Iliia E. Serdiuk, Alexander D. Roshal	19
COMPUTER MODELING OF FRICTION OF ULTRATHIN LAYER OF CARBON DISULFIDE CONFINED BETWEEN DIAMOND SURFACES A.V. Khomenko, D.V. Boyko, N.G. Goncharenko	20
INFLUENCE OF HEAVY HALOGEN ATOMS ON SPECTRAL PROPERTIES AND QUANTUM YIELDS OF HEPTAMETHINE CYANINE DYES D. Kobzev, O. Semenova, O. Obukhova, S. Khabuseva, O. Kolosova, O. Stepanenko, A. Tatartsev	21
MECHANISMS OF THE INTERACTION OF BOVINE SERUM ALBUMIN WITH GEMCITABINE A.I. Lesiuk, O.P. Dmytrenko, T.O. Busko, O.L. Pavlenko, I.P. Pundyk, T.M. Pinchuk- Rugal, M. P. Kulish, Chegel V.I., A.M. Lopatynskyi, Kanyuk M.I., L.V. Denis	22
STATISTICAL REPRESENTATION OF SELF-SIMILAR MODE OF ICE SURFACE PREMELTING DURING FRICTION A.V. Khomenko ^a , D.T. Logvinenko, B.N.J. Persson	23
REASONS FOR CHANGING THE ABSORPTION SPECTRUM IN THE ASSOCIATION OF NEW METHYLENE BLUE WITH SURFACTANTS Melnyk D. O., Melnyk O. Ja.	24
MOLECULAR DYNAMICS OF FRICTION OF METAL NANOPARTICLES ADSORBED ON GRAPHENE SHEET A.V. Khomenko ^{a,b} , M.V. Zakharov ^a , B.N.J. Persson	25
ENERGY OF THE ROTATION BARRIERS PHENYL SUBSTITUENTS IN PYRAZOLO[1,5- <i>a</i>][1,3,5]TRIAZINES AS A FACTOR THE STABILIZATION OF [PHARMACOPHORE-BIOMOLECULE] COMPLEX	26

E. S. Veligina, N. V. Obernikhina, O. D. Kachkovsky, V. S. Brovarets ENHANCED DNA RAMAN MODES PROBED BY SiO ₂ PHOTONIC CRYSTALS	27
M. Olenchuk, T. Hanulia, O. Perederii, A. Nikolenko, G. Dovbeshko DEVELOPMENT OF AN EFFECTIVE METHOD OF MANURE CLEANING ON PIG COMPLEXES USING HIGH-VOLTAGE ELECTRIC-PULSE EQUIPMENT	28
A. Chmil, Y. Oliinyk INFRARED AND CARS SPECTROSCOPY STUDY OF MITOCHONDRIA	
I. Polovyi, N. Piergies, C. Paluszkiwicz, A. Dementjev, O. Gnatyuk, A. Nikolenko, G. Dovbeshko	29
SELF-ASSEMBLED PORPHYRIN AGGREGATES ON BIOPOLYMER SURFACE AS A PLATFORM FOR LIGHT HARVESTING AND ENERGY TRANSFER	30
O. Ryazanova, I. Voloshin, A. Glamazda, L. Dubey, M. Ilchenko, I. Dubey, V. Karachevtsev	
HIGH- AND LOW- ENERGY IONIZING RADIATION EFFECT ON THE BIOLOGICALLY RELEVANT AMINO ACID VALINE MOLECULE	31
A. Snegursky, E. Tamuliene, V. Vukstich, T. Snegurskaya, E. Romanova COUMARIN BASED DONOR-ACCEPTOR DYES FOR DYE-SENSITIZED SOLAR CELLS. THEORETICAL INVESTIGATION	32
Stepaniuk D.S., Blazhynska M.M., Kalugin O.N., Kovalenko S.M., Kyrychenko A.V., Miannay F.-A., Idrissi A., Ivanov V.V.	
ELECTRONIC PROPERTIES OF 1,2,4-TRIAZOLE DERIVATIVES: A DFT STUDY	33
O. O. Pylypenko, S. I. Okovytyy, L. K. Sviatenko, T. Sergeieva, S. I. Kovalenko FORMATION OF ION ASSOCIATES IN THE CARRAGEENAN - PINACYANOL SYSTEM	34
Iryna Syrotynska, Dorota Ziółkowska, Jan Lamkiewicz TOWARDS THE UNDERSTANDING OF NAD(H) COENZYME FLUORESCENCE AT AMBIENT CONDITIONS	35
Yuliya Terentyeva ^a , Anastasiia Rashevka CD SENSITIVITY OF THE MONO-CARBOXYPHENYLSULFIDE IRON(II) CLATHROCHELATES TO GLOBULAR PROTEINS	36
N. Chornenka, S. Vakarov, E. Gumienna-Kontecka, Y. Voloshin, V Kovalska THE SPECTRAL MANIFESTATIONS OF INTERACTION BETWEEN DNA AND METAL IONS	37
Gryn D.V., Yashchuk V.M., Ohulchanskyy T.Y., Doroshenko I.P. COMPARISON OF SORBENTS FOR THE REMOVAL OF ORGANIC COMPOUNDS THAT INTERFERE WITH THE DETERMINATION OF BROMIDE IONS IN NATURAL WATERS	38
O.V. Zuy, Yu.I. Mazna SECTION 2. Electro-optic processes in liquid-crystal-based heterogeneous systems SPECTROSCOPIC STUDY OF SELF-ASSEMBLING PROCESSES IN AQUEOUS SOLUTIONS OF LYOTROPIC LIQUID CRYSTALS	40

I. Doroshenko, G. Podust, V. Degoda, M. Losytskyy, V. M. Yashchuk, O. Doroshenko, V. Balevicius	
DIELECTRIC RELAXATION AND ELECTROOPTIC EFFECTS IN FULLERENES-DOPED NEMATIC LIQUID CRYSTALS	41
T.D.Ibragimov, A.R.Imamaliyev, G.F.Ganizade	
DYNAMIC CHARACTERISTICS OF THE ELECTRICALLY DRIVEN LIQUID CRYSTAL PLANARS LIGHT GUIDE	42
O. Chaban, A. Fechan, Y. Ilnytskiy, V. Kotsun, V. Yakovyna	
SPECTROPHOTOMETRIC STUDY OF RELATIVE CONTENT OF FLAVONOIDS IN NATURAL OBJECTS	43
Yu. Myagchenko, O. Tereshchenko, P.Vartik, I. Doroshenko	
INFLUENCE OF MEROCYANINE DYE AGGREGATION ON SINGLE AND DOUBLE-PHOTON EXCITATION OF FLUORESCENCE IN A LIQUID CRYSTAL TEMPLATE	44
M. B. Malynovskyi, Yu. P. Piryatinski	
IDENTIFICATION AMINO ACIDS IN CALLUS BIOMASS OF PLANTS BY OPTICAL SENSOR	45
Petrina R.O., Khomyak S.V., Gubriy Z.V., Kniazieva K.S., Mykytyuk Z.M.	
SPECTRAL STUDIES OF THE COMPLEX OF ADENOSINE MONOPHOSPHATE AND D-MANNITOL	46
Ye. Yu. Stepanenko, V.M.Yashchuk, Z. Yu. Tkachuk	
ELECTRICAL CONDUCTIVITY OF COMPOSITES BASED ON 6CB LIQUID CRYSTAL AND (Cu ₆ PS ₅ I) _{0.5} (Cu ₇ PS ₆) _{0.5} SUPERIONIC NANOPARTICLES	47
I.P. Studenyak, O.V. Kovalchuk, S.I. Poberezhets, M.M. Luchynets, A.I. Pogodin, M. Timko, P. Kopčanský	
INFLUENCE OF LIGHT ON THE DIELECTRIC PROPERTIES OF A MIXTURE OF NEMATIC LIQUID CRYSTAL WITH C60 FULLERENE IMPURITIES AND MOLECULAR COMPLEXES Ni-TMTAA-TCNQ	48
Vovk V.E., Kovalchuk O.V.	
SECTION 3. Thin film structures and their application	
LOCAL STRUCTURE OF Se ₉₅ As ₅ (EuF ₃) ₁ , Se ₉₅ Te ₅ (Sm) ₁ AND Ge ₂₀ Sb _{20.5} Te ₅₁ CHALCOGENIDE GLASSY SEMICONDUCTOR SYSTEMS	50
S. N. Garibova, A.I.Isayev, S.I. Mekhtiyeva, S.U. Atayeva	
STRUCTURAL AND SPECTROSCOPIC CHARACTERISATION OF As–Se–S:Cd FILMS	51
Y.M. Azhniuk, V.M. Dzhagan, D. Solonenko, V.V. Lopushansky, V.Y. Loya, V.M. Kryshenik, I.M. Voynarovych, A.V. Gomonnai, D.R.T. Zahn	
INFLUENCE OF ORGANIC AND INORGANIC ADDITIVES ON THE PROPERTIES OF NANOCELLULOSE MATERIALS	52
V. Barbash, O. Yashchenko, O. Alekseev, S. Kondratenko, M. Lazarenko, S.G. Nedilko, V. Scherbatskii, P. Teselko, M. Androulidaki, A. Manousaki, A. Papadopoulos	
ELLIPSOMETRY OF NANOSTRUCTURED LAYERS	53
E. Bortchagovsky	

ELECTROPHYSICAL PROPERTIES CARBON-DOPED THIN FILM IRON V.O. Burlakov, O. V. Filatov, O.E. Pogorelov	54
OPTICAL FUNCTIONS of HEAVY DOPED ZnO:Al THIN FILMS V. Dzikovskiy, O. Bovgyra, M. Kovalenko, A. Kashuba, H. Ilchuk, R. Petrus, I. Semkiv	55
ABSORPTION SPECTRA OF A LAYER OF METALLIC ELLIPSOIDAL NANOPARTICLES ON A SURFACE SUPPORTING SURFACE PLASMON E.G. Bortchagovsky, Yu.V. Demydenko	56
THE KEY ROLE OF THE NiS ELECTRODE/ELECTROLYTE INTERFACE IN LITHIUM ACCUMULATORS R. Apostolova, E. Shembel, B. Markovsky, D. Aurbach	57
ELECTRICAL PROPERTIES OF As ₂ S ₃ Ge ₈ - Te THIN FILMS GROWN FROM THE VAPOR PHASE Marina Ciobanu, Dumitru Tsiulyanu	58
GAS FILLED PHOTONIC CRYSTAL RESONATORS: PROPERTIES AND APPLICATION IN SENSING AND METROLOGY E.Ya Glushko	59
OPTICAL CHARACTERIZATION OF HYBRID PEDOT:PSS/SI HETEROSTRUCTURES BY SPECTROSCOPIC ELLIPSOMETRY O.S. Kondratenko, S.V. Mamykin, T.S. Lunko, I.B. Mamontova, V.R. Romanyuk	60
ELECTRICAL PROPERTIES OF THIN FILMS CdTe DOPED Ca AND Li Tetiana Mazur, Bogdan Dzundza, Volodymyr Prokopiv	61
INVESTIGATION OF NANOPARTICLES SOLUTIONS BY OPTICAL METHODS N.A.Davidenko, I.I.Davidenko, N.G.Chuprina, V.V.Kravchenko, E.V. Mokrinskaya, V.A.Pavlov, S.L.Studzinsky	62
CdTe FILMS AS A MATERIAL FOR SOLAR CELLS: STUDYING THE ELECTRICAL CHARACTERISTICS Semikina T.V., Mamykin S.V., Shmyryeva L.N.	63
ADVANCED SPIN-VALVE TYPE NANOSTRUCTURES WITH WEAKLY FERROMAGNETIC AND ANTIFERROMAGNETIC SPACERS A.I. Tovstolytkin, A.F. Kravets, D.M. Polishchuk, Ya.M. Lytvynenko, V.Yu. Borynskyi and V. Korenivski	64
EFFECT OF LOW MOLECULAR WEIGHT ARENES ADDITIVES ON THE INTERPHASE LAYER STRUCTURE OF SAN-PS SYSTEMS AND DIELECTRIC BEHAVIOR OF SUCH COMPOSITIONS Anoshenko M., Bazyluk T., Iukhymenko N., Budzinska V.	65
GROWTH, CRYSTAL STRUCTURE AND OPTICAL PROPERTIES OF Al-DOPED ZnO THIN FILMS A. Kashuba, H. Ilchuk, R. Petrus, B. Andriyevsky, O. Bovgyra, I. Semkiv, M. Kovalenko, V. Dzikovskiy	66
ELECTRICAL PROPERTIES OF ZnO THIN FILMS DEPOSITED BY RF-MAGNETRON SPUTTERING Semikina T.V., Vasin A.V., Rusavsky A.V., Mamykin S.V., Nazarov A.N.	67
THIN SOLID FILMS OF PHOSPHORYLATED CALIX[4]ARENES: STRUCTURE AND SENSORY PROPERTIES Z.I. Kazantseva, I.A.Koshets, V.I.Kalchenko ^b	68
NANOSTRUCTURED CuI THIN FILMS ON BIODEGRADABLE	69

NANOCELLULOSE FLEXIBLE SUBSTRATES FOR UV-SHIELDING APPLICATIONS	
N.P. Klochko, V.A. Barbash, K.S. Klepikova, V.R. Kopach, O.V. Yashchenko, D.O. Zhadan, S.I. Petrushenko, S.V. Dukarov, V.M. Sukhov, A.L. Khrypunova	
CARBON SCREEN PRINTED ELECTRODES MODIFIED WITH COMPOSITE FILMS BASED ON SILICA FOR H ₂ O ₂ DETERMINATION	70
Anastasiia Kornii, Anna Borets, Vladyslav V. Lisnyak, Oksana Tananaiko	
ULTRA-THIN SILICON TEXTURING FOR FLEXIBLE PHOTOVOLTAICS	71
Viktoriia Koval, Mykhailo Dusheyko, Valerii Barbash	
STRUCTURE OF DIAMONDOID THIOL MONOLAYERS ON GOLD: AN STM STUDY	72
Ya.Yu. Lopatina, T.S. Zhuk, A.A. Fokin, A.A. Marchenko	
SUPERHYDROPHOBIC TEXTILES WITH FIBERS COATED BY NANOSCTRUCTURED INDIUM-DOPED ZINC OXIDE LAYERS	73
N.P. Klochko, I.V. Khrypunova, K.S. Klepikova, V.R. Kopach, D.O. Zhadan, S.I. Petrushenko, S.V. Dukarov, V.M. Lyubov, M.V. Kirichenko	
DESIGN AND CHARACTERIZATION OF FUSED IMINOPYRIDINE POLYMER-BASED FLUORESCENT PROBES	74
Makeiev A.M., Milokhov D.S., Keda T.Ie., Khilya O.V., Volovenko Yu.M.	
DETERMINATION OF Pb(II) CONCENTRATION IN AQUEOUS MEDIUM ON NANOCRYSTALLINE TiO ₂ /Y THIN-FILM ELECTRODE	75
I. Medyk, V. Vorobets, G. Kolbasov, A. Garashchenko, S. Oblovatna, S. Karpenko, N. Antonyuk	
PECULIARITIES OF CuInSe ₂ LAYERS FABRICATION	76
V. Nicorici, P. Chetrus	
THE INFLUENCE OF THE LIGAND NATURE ON THE ELECTROCHEMICAL PARAMETERS OF THE TIN FILMS AS ANODE MATERIALS FOR LITHIUM ION BATTERIES	77
V.S. Kublanovsky, N.I. Globa, V.M. Nikitenko, E.A. Babenkov, Yu.V. Shmatok	
GROWTH, CRYSTAL STRUCTURE AND OPTICAL PROPERTIES OF CdTe _{1-x} Se _x THIN FILMS PREPARED BY QUASI CLOSE-SPACE SUBLIMATION METHOD	78
R. Petrus, H. Ilchuk, A. Kashuba, I. Semkiv, N. Ukrainets	
STUDY OF THE FORMATION OF GLASS ENAMEL COATINGS PART FOR STEEL PIPES	79
An. Salei, V. Goleus, T. Kozyreva	
USING Ti-CONTAINING STAINLESS STEEL AND ALUMINIUM FOIL COMPOSITES FOR BENZENE VAPOR PHOTODESTRUCTION	80
Sanzhak O.V., Brazhnyk D.V., Goncharov V.V., Zazhigalov V.A.	
THERMAL STABILITY AND VISCO-ELASTIC PROPERTIES OF THE FILMS ON THE BASIS OF EPOXY-OLIGOESTERIC MIXTURES	81
Olena Shyshchak, Olena Astakhova, Michael Bratychak	
ELECTRO- AND PHOTOELECTROPHYSICAL PROPERTIES OF NEW PHOTOSENSITIVE THIN FILM STRUCTURES BASED ON ANIONIC σ-COMPLEXES	82
Studzinsky S.L., Siniugina A.T.	
SYNTHESIS OF LANTHANUM COBALTITE FROM ACETYLACETONATE COMPLEXES LaCo(AA) ₅ ·nD	83

L.I. Sliusarchuk, L.I. Zheleznova, T.V. Pavlenko, O.O. Rogovtsov, O.K. Trunova PHOTOELECTROCHEMICAL PROPERTIES OF COPPER VANADATE	84
V.O. Smilyk, S.S. Fomanyuk, G.Ya. Kolbasov, I.A. Rusetskii PHOTOELECTRET PROPERTIES OF PHOTOSENSITIVE POLYMERIC COMPOSITES DOPED BY TRIARYLMETHANE DYES	85
Studzinsky S.L. EFFECT OF NANOSTRUCTURING TO RESPONSE KINETICS OF TELLURIUM THIN FILMS BY NITROGEN DIOXIDE SENSING	86
Dumitru Tsiulyanu, Marina Ciobanu, Olga Mocreac PHOTOTHERMOPLASTIC RECORDING MEDIA AND ITS APPLICATION IN THE HOLOGRAPHIC METHOD OF DETERMINATION OF REFRACTIVE INDEX OF LIQUID AND GASEOUS OBJECTS	87
Studzinsky S.L., Pavlov V.A., Chuprina N.G., Kuranda N.N., Mokrinskaya E.V., Kravchenko V.V., Davidenko N.A, Davidenko I.I. CRITICAL CURRENT IN HIGH-T _c SUPERCONDUCTOR BICRYSTALS WITH LOW-ANGLE [001]-TILT GRAIN BOUNDARIES	88
A.L. Kasatkin, V.P. Tsvitkovskiy CATALYTIC PROPERTIES OF CoRe AND CoWRe ALLOYS IN THE HYDROGEN ELECTROREDUCTION REACTION	89
T. Maltseva, Yu. Yapontseva, V. Kublanovsky THIN-FILM STRUCTURES BASED ON Ge - GeO ₂ - B ₂ O ₃ AND Ge - ZnS (ZnO) - B ₂ O ₃ SYSTEMS FOR INTERFERENCE OPTICS OF IR SPECTRUM RANGE	90
V. Zinchenko, I. Magunov, O. Mozkova, G. Volchak THE PRECONCENTRATION OF AROMATIC ALDEHYDES ON POLYDIMETHYLSILOXANE-DIVINYLBENZENE FIBER	91
A.O. Mosendz, V.M. Levchyk, M.F. Zui SECTION 4. Electronic processes in nanostructures and polymer composites	
FEATURES OF RAMAN SCATTERING AND X- RAY DIFFRACTION IN As-Se- Te(S) CHALCOGENIDE GLASSES DOPED BY SAMARIUM	93
R.I. Alekberov, A.I. Isayev, S.I. Mekhtiyeva INFLUENCE OF GAMMA RADIATION ON THE ELECTRICAL PROPERTIES OF EXTRUDED SAMPLES OF SOLID SOLUTION Bi ₈₅ Sb ₁₅ <Te>	94
Abdullayeva I.A., Abdinova G.D., Tagiyev M.M. EXCITONIC EFFECTS IN AGGREGATES OF ORGANIC DYES AND CARBONIC NANOSTRUCTURES	95
Alexander P. Demchenko THE NATURE OF OVERTONES AND COMBINATIONS OF FUNDAMENTAL VIBRATIONAL MODES IN RAMAN SCATTERING SPECTRA OF LEAD PHTHALOCYANINE FILMS	96
M.P.Gorishnyi, O.M.Fesenko PECULIARITY OF INELASTIC CHARACTERISTICS OF NANOCOMPOSITES MULTIWALLED CARBON NANOTUBES AND POLYETHYLENE, POLYVINYL CHLORIDE, POROUS POLYSTYRENE, RADIATION CROSS-LINKED HYDROGELS	97
A.P. Onanko, M.P. Kulish, Y.A. Onanko, N.V. Kutsevol, O.N. Nadtoka, D.V. Charnyi, O.P. Dmytrenko, T.M. Pinchuk-Rugal, M.A. Aleksandrov, O.L. Pavlenko, T.O. Busko, P.P. Ilyin, O.M. Rozhkovskiy	

MANIFESTATION OF THE SPECIAL NANO-STRUCTURAL PROPERTIES OF LAYERED TRANSITION METAL DIHALCOGENIDES AND GRAPHENE WITH CHANGE IN THE NUMBER OF MONO-LAYERS	98
Kornienko N.E., Naumenko A.P., Gubanov V.O.	
SPECTROSCOPIC STUDY OF ELECTRONIC INTERACTIONS IN "NANOCRYSTAL-MOLECULE" SYSTEMS	99
V. Dzhagan, O. Selyshchev, O. Isaeva, N. Mazur, O. Raievska, O. Stroyuk, D.R.T. Zahn	
PECULIARITY OF IONEXCHANGE, ABSORBING PROPERTIES OF NANOCOMPOSITES MULTIWALLED CARBON NANOTUBES AND POLYETHYLENE, POLYVINYL CHLORIDE, POROUS POLYSTYRENE, SiO ₂	100
A.P. Onanko, M.P. Kulish, Y.A. Onanko, D.V. Charnyi, O.P. Dmytrenko, T.M. Pinchuk-Rugal, M.A. Aleksandrov, O.L. Pavlenko, T.O. Busko, P.P. Ilyin, L.I. Kurochka	
RESONANCE LASER INDUCTION OF THE ELECTRON DENSITY WAVES AND OBSERVATION OF ACOUSTIC MODES IN THE RAMAN SPECTRA OF NANO AND MICROCRYSTALLITES OF MoS ₂	101
Kornienko N.E., Naumenko A.P.	
METABOLIC ELECTRON TRANSFER BY FRAGMENTS OF DNA MOLECULE TAKING INTO ACCOUNT THE REAL STRUCTURE OF NUCLEOTIDES	102
A. D. Suprun, L. V. Shmeleva	
SYNTHESIS, MORPHOLOGY AND INTRAMOLECULAR STRUCTURE OF POLYETHYLENE GLYCOL WITH METHYLENE BLUE DYE FILMS	103
M.A. Alieksandrov, T.M. Pinchuk-Rugal, A.M. Gaponov, O.P. Dmytrenko, A.P. Onanko, M.P. Kulish	
SYNTHESIS AND PROPERTIES OF NANOSTRUCTURED COMPOSITE Ce:GdAG/Cr:Al ₂ O ₃	104
I.V. Berezovskaya, O.V. Khomenko, N.I. Poletaev, M.E. Khlebnikova, V.P. Dotsenko	
SOLVENT EFFECTS ON PHOTOPHYSICAL PROPERTIES OF ORGANIC DYES IN THE POLYMER MATRIX	105
T.V. Bezrodna, O.I. Antonenko, L.F. Kosyanchuk, O.O. Brovko, V.I. Bezrodnyi, A.M. Negriyko	
ABSORPTION OF LASER RADIATION BY METALLIC NANOPARTICLES EMBEDDED IN A DIELECTRIC MATRIX IN THE CONDITIONS OF SURFACE PLASMON RESONANCE	106
A.A. Biliuk, O.Yu. Semchuk, O.O. Havryliuk	
pH-SENSITIVE PHOTOLUMINESCENCE OF AgInS ₂ /ZnS QUANTUM DOTS IN BUFFER SOLUTIONS	107
L. Borkovska, A. Rachkov, J.-L. Doualan	
MICROELLIPSOMETRIC INVESTIGATIONS OF MIM STRUCTURES WITH ORDERED LATTICES OF PLASMONIC NANOPARTICLES	108
E. Bortchagovsky, F. Dai, J. Tang, M. Fleischer, I. Milekhin, D. Zahn, R. Kenaz, R. Rapaport	
EXCITONS SPECTRUM IN MULTILAYER AlN/GaN NANOSTRUCTURES	109
Igor Boyko, Halyna Tsupryk, Yuriy Stoianov	
Pb _{1-x} Cd _x I ₂ LAYERED SEMICONDUCTOR NANOSCINTILLATOR FILMS:	110

OPTICAL AND STRUCTURAL PROPERTIES

- A.P. Bukivskii, Yu.P. Gnatenko, P.M. Bukivskii, I.V. Fesyeh
EFFECT OF NITROGEN DOPING ON THE REDOX PROCESSES ON THE
SURFACE OF GRAPHEN-CLUSTERS 111
- Demianenko E.M., Grebenyuk A.G., Lobanov V.V., Karpenko O.S., Kartel N.T
SURFACE CENTERS OF Cr³⁺ IONS IN NANOSIZED Al₂O₃
V.P. Dotsenko, I.V. Berezovskaya, N.I. Poletaev, M.E. Khlebnikova, 112
O.V. Khomenko, N.P. Efruyshina
- POSITRON SPECTROSCOPY STUDY OF DEFECTS STRUCTURE AND
ELECTRONIC PROPERTIES OF POLYMER-CARBON NANOTUBE 113
COMPOSITES
- E. Tsapko, E. Len, I. Galstian, M. Rud
PHOTOELECTROPHYSICAL PROPERTIES OF PHOTOSENSITIVE THIN FILM
STRUCTURES BASED ON HETEROLIGAND TETRAAMINE CHROMIUM(III) 114
COMPLEXES
- Gerda V.I., Studzinsky S.L.
DONOR-ACCEPTOR INTERMOLECULAR ELECTRON BONDING AND
STRUCTURAL TRANSFORMATIONS OF CHAIN-LIKE BISMUTH 115
PENTAFLUORIDE CLUSTERS
- Grebenyuk A.G.
DISPERSION OF VIBRATIONAL AND ELECTRONIC STATES AND FINE SPIN-
DEPENDENT STRUCTURE OF THEIR ENERGY LEVELS IN HEXAGONAL BN 116
CRYSTALS
- V. Gubanov, A. Naumenko, I. Dotsenko
SPECTRAL PROPERTIES OF NILE RED DYE AT THE SILICA NANOSURFACE
AND LIQUID MEDIA 117
- Khristenko I. V., Vasilieva A. V., Ivanov V. V.
ELECTRONIC AND MAGNETIC PROPERTIES OF NITROGEN/IRON-DOPED
GRAPHENE-LIKE HEXAGONAL NANOCLUSTERS 118
- Karpenko O.S., Demianenko E.M., Lobanov V.V., Kartel M.T.
OPTICAL ABSORPTION OF POLYAMINOARENES DOPED WITH ELECTRON
ACCEPTOR NANOCLUSTERS 119
- Konopelnyk O.I., Rabi V.I., Aksimentyeva O.I.
DYNAMICS OF ELECTRON TRANSFER IN MELANIN-
TRINITROFLUORENONE SYSTEM 120
- A.O. Kostetskiy, Yu.P. Piryatinski, A.B. Verbitskiy¹, P.M. Lutsyk², A. Rozhin
- POLYMER-POLYMER COMPOSITES BASED ON WATER-SOLUBLE
POLYMERS AND POLYANILYLINE 121
- V. Dutka, Ya. Kovalskiy, O. Aksimentyeva, T. Virsta, H. Halechko
IONIC CONDUCTIVITY OF GLYCPOLYMER NETWORKS BASED ON
XANTHAN AND BLOCKED POLYISOCYANATE IN THE PRESENCE OF 122
GLICEROL
- Nataly Kozak, Katerina Didenko, Zoja Gagolkina, Stanislav Nesin
SPECTROSCOPIC INVESTIGATION OF CHLORINE-BASED
PHOTOSENSITIZERS IN POLYMER MATRIX 123
- A. Naumenko, N. Kutsevol, V. Zorin

CORRELATION BETWEEN STRUCTURAL AND SPECTROSCOPIC PROPERTIES OF Sm ³⁺ -DOPED MgAl ₂ O ₄ NANOCRYSTALLINE SPINEL	124
K. Lamonova, I. Danilenko, O. Gorban, G. Volkova, S. Orel, Yu. Pashkevich, O. Viagin, P. Maksimchuk, V. Seminko, Yu. Malyukin, V. Kurnosov	
INFLUENCE OF POLYMER MORPHOLOGY AND METHOD OF COMPOSITE SYNTHESIS ON THE DIELECTRIC PROPERTIES OF NANOCARBON COMPOSITES	125
Lazarenko O., Syvolozhskiy O., Zhuravkov O., Matzui L.	
PHOTOLUMINESCENCE IN GAS ENVIRONMENTS ZnO NANOPOWDERS DOPED BY In AND Ga	126
I.V. Lazoryk, Yu.I. Venhryn, A.S. Serednytski, D.I. Popovych	
EFFECT OF ELECTRON SCATTERING BY IMPURITY ON THE ELECTRONIC STRUCTURE, TYPE AND SPATIAL CHARACTERISTICS OF NANOSCALE REGIONS OF MAGNETIC ORDERING IN ALLOYS	127
E. G. Len, V. V. Lizunov, T. D. Shatnii, M. V. Ushakov, T. S. Len	
THE INFLUENCE OF GATE POTENTIAL ON THE FORMATION OF ELECTROLUMINESCENCE IN A MOLECULAR PHOTODIODE	128
V.O. Leonov, Ye.V. Shevchenko, E.G. Petrov	
STRUCTURAL AND OPTICAL STUDY OF GLUTATHIONE-CAPPED Ag–In–S NANOCRYSTALS	129
B.V. Lopushanska, Y.M. Azhniuk, D. Solonenko, V.V. Lopushansky, I.P. Studenyak, D.R.T. Zahn	
COMPLEX PERMITTIVITY OF EPOXY COMPOSITES WITH CARBON NANOTUBES AND TiO ₂ IN MICROWAVE RANGE	130
O.V. Lozitsky, L.L. Vovchenko, L.Y. Matzui, V.V. Zagorodnii, V.V. Oliynyk	
STUDY OF EXCITED STATE RELAXATION IN SUBSTITUTED POLYENES BY TIME-RESOLVED ELECTRON SPECTROSCOPY (TRES)	131
K. O. Maiko, D. O. Merzhyievskiy, O. V. Shablykin, Yu. P. Piryatinski, I. M. Dmytruk, Ya. O. Prostota, N. V. Obermikhina, O. D. Kachkovsky, V. S. Brovarets	
ELECTRICAL AND THERMAL PROPERTIES OF EPOXY COMPOSITES FILLED WITH CARBON NANOTUBES AND INORGANIC PARTICLES	132
Len T.A., Vovchenko L.L., Turkov O.V., Lozitsky O.V., Matzui L.Yu.	
LOW ENERGY ELECTRON INDUCED PLASMON EXCITATIONS IN THE W (100)	133
M. O. Vasylyev, I. M. Makeeva, V. M. Kolesnik, V. I. Patoka	
SURFACE PROPERTIES OF METAL FILLED COMPOSITE BASED ON POLYMER BLEND	134
Misiura A., Mamunya Ye., Prochazka M., Omastova M., Kulish M., Pylypenko A.	
CARBON NANOTUBES AS MODIFIERS OF PROPERTIES OF MATERIALS	135
H.Yu. Mykhailova	
FORMATION OF DONOR-ACCEPTOR COMPLEXES IN FULLERENE SOLUTIONS	136
Nagorna T.V., Bulavin L.A., Chudoba D.	
PECULIARITIES OF THE SPECTRAL PROPERTIES OF BORON-CONTAINING DYES IN THE AQ3 MATRIX	137
O.M. Navozenko, V.M. Yashchuk, M.Yu. Losytskyy, A.P. Naumenko, I.Yu. Doroshenko, Yu.L. Slominskii, D. Gudeika	

FIELD-CONTROLLED ELECTRON TRANSPORT IN CHOLESTERIC LIQUID CRYSTAL – CARBON NANOTUBES COMPOSITE	138
Yu.I. Olenych, Yu.Yu. Horbenko, O.I. Aksimentyeva, I.B. Olenych, I.D. Karbovnyk	
THE INFLUENCE OF PHOSPHORUS AND CHLORINE AS ACTIVE LAYERS FOR ELECTRONIC GAS SENSORS	139
A. Pud, N. Ogurtsov, O. Kukla, Yu. Noskov, J.-L. Wojkiewicz, V. Bliznyuk, A. Mamykin, I. Myronyuk	
FEATURES OF CYANINE AGGREGATES FORMATION IN NANOPOROUS MATRICES	140
I. Ropakova, A. Sorokin, I. Bepalova, S. Yefimova, Yu. Malyukin	
ESTIMATION OF DIPOLE MOMENTS FOR THE PHENALENONE DYES IN LIQUID AND POLYMER POLAR MEDIA	141
T.V. Bezrodna, L.F. Kosyanchuk, O.M. Roshchin, V.I. Bezrodnyi, G.V. Klishevich, V.I. Melnyk	
THE STUDY OF TiO ₂ /SnO ₂ COMPOSITION AFTER IT SONOCHEMICAL AND MECHANOCHEMICAL TREATMENT	142
Sachuk O.V., Zazhigalov V.A., Diyuk O.A., Tsyba M.M.	
SILVER NANOPARTICLES EFFECT ON THE SENSITIZATION OF DYE-SENSITIZED SOLAR CELLS	143
Temirbayeva D.A., Seliverstova E.V., Ibrayev N.Kh., Ishchenko A.A.	
ANALYSIS OF THE PROPERTIES OF METALLOORGANIC COMPOUNDS WITH THE Fe ³⁺ NANOPROBES BY EPR METHOD	144
Shapovalov V.A., Aksimentyeva E.I., Shavrov V.G., Koledov V.V., Shapovalov V. V., Tkach V.I.	
EFFECT OF NON-METAL ADMIXTURES ON THE ELECTRONIC STRUCTURE AND XPS CHARACTERISTICS OF TITANIA NANOPARTICLES	145
O.V. Smirnova, A.G. Grebenyuk, V.V. Lobanov	
CONTROL OF THE EXCITON SELF-TRAPPING IN LUMINESCENT MOLECULAR AGGREGATES	146
A. Sorokin, I. Grankina, S. Yefimova, Yu. Malyukin	
TWO STAGE INTERCALATION OF MULTYWALL CARBON NANOTUBES WITH COBALT	147
D. O. Splyka, I. V. Ovsiienko, T. A. Len, L. Yu. Matzui, F. Le Normand, T. L. Tsaregradskaya, G. V. Saenko ^a	
ELECTRIC PROPERTIES OF NI-C AND CO-C CORE-SHELL NANOPARTICLES IN POLYMER MATRIX	148
O. A. Syvolozhskiy, O. S. Yakovenko, L. Yu. Matzui, L. L. Vovchenko, V.V. Vilchinskyi, V.M. Bogatyrov	
MAGNETOTHERMOELECTRIC PROPERTIES OF BULK NANOSTRUCTURED SAMPLES OF Bi ₈₅ Sb ₁₅ SOLID SOLUTION	149
Tagiyev M.M.	
ELECTRON TRANSPORT IN GRAPHENE: COMBINED EFFECTS OF STRAINS AND DEFECTS	150
Valentyn A. Tatarenko, Taras M. Radchenko	
THE TUNING OF ACID-BASE AND PROTON CONDUCTIVITY PROPERTIES OF THE TITANIA NANOSTRUCTURES BY CAREFULLY DOPING	151
G. Telbiz, N. Vlasenko, E. Leonenko, P. Smertenko, T. Kavetsky, P. Strizhak,	

IMPACT OF FILM MORPHOLOGY ON ELECTRONIC STRUCTURE IN THE PROTOTYPICAL SEMICONDUCTING POLYMER POLY-3-HEXYLTHIOPHENE	152
A. Vakhnin, A. Kadashchuk, A. Zhugayevych, A. Kohler	
SORPTION-LUMINESCENCE METHOD FOR DETERMINATION OF YTTERBIUM AND MORIN USING TRANSCARPATHIAN CLINOPTILOLITE	153
O. Stashkiv, V. Vasylechko, R. Gamernyk, G. Gryshchouk, A. Zelinskiy	
ENHANCEMENT OF RADIOLUMINESCENCE IN CERIAM DOPED MIXED OXYORTHOSILICATE NANOCRYSTALS $\text{Lu}_{2-x}\text{Y}_x\text{SiO}_5:\text{Ce}^{3+}$	154
V. Seminko, P. Maksimchuk, I. Bespalova, O. Viagin, A. Aslanov, Yu. Malyukin	
INFLUENCE OF SILVER NANOPARTICLES ON PHOTOELECTROCHEMICAL CHARACTERISTICS OF TiO_2 -GO NANOCOMPOSITE	155
Sadykova A.E., Zhumabekov A.Zh., Ibrayev N.Kh.	
ELECTRIC PROPERTIES OF $\text{GaSe} <\text{NaNO}_2 + \text{PROPOLIS}>$ NANOHYBRID ENCAPSULATE	156
Maksymych V., Ivashchyshyn F., Chabecki P.	
PLASMONIC NANOCAVITY METASURFACE BASED ON LASER-STRUCTURED SILVER SURFACE AND SILVER NANOPRISMS FOR THE ENHANCEMENT OF ADENOSINE NUCLEOTIDE PHOTOLUMINESCENCE	157
A. V. Tomchuk, O. A. Yeshchenko, V. Yu. Kudrya, I. M. Dmitruk, N. I. Berezovska, P. O. Teselko, S. Golovynskyi, B. Xue, J. Qu	
SECTION 5. Nonlinear properties of polymer composites, nanostructures, NLO information recording	
INFLUENCE OF ELECTROTHERMOPOLARIZATION ON $\text{PE} + \text{PbCrO}_4$ -BASED NANOCOMPOSITION STRUCTURES	159
M.A. Ramazanov, A.S. Huseynova, F.V. Hajiyeva, S.U. Atayeva	
HIGH QUALITY PATTERNS PRODUCED BY NONLINEAR LASER LITHOGRAPHY FOR LIQUID CRYSTAL ALIGNMENT	160
I. Pavlov, A. Rybak, A. Dobrovolskiy, Z. Kazantseva, A. Bek, O. Candemir, R. Kravchuk, I. Gvozдовskyy	
SYNTHESIS OF NOVEL POLYAZOMETHINE WITH ANTIPYRINE MOIETY: EFFECT OF COPOLYMER COMPOSITION VARIATION ON NONLINEAR OPTICAL RESPONSE	161
V. Ovdenko, V. Multian, D. Komarenko, O. Kolendo, V. Gayvoronsky	
A DUAL-WAVELENGTH PULSED LASER PROCESSING PLATFORM FOR A-SI THIN FILM CRYSTALLIZATION	162
V. Türker, M. E. Yağcı, S. H. Salman, K. Çınar, S. K. Eken, A. Bek	
INFLUENCE OF SUBSTITUENTS ON PHOTORESPONSIVE BEHAVIOR OF METHACRYLIC POLYMERS CONTAINING 8-HYDROXY-QUINOLINE AZO-DYES IN SIDE-CHAIN	164
D. Chomiccki, O. Kharchenko, A. Kozanecka-Szmigiel, D. Szmigiel, Ł. Skowroński, J. Kowalunek, V. Smokal, O. Krupka, B. Derkowska-Zielinska	
SURFACE-INDUCED PHOTOREFRACTIVE EFFECT IN LIQUID CRYSTAL CELLS CONTAINING GOLD NANOPARTICLES	165
A. Gridyakina, H. Bordyuh, S. Bugaychuk, L. Viduta, V. Styopkin	
NONLINEAR PROPERTIES OF MAGNETO-OPTIC DYNAMICS OF FERRONEMATIC LIQUID CRYSTALS	166
Korostil A.M., Krupa M.M.	

PLASMON SPECTRA AND OPTICAL CUBIC NONLINEARITY OF THREE-LAYER STRUCTURES: Au NANOPARTICLES - Al ₂ O ₃ - PdO (Pd)	167
Brodin O.M., Brodyn M.S., Liakvovetskyi V.R., Rudenko V.I., Stypokin V.I	
SYNTHESIS AND NONLINEAR OPTICAL CHARACTERIZATION OF NOVEL AZO- AND AZOMETHINE CONTAINING POLYMERS WITH HETEROCYCLIC MOIETY	168
V.M. Ovdenko, V. V. Multian, A. V. Uklein, I. V. Kulai, O.Yu. Kolendo, V. Ya. Gayvoronsky	
NONLINEAR LASER PROCESSING IN OPTICAL MATERIALS	169
S. Pavlova, V. Kadan, E. Yagci, K. Eken, I. Pavlov	
DIBENZOFUORENE DERIVATIVE FOR NONLINEAR OPTICS AND SOLAR CELLS APPLICATIONS	170
A. El Haimour, I. V. Levkov, T. V. Yegorova, A. I. Kysil, H. Bakkali, E. Blanco, Z. V. Voitenko	
ANALYSIS OF THE FORMATION OF RELAXATION ZONES ON A SOLID SURFACE BY LASER NANOSTRUCTURING OF A MATERIAL	171
O.V. Yushchenko ^a , O.S. Krivets	
SECTION 6. Novel materials, structures, and technologies	
POLYDOPAMINE AS AN EFFICIENT SORBENT FOR URANIUM EXTRACTION FROM NATURAL ENVIRONMENTS	173
V.N. Bliznyuk, K. Kołacińska, A.A. Pud, N.A. Ogurtsov, Y.V. Noskov, B.A. Powell, T.A.DeVol	
NON-DESTRUCTIVE DEPTH PROFILE RECONSTRUCTION OF INTERFACE BETWEEN BIOMOLECULES AND CARBON-BASED SURFACE USING ANGLE-RESOLVED XPS	174
A. Artemenko, O. Babčenko, E. Ukrainsev, M. Marton, M. Vojs, T. Wårgberg, A. Kromka	
2,7-DIMETHOXYCARBAZOLE AND TRIAZINE BASED BIPOLAR MATERIALS FOR OLEDs: SYNTHESIS AND INVESTIGATION	175
A. Bucinskas, A. Gruodyte, O. Bezvikonnyi, D. Volyniuk, J. V. Grazulevicius	
STIMULATED EMISSION OF MEROCYANINE DYE IN POROUS ALUMINIUM OXIDE MATRIX	176
D.A. Afanasyev, N.Kh. Ibrayev, A.A. Ishchenko	
IR-FOURIER TRANSFORM SPECTROSCOPIC STUDY OF SYSTEMS NaNO-Al ₂ O ₃ + NaNO-SiO ₂ + H ₂ O	177
Agayev T.N., Melikova S.Z., Tagiyev M.M., Dzhafarova S.Z., Akhmedova A.M.	
NOVEL HYBRID TITANIUM-CONTAINING INTERPENETRATING POLYMER NETWORKS WITH EFFICIENT UV-INDUCED CHARGES SEPARATION	178
Tetiana T. Alekseeva, Nataly V. Kozak, Nataly V. Iarova	
ELECTRON AND HEAT TRANSPORT IN SnTe CRYSTALS WITH VARIOUS VACANCY CONCENTRATIONS IN TIN LATTICE	179
T.D. Aliyeva, G.Z. Bagiyeva, N.M. Akhundova*, G.D. Abdinova, B.Sh. Barkhalov	
THE MECHANISM OF EPOXY COMPOUND AND ADIPIIC ACID REACTION	180
Olena Astakhova, Olena Shyshchak, Michael Bratychak	
THERMODYNAMIC FUNCTIONS OF PHASE TRANSITIONS OF COMPOUNDS A ₈ GeX ₆ (A=Ag, Cu; X=S, Se)	181
Bayramova U.R., Mashadiyeva L.F., Shukurova G.M., Babanly M.B.	

ACRYLIC ACID MODIFIED LDH FOR NANOSTRUCTURED POLYMER MATERIALS	182
I. Bei, V. Budzinska, O. Slisenko, O. Tolstov, N. Iukhymenko	
PULSED IR LASER CRYSTALLIZATION OF AMORPHOUS SILICON FILMS	183
Kamil Çınar, Alpan Bek	
SYNERGISTIC EFFECTS DURING THE OBTAINING OF POLYVINYLPYRROLIDONE NICKEL-FILLED COPOLYMERS	184
B. Berezhnyy, O. Grytsenko, O. Suberlyak, N. Baran, A. Fechan	
PROPERTIES OF MICROWAVE CURED EPOXY-ANHYDRIDE COMPOUNDS	185
O. Bilogubka	
NEW STRUCTURE HOST MATERIALS FOR PHOSPHORESCENT OLED DEVICES	186
Do. Blazelevicius, D. Tavgeniene, M. Eidimtas, G. Krucaite, B. Zhang, S. Sutkuviene and S. Grigalevicius	
DESIGN OF PLASTIC SCINTILLATORS FOR DETECTION OF VARIOUS TYPES OF RADIATION	187
V.N. Bliznyuk, A.F.Seliman, N.A.Derevyanko, A.A.Ishchenko, S.M.Husson, T.A.DeVol	
LUMINESCENT INVESTIGATIONS OF CADMIUM SULFIDE NANOWHISKERS	188
A. Bogoslovska, D. Grynko, E. Bortchagovsky	
CRYSTALLINE SILICON WAFER SLICING BY DEEP SUBSURFACE LASER INDUCED MODIFICATION FOLLOWED BY SELECTIVE CHEMICAL ETCHING	189
M. Zolfaghari Borra, H. Nasser, B. Radfar, I. Pavlov, R. Turan, A. Bek	
PHENOL-BASED OLIGOMERS WITH REACTIVE FUNCTIONAL GROUPS	191
Michael Bratychak	
DEFINING THE CONDITIONS FOR THE FORMATION OF OXIDE FILMS DURING THE ELECTROCHEMICAL OXYDATION OF THE Ti ₆ Al ₄ V ALLOY IN ETHYLENEGLYCOL SOLUTIONS	192
O. Bukhinik, S. Gura, A. Pilipenko	
SYNTHESIS AND PROPERTYS OF ARYLFLUORENYL SUBSTITUTED DERIVATIVES OF BRIDGED-TRIPHENYLAMINE AND TRIPHENYLAMINE FOR OPTOELECTRONIC APPLICATIONS	193
M. Cekaviciute, J. Simokaitiene, J.V. Grazulevicius, D. Volyniuk, G. Sini	
THERMODYNAMIC OF METHYLENE BLUE ADSORPTION ON THE HYBRID TiO ₂ / DIATOMITE NANOCOMPOSITE	194
Datsko T., Zelentsov V.	
BURST MODE ULTRAFASST LASER WITH NOVEL PULSE STRECHING FOR MICROMACHINING	195
M. E.Yağcı, V. Türker, S. Pavlova, E. Tunçkol, S. K. Eken, I. Pavlov	
DEVELOPMENT OF ANTIMICROBIAL MATERIALS BASED ON PLA/MEDITERRANEAN PROPOLIS AND THYMUS VULGARIS ESSENTIAL OIL	196
Hocine Djidjelli, Nacera Chibani, Nadjet Ardjoum	
OPTIMISATION OF LASER-INDUCED SURFACE STRUCTURES FOR SENSITIVITY OF THEIR SPECTRAL CHARACTERISTICS TO CHANGES IN THE ENVIRONMENT	197

I. Dmitruk, N. Berezovska, O. Yeshchenko, O. Stanovyi, E. Hrabovsky, P. Teselko, A. Dmytruk, I. Blonskyi	
SOME PHYSICO-CHEMICAL ASPECTS OF THE PREPARATORY STAGES OF THE FORMATION OF SELF-CLEANING PHOTOCATALYTICALLY ACTIVE COATINGS	198
O. Dryuchko, D. Storozhenko, N. Bunyakina, I. Ivanytska, I. Gornitsky, K. Kytaihora, V. Khaniukov	
PICOSECOND LASER PROCESSING OF STAINLESS STEEL FOR SUPERHYDROPHOBIC SURFACE FABRICATING.	199
Dupliak Ivan, Yuchen Liang, Guozhu Yan, Fenping Li, Ivaniuk Khystyna	
Ni-Co/SiO ₂ COMPOSITES: SURFACE STRUCTURE AND MORPHOLOGY	200
Dyachenko A., Ischenko O., Goncharuk O., Borysenko M.	
PbI ₂ :Cd ²⁺ NANOCCLUSERS SYNTHESIZED BY ONE-STEP DEPOSITION METHOD	201
O.G. Dziazko, I.V. Fesych, O.O. Bondar, S.A. Nedilko, T.A. Voitenko, M.A. Zelenko, V.V. Lendel, A.P. Bukivskii, P.M. Bukivskii, O.V. Ivanov	
RED MUD AS A CATALYST FOR THE DECOMPOSITION OF SODIUM BOROHYDRIDE	202
Fedchenko Anastasiia, Brychenko Iryna, Ivanenko Iryna, Kosogina Iryna	
THE PROCESS OF NICKEL NANOPARTICLE FORMATION IN HYDROPHILIC POLYMER / INORGANIC MATRICES	203
T.B. Zheltonozhskaya, N.M. Permyakova, A.S. Fomenko, D.O. Klymchuk, V.V. Klepko, L.N. Grishchenko, L.O. Vretik	
COMPOSITIONAL EFFECT ON THERMOTROPIC PHASE TRANSITIONS IN LONG-CHAIN <i>n</i> -ALKANOIC ACIDS BINARY MIXTURES	204
T.A. Gavrilko, I.I. Gnatyuk, V.I. Styopkin, N.D. Shcherban, J. Baran, M. Drozd	
DISTRIBUTION INHOMOGENEITY OF NEMATIC 5CB CONFINED TO MOLECULAR SIEVES BY FTIR SPECTROSCOPY AND CARS IMAGING	205
I. Gnatyuk, A. Dementjev, T. Gavrilko, R. Karpicz, J. Baran, N. Shcherban	
ORGANIC BIPOLAR EMITTERS FOR OLEDs AND OXYGEN SENSORS	
J. V. Grazulevicius, N. Kukhta, R. Pashazadeh, E. Skuodis, A. Tomkeviciene, R. Keruckiene, J. Simokaitiene, M. Cekaviciute, X. Tan, D. Volyniuk, K. Ivaniuk, P. Stakhira	206
SYNTHESIS AND PROPERTIES OF D-A-D-TYPE ORGANIC SEMICONDUCTING MATERIALS BASED ON A FLUORENONE MOIETY	207
D. Gudeika, O. Bezvikonnyi, D. Volyniuk, J. V. Grazulevicius	
THERMAL HYSTERESIS IN SPIN-CROSSOVER NANOCRYSTALS WITH (ANTI)FERROMAGNETIC SURFACE	208
Iu. Gudyma, A. Maksymov	
REFINEMENT OF THE PHASE DIAGRAM OF THE Bi-Se SYSTEM AND THERMODYNAMIC PROPERTIES OF THE BISMUTH SELENIDES	209
Zeynalova G.S., Mammadova A.T., Aghazade A.I., Imamaliyeva S.Z., Babanly M.B.	
CALCIUM CARBONATE IN THE FORM OF SPHERICAL PARTICLES: SYNTHESIS AND PROPERTIES	210
N.V. Guzenko, O.L. Gabchak, O.I. Oranska	
SYNTHESIS AND CHARACTERIZATION OF PHOTOSENSITIVE CHIRAL DOPANT FOR APPLICATIONS IN LIQUID CRYSTALS	211

- V. O. Chornous, M. V. Vovk, Yu. V. Dmytriv, A. V. Rudnichenko, M. V. Skorobahatko, L. N. Lisetski, I. A. Gvozдовskyy
 UTILIZATION OF A NEW DESIGNED ELECTROMECHANICAL REACTOR FOR HEAVY METALS REMOVAL IN AN INDUSTRIAL WASTEWATER TREATMENT PROCESS USING ORGANIC AND INORGANIC MATERIALS 212
 Amir Hajjali
 UNDERSTANDING THE ORIGIN OF THE CHANGE OF THE ENANTIOSELECTIVITY IN THE CYCLOADDITION STEP IN THE THE REACTION MECHANISM OF ENANTIOSELECTIVE REDUCTION OF KETONES WITH BORANE CATALYZED BY A *B*-METHOXY OXAZABOROLIDINE CATALYST DERIVED FROM (-)-*B*-PINENE: A DFT STUDY 213
 Hichem Sadrik Kettouche
 SURFACE MORPHOLOGY OF NANOSTRUCTURED GAS SENSORS BASED ON METAL-POLYMER COMPOUNDS 215
 D.O. Harbuz, A.P. Pospelov, M.D. Romanov, P.V. Mateychenko, A.P. Konotop, V.A. Gudimenko, G.V. Kamarchuk
 COBALT-IRON SPINEL / REDUCED GRAPHENE OXIDE COMPOSITE MATERIAL FOR SUPERCAPACITOR APPLICATIONS 216
 M. Hodlevska, R. Zapukhlyak, V. Boychuk, V. Kotsyubynsky, K. Bandura, A. Kachmar, M. Hodlevskyi
 DIELECTRIC AND MAGNETIC PROPERTIES OF $\text{KTaO}_3:\text{Li}, \text{Co}$ CERAMICS 217
 S. V. Lemishko, O. O. Andriiko, M. M. Prokopiv, M. Trepachko, I. S. Golovina
 NEW RECORDING MEDIA FOR HOLOGRAPHY BASED ON AZO-DYES OF SUDAN SERIES 218
 Valeriia Ovdenko, Dmitry Vyshnevsky, Nikolay Davidenko, Valeriy Pavlov
 NEW PHASES OF VARIABLE COMPOSITION BASED ON FAMATINITE MINERAL - POTENTIAL ENVIRONMENTAL FRIENDLY THERMOELECTRIC MATERIALS 219
 Ismailova E.N., Mashadiyeva L.F., Shevelkov A.V, Bakhtiyarly I.B., Babanly M.B.
 HIGH- ϵ CERAMICS FOR EPR RESONATOR INSERT 220
 S. V. Lemishko, V. O. Yukhymchuk, I. P. Vorona, I. S. Golovina, S. O. Solopan, A. G. Belous
 EFFECT OF ORTHO- AND PARA-SUBSTITUTIONS IN AZO-NAPHTHOL DYES ON THE DIFFRACTION EFFICIENCY OF HOLOGRAPHIC MEDIA 221
 D. Vyshnevsky, V. Ovdenko, A. Ishchenko, I. Kurdyukova, N. Davidenko, E. Mokrynska, V. Pavlov
 INNOVATIVE SENSOR SOLUTIONS BASED ON YANSON POINT CONTACTS G.V. Kamarchuk, A.P. Pospelov, A.V. Yeremenko, L.V. Kamarchuk, A.V. Kravchenko 222
 CHEMICAL TREATMENT OF Cd (Mn)Te SURFACE 223
 L.M. Kanak, V.G. Ivanitska, P.M. Fochuk
 OPTICAL PROPERTIES OF THE NEW 10-((1,3,4-OXADIAZOLES-2-YL)METHYL)ACRIDINE-9(10H)-ONES 224
 Yu. V. Karpenko, A. I. Panasenko
 FEATURES OF TRANSFORMATIONS IN SYSTEMS OF NITRATE PRECURSORS OF LANTHANIDS AND ALKALINE METALS IN THE 225

FORMATION OF PHOTOCATALYTIC ACTIVE NANO-LAYERED PEROVSKITE-LIKE PHASES	
O. Dryuchko, D. Storozhenko, N. Bunyakina, I. Ivanytska, I. Gornitsky, V. Khaniukov, K. Kytaihora	
INFLUENCE OF SUBSTITUENT ON POLYMERIZATION ABILITY OF METHACRYLIC MONOMERS BASED ON AURONE FRAGMENT	226
O. Kharchenko, D. Shyrchenko, V. Smokal, O. Krupka	
PECULIARITIES OF ELECTRON-PHONON INTERACTION IN THE INDIUM SELENIDES: <i>Ab INITIO</i> INVESTIGATION	227
L.Yu.Kharkhalis, K.E.Glukhov, T.Ya.Babuka, M.V.Liakh	
THE PRODUCTS OF SO ₂ INTERACTION WITH ALCOHOL SOLUTIONS OF TRIS(HYDROXYMETHYL)AMINOMETHANE	228
Khoma R.E., Dlubovskiy R.M., Baumer V.N., Ennan A.A.-A., Ishkov Yu.V., Vodzinskiy S.V., Gelmboldt V.O.	
SYNTHESIS, CRYSTAL, AND MOLECULAR STRUCTURES OF 3d-METAL 5-SULFOSALICYLATE-BENZOHYDRAZIDE COMPLEXES	229
Koksharova T.V., Savchenko O., Mandzii T.V.	
NEW 2-OXOIMIDAZOLIDINE DERIVATIVES: DESIGN, SYNTHESIS AND EVALUATION OF ANTI-BK VIRUS ACTIVITIES IN VITRO	230
Kornii Yurii, Oleh Shablykin, Volodymyr Brovarets	
POLYMER COATED MAGNETIC NANOPARTICLES	231
Korobeinyk A.V., Tertykh V.A.	
EVALUATION OF THE POLYURETHANE BASED LASER ELEMENTS PHOTOSTABILITY AND BEAM STRENGTH	232
L. Kosyanchuk, N. Kozak, N. Babkina, T. Bezrodna, V. Bezrodnyi, O. Antonenko	
PREPARATION OF POLYLACTIC ACID/SILICA COMPOSITES USING THE <i>IN SITU</i> RING-OPENING POLYMERIZATION OF LACTIDE	233
Kozakevych R.B., Polyshchuk L.M., Tertykh V.A.	
ACTIVATED CARBON (AC) – TITANIUM DIOXIDE (TiO ₂) COMPOSITES: EFFECT OF AC PROPERTIES ON PHOTOCATALYTIC EFFICIENCY	234
Anzhela Kukh, Irina Ivanenko, Igor Astrelin	
SYNTHESIS AND CHARACTERIZATION OF CdS NANOPARTICLES GROWN IN THE STAR-LIKE COPOLYMER	235
Yu. Kuziv, H. Hrytsko, N. Melnik, V. Pavlenko, N. Kutsevol	
PHYSICO-CHEMICAL BASES FOR THE PREPARATION OF POLYMER-INORGANIC (NANO)COMPOSITES	236
G. Dudok, I. Dziaman, N. Semenyuk, K. Kysil, V. Skorokhoda	
STUDIES OF THE PHYSICAL, OPERATIONAL AND OPTICAL-SPECTRAL CHARACTERISTICS OF THE HIGHLY TRANSPARENT TOLUENESULFONAMIDE AND BENZGUANAMINEFORMALDEHYDE POLYMERS	237
Vladimir Lebedev, Tetiana Tykhomyrova	
MAGNETOTHERMAL PROPERTIES OF LANTHANUM MANGANITE PEROVSKITE NANOPARTICLES	238
C. Song, N.A. Liedienov, A.V. Pashchenko, I.V. Fesyeh, V.G. Pogrebnyak, G.G. Levchenko	
LUMINESCENT PROPERTIES OF Cd(II) COORDINATION POLYMER	239

ASSEMBLED FROM 2-THIOPHENECARBOXYLIC ACID AND 1,2-BIS(PYRIDIN-4-YLMETHYLENE)HYDRAZINE LIGANDS	
V. N. Lozovan, O. V. Kulikova, V. Ch. Kravtsov, E. B. Coropceanu, M. S. Fonari	
SPR DETECTION OF URANIUM IN AQUEOUS MEDIA USING POLYDOPAMINE FILMS	240
S. Mamykin, I. Gnilitzkiy, M. Dusheyko, T. DeVol, V. Bliznyuk	
COMPLEXES OF COBALT AND NICKEL FUMARATES WITH BENZOHYDRAZIDE AND PHENYLACETIC ACID HYDRAZIDE. SYNTHESIS, CRYSTAL, AND MOLECULAR STRUCTURES	241
Mandzii T.V., Savchenko O., Koksharova T.V.	
EFFECT OF ADDITION OF THE MONOMERS BASED ON 4'-METHACRYLOXYAURONES ON THERMAL STABILIZATION OF POLYSTHYRENE.	242
A. Martynes-Harsiia, N. Iukhymenko, A. Kolendo	
DESIGN, SYNTHESIS AND INVESTIGATION OF 1,8-NAPHTHALIMIDE BASED COMPOUNDS	243
N. Masimukku, D. Gudeika, D. Volyniuk, J. V. Grazulevicius	
NANOSIZED Pt-SnO ₂ GAS SENSITIVE MATERIALS FOR CREATION SEMICONDUCTOR SENSORS TO HYDROGEN	244
Matushko I.P., Oleksenko L.P., Maksymovych N.P., Lutsenko L.V., Fedorenko G.V.	
RESEARCH OF MORPHOLOGY OF WORKING SURFACES OF CONTACTS AND PHYSICAL MECHANICAL PROPERTIES OF ECOLOGICALLY SAFE ELECTRIC CONTACT MATERIALS	245
Korobsky V.V., Mrachkovsky A.M.,	
RESEARCH OF THE PHASE COMPOSITION OF AUTOCLAVE AND NON-AUTOCLAVE AERATED CONCRETE CONTAINING FERROSILICON AS A GASIFIER	246
A.O. Musina, O.O. Sihunov, T.V. Kravchenko, A.O. Hura	
INFLUENCE OF THE METHOD OF OBTAINING GAS SENSITIVE MATERIALS ON CHARACTERISTICS OF CO-CONTAINING SENSORS CREATED ON THEIR BASE	247
Matushko I.P., Maksymovych N.P., Oleksenko L.P., Scolyar G.I., Ripko O.P.	
BENZOPHENONE PHENOTHIAZINE-5,5-DIOXIDE MATERIAL EXHIBITING PHOTO-INDUCED CONFORMATIONAL REARRANGEMENTS	248
E. Narbutaitis, M.Guzauskas, D. Volyniuk, J. V. Grazulevicius	
THIN NANOPOROUS GRAPHITIC FILMS FABRICATED BY MAGNETRON PLASMA CHEMICAL VAPORE DEPOSITION FROM ACETYLENE	249
A.Nazarov, O.Slobodian, A.Rusavsky, Yu.V.Gomeniuk, N.Pavlusiak, A.Vasin, T.Nazarova, O.Gudymenko, O.Khyzhun, V.Stepanov, D.Kisyl	
MOLECULAR RELAXATIONS IN MODIFIED MICROCRYSTALLINE CELLULOSE	
Alekseev O., Lazarenko M., Nedilko S.G., Revo S., Scherbatskii V., Teselko P., Prokopets V., Hamamda S., Dorbani T., Naoui Y., Boyko V., Sheludko V., Gomenyuk O.	250
FLUORESCENCE PROPERTIES INTERACTION INTERFERON A2B WITH OLIGO- AND MONORIBONUCLEOTIDES	251
R.O. Nikolaiev, Ye.Yu. Stepanenko, S.I. Chernykh, Z. Yu. Tkachuk	

NEW PARAMAGNETIC CENTER IN Cu-DOPED Y-STABILIZED ZrO ₂	252
V.V. Nosenko, I.P. Vorona, S.M. Okulov, L.Yu. Khomenkova, N.O. Korsunskaya	
SYNTHESIS AND CHARACTERIZATION OF A NEW Sn _{1-x} Mn _x Bi ₂ Te ₄ SOLID SOLUTIONS AS A POTENTIAL MAGNETIC TOPOLOGICAL INSULATORS	253
E.N. Orujlu, Z.S. Aliev, M.B. Babanly	
EXCITATION DYNAMIC IN NEW TYPE DETECTORS BASED ON STILBENE	254
R. Karpicz, L.Valkunas, N. Ostapenko, Yu. Ostapenko, O.Kerita, N. Galunov, I. Lazarev, Ya. Polupan	
HYBRID-CONTROLLED SYNTHESIS OF COBALT NANOPARTICLES IN AQUEOUS SOLUTIONS	255
N.M. Permyakova, T.B. Zheltonozhskaya, D.O. Klymchuk, V.V. Klepko, L.N. Grishchenko, A.S. Fomenko, L.O. Vretik	
NEW CARBAZOLE- π -BRIDGE-TRIAZOLE COMPOUNDS FOR OLED APPLICATIONS	256
N. Pokhodylo, R. Lytvyn, M. Stanicka, M. Tupyshchak, Kh. Pitkovych, O. Bezvikonnyy, E. Urbonas, D. Volyniuk, S. Kutsiy, K. Ivaniuk, V. Kinzhybalov, P. Stakhira, A. Tomkeviciene, J.V. Gražulevičius, M. Obushak	
NEW CONDUCTING POLYMER NANOSTRUCTURED COMPOSITES FOR ECOLOGICAL MONITORING AND PROTECTION	257
A. Pud, N. Ogurtsov, M. Petrychuk, V. Oliynyk, V. Zagorodnii, O. Kruglyak	
A NEW OPERATING PRINCIPLE OF SELECTIVE DETECTION IN GASES	258
A.V. Savytskyi, G.V. Kamarchuk, A.P. Pospelov, A.O. Herus, Yu.S. Doronin, V.L. Vakula, E. Faulques	
THE EFFECT OF BUTIL ALCOHOL ON ANODIC BRASS OXIDATION PROCESSES IN PHOSPHATE ELECTROLYTES	259
Silchenko D., Shkolnikova T., Pancheva H., Pilipenko A.	
EFFECTS OF CHARGE ORDERING IN ELECTRONIC SUBSYSTEM OF QUASI-2D BEDT-TTF CONDUCTORS	260
Yu. Skorenkyy, O. Kramar, Yu. Dovhopyatyy	
SYNTHESIS AND PHOTOLUMINESCENCE OF SILICA AND SILICA-TITANIA HYBRID MATERIALS DOPED WITH LANTHANIDE EDTA- AND DTPA-CHELATES	261
S.S. Smola, E.M. Fadieiev, N.V. Rusakova, I.V. Berezovskaya	
SILVER DOPED TiO ₂ -LDH CLAY NANOCOMPOSITES FOR PHOTOCATALYTIC REDUCTION OF CARBON DIOXIDE	262
Starukh H., Petryk I., Koci K.	
INVESTIGATION OF MONTMORILLONITE INTERCALATION BY POLYVINYLPIRROLIDONE AND OBTAINING TERMOPLASTIC NANOCOMPOSITES	263
O. Suberlyak, V. Krasinskyi, O. Nikitchuk	
SOME FEATURES OF EFFECTIVE STACKING INTERACTIONS IN AROMATIC POLYAMIDES	264
A.V. Tokar, O.P. Chigvintseva	
NANOCOMPOSITE POLYMER SENSOR MATERIALS FOR DETECTION OF HEAVY METAL ION CONTAMINANTS IN WASTE WATER	265
O. Zinchenko, V. Ezhova, O. Slisenko, A. Tolstov	
THE BACTERICIDAL MATERIAL POLYURETHANE FOAM-I ₂ BASED ON THE	266

SORPTION OF IODINE FROM AQUEOUS AND ORGANIC SOLUTIONS

A. Yu. Trokhimenko

STRUCTURE AND MORPHOLOGY OF CRYPTOMELANE SAMPLES SYNTHESIZED BY DIFFERENT METHODS AND THEIR ACTIVITY IN THE REACTION OF SULFUR DIOXIDE OXIDATION WITH AIR OXYGEN 267

T.L. Rakitskaya, A.S. Truba, A.P. Nazar, T.A. Kiose, V.Y. Volkova

SOLIDPHASE EQUILIBRIA IN THE GeTe-Bi₂Te₃ SYSTEM AND CRYSTAL STRUCTURES OF THE INTERMEDIATE PHASES 268

Alakbarova T.M., Orijlu E.N., Imamaliyeva S.Z., Babanly M.B.

TEMPERATURE-TRIGGERED AGGREGATION OF PNIPAM-BASED CORE/SHELL NANOPARTICLES 269

L.O. Vretik, O.M. Chepurna, A.I. Marynin, O.A. Nikolaeva, T.Y. Ohulchansky

KINETICS OF FREE RADICAL POLYMERIZATION OF METHYL METHACRYLATE INITIATED BY PENTAZADIENES 270

Vyshnevsky D., Syromiatnikov V., Kolendo A.

ORGANO-MINERAL COMPOSITE POLY(4-VINYLPYRIDINE-*b*-STYRENE)-SILICA GEL: SYNTHESIS AND SORPTION PROPERTIES 271

M. Tovstenko-Zabelin, E.S. Yanovska, O. Kondratenko, O.A. Nikolaeva, D. Sternik, I.O. Savchenko, L.O. Vretik

COMPOSITION AND MOLECULAR WEIGHT DISTRIBUTION OF SUBSTANCES FROM NATURAL COFFEE EXTRACTS 272

Kurta S. A., Khatsevich O.M., Yakubiak M.R.

ADSORPTION PROPERTIES OF NATURAL ALUMOSILICATE UKRAINIAN MINERALS, *IN SITU* MODIFIED BY POLY [8-METHACROYLOXYQUINOLINE] TO Pb(II), Mn(II), Cu(II) AND Fe(III) IONS 273

I. Savchenko, E. Yanovska, D. Sternik, O. Kychkyruk

FLUORESCENT TECHNIQUES FOR REGISTRATION OF DRUG REDISTRIBUTION FROM NANOSIZED CARRIERS 274

V. Zorin, T. Zorina, I. Kravchenko, N. Kutsevol

SECTION 7. Nanocomposites and lasers in medicine and biology

MORPHOLOGICAL AND PROPERTIES CHARACTERIZATION OF NOVEL BIOCOMPOSITES OF POLY(3-HYDROXYBUTYRATE-CO-3-HYDROXYHEXANOATE) (PHBHH_x)/ALOE VERA FIBERS 276

Mustapha Kaci, Nadjet Dehouche, Celia Idres, Idris Zembouai, Stéphane Bruzaud

AGGREGATIVE STABILITY OF RARE-EARTH BASED NANOPARTICLES IN DIFFERENT MICROENVIRONMENTS AND BIOLOGICAL MEDIA 277

Katherine Averchenko, Nataliya Kavok, Ganna Grygorova, Vladimir Klochkov

EFFECT OF DIFFERENT DOSES OF SILVER NANOPARTICLES IN POLYMER MATRIX TREATMENT ON FEMALE REPRODUCTIVE FUNCTION IN MICE 278

Sribna V., Kaleinikova O., Kuziv Y., Lytvynenko A., Vinogradova-Anyk O., Karvatskiy I., Voznesenskaya T., Blashkiv O., Kutsevol N.

ECO-FRIENDLY SYNTHESIS OF Ag₂S NANOPARTICLES, THEIR OPTICAL AND ANTIMICROBIAL PROPERTIES 279

M. Borova, A. Naumenko, O. Kapush, S. Plokhovska, I. Horiunova, A. Yemets

INTERPLAY OF ANTIBIOTIC GRAMICIDIN S WITH CHOLESTEROL AND DEXTRAN-POLYACRYLAMIDE COPOLYMERS IN LIPID MEMBRANES 280

L.V. Budianska, V.P. Berest, N.V. Kutsevol, Y.I. Kuziv, O.V. Vashchenko

CHEMICALLY CROSS-LINKED HYBRID HYDROGELS FOR PROLONGED RELEASE OF ANTIBIOTICS	281
Oksana Nadtoka, Volodymyr Doroschuk, Serhii Lelyushok, Nataliya Kutsevol	
APPLICATION OF INTERNAL CAPACITANCE COMPENSATION OF REACTIVE POWER IN SINGLE-PHASE INDUCTION MOTORS	282
Zablodskiy M.M., Chuenko R.M.	
THERMAL ASSISTED ANTI-STOKES LUMINESCENCE AND LASER COOLING EFFECT OF TRICARBOCYANINE DYES	283
O.P. Dimitriev, O.M. Fedoryak, I.P. Sharanov, Yu.L. Slominski	
HOST-GUEST COMPLEXES OF MEFENAMIC ACID AND β -CYCLODEXTRIN DERIVATIVES: SPECTROSCOPIC STUDY	284
G.V. Grygorova, V.K. Klochkov, S.L. Yefimova, Yu.V. Malyukin	
CONTROLLED PRO/ANTIOXIDANT ACTIVITY OF $GdYVO_4:Eu^{3+}$ NANOPARTICLES	285
K.O. Hubenko, S.L. Yefimova, P.O. Maksimchuk, N.S. Kavok, V.K. Klochkov, Yu.V. Malyukin	
PHOTODYNAMIC THERAPY IN THE TREATMENT OF PATIENTS WITH NEUROPATHIC AND ISCHEMIC DIABETIC FOOT SYNDROME	286
Tetiana Kharchenko, Oksana Melekhovets, Yuriy Melekhovets, Alevtuna Radko	
<i>IN SILICO</i> APPROACHES IN DRUG DESIGN OF NOVEL ANTIOXIDANT AGENTS	287
Olena Klenina, Volodymyr Ogurtsov, Borys Zimenkovsky	
STRUCTURAL CHARACTERIZATION, ELECTROMAGNETIC AND THERMODYNAMIC PROPERTIES OF POULTRY BY-PRODUCTS	288
M. M. Zablodskij, S. I. Kovalchuk	
INTERPHASIC INTERACTIONS IN MIXTURES OF HYDROPHOBIC AND HYDROPHILIC SILICA	289
V.V. Turov, T.V. Krupskaya, M.T. Kartel	
USE OF PHOTODYNAMIC THERAPY FOR TREATMENT OF CHRONIC ULCERS	290
B. V. Krysa, V. M. Krysa	
<i>IN VITRO</i> RESEARCH ON DEGRADATION OF 60S BIO-CERAMIC IMPLANT MATERIALS	291
Kusyak A.P., Chorni V.S., Dubok V.A.	
NANOCOMPOSITES FOR ANTICANCER THERAPY	292
Nataliya Kutsevol, Yuliiia Kuziv, Vasyl Chekhun, Vladimir Zorin, Michel Rawiso	
ENHANCEMENT OF THE X-RAY PDT NANOSYSTEM EFFICIENCY BY THE PRESENCE OF HfO_2 NANOPARTICLES	293
Losytskyy M.Y., Vretik L.O., Nikolaeva O.A., Degoda V.Y., Shcherbakov O.B., Podust G.P., Doroshenko I.P., Ohulchanskyy T.Y., Yashchuk V.M.	
EVALUATION OF ACID-BASE SURFACE PROPERTIES OF NANOSCALE Fe_3O_4 BY POTENTIOMETRIC TITRATION	294
Kusyak N.V., Kusyak A.P., Petranovska A.L., Gorbyk P.P.	
GREEN SYNTHESIS AND ADSORPTION PROPERTIES OF COBALT FERRITES	295
M. Liaskovska, T. Tatarchuk	
BINDING OF Zr PHTHALOCYANINES WITH BETA-LACTOGLOBULIN: SPECTRAL-FLUORESCENT STUDY	296

Losytskyy M.Y., Chernii S.V., Chornenka N.V., Tretyakova I.M., Chernii V.Y., Kovalska V.B.	
LIGHT-INDEPENDENT PRO-OXIDANT ACTIVITY OF UV PRE-IRRADIATED ORTHOVANADATE NANOCRYSTALS	297
P. Maksimchuk, V. Omielaieva, K. Hubenko, V. Seminko, S. Yefimova, Y. Malyukin	
HYBRID HYDROGELS LOADED WITH BIOLOGICAL ACTIVE DYES AS MATERIALS FOR THERAPEUTIC DELIVERY	298
Nadtoka Oksana, Virych Pavlo, Kutsevol Natalia, Martynyuk Victor	
CHRONIC VENOUS DISEASE CEAP 1-2 TREATMENT WITH 1064 Nd:YAG LASER	299
V. Mishura, Y. Melekhovets, V.I Pak, O.Melekhovets, O. Sytnik	
RESEARCH OF WORK OF A ROOFTOP SOLAR POWER PLANT IN HOT WATER SUPPLY SYSTEMS OF STUDENT DORMITORIES	300
Nalyvaiko V., Radko I., Okushko O., Mrachkovska N. Antypov Ie.	
SYNTHESIS OF POLYMERIC HYDROGELS INCORPORATING CHLORHEXIDINE AS ANTIBACTERIAL WOUND DRESSINGS	301
Oksana Nadtoka, Pavlo Virych, Vasyl Krysa, Nataliya Kutsevol	
NANOPARTICULAR AGENTS FOR NEAR INFRARED LUMINESCENCE BIOIMAGING AND IMAGING GUIDED THERAPY	302
T.Y. Ohulchanskyy	
PHOTOINACTIVATION OF <i>STAPHYLOCOCCUS AUREUS</i> WITH MONOCHROMATIC LOW ENERGY VISIBLE LIGHT	303
Pavlo Virych, Oksana Nadtoka, Petro Virych, Victor Martynyuk, Nataliya Kutsevol	
FORMATION AND DYNAMICS OF OXYGEN VACANCIES IN CeO ₂ -ZrO ₂ AND CeO ₂ -Y ₂ O ₃ NANOCRYSTALS	304
Okrushko O., Seminko V., Maksimchuk P., Malyukin Yu.	
MASS SPECTROMETRY STUDY OF NANOBIOCOMPLEXES FORMATION BETWEEN DIMETHYL SULFOXID AND ANTIMICROBIAL AGENTS	305
V. Pashynska, M. Kosevich, A. Gomory	
PHOTODYNAMIC THERAPY AS A NEW APPROACH IN THE ACNE VULGARIS TREATMENT	306
Radko A.S., Melekhovets O.K., Kharchenko T.O., Melekhovets Yu.V.	
PONDEROMOTIVE FORCES AS A REASON FOR DESTRUCTION OF VIRUS INTERACTING WITH NANOPARTICLES	307
V. Lozovski, N. Rusinchuk, V. Lysenko, M. Lokshyn, S. Zagorodnya, M. Chayka, Yu. Mukha, N. Vityuk	
ELABORATION OF NEW APPROACHES FOR PREPARATION OF HIGHLY SENSITIVE CONDUCTOMETRIC BIOSENSORS FOR L-ARGININE DETERMINATION	308
O.Y. Saiapina, S.V. Dzyadevych	
IMPROVING ANTIOXIDANT PROPERTIES OF NANOCERIA BY DOPING AND LASER IRRADIATION	309
V. Seminko, P. Maksimchuk, G. Grygorova, E. Okrushko, Y. Malyukin	
FILM HYDROGELS WITH SILVER NANOPARTICLES FOR THE TREATMENT OF BURNS AND WOUNDS	310
V. Skorokhoda, N. Semenyuk, Y. Melnyk, M. Bratychak, G. Dudok	
IMPROVEMENT OF THE METHOD FOR DETERMINING ENERGY	311

CONSUMPTION IN A BIOGAS REACTOR

M.M. Zablodskiy, M.O. Spodoba,

MULTIFUNCTIONAL $\text{ReVO}_4\text{:Eu}^{3+}$ NANOPARTICLES IN THERANOSTICS

S.L. Yefimova, P.O. Maksimchuk, K.O. Hubenko, V.K. Klochkov, Yu.V. Malyukin 312

DETERMINATION OF OPTIMUM APEX ANGLE OF CONE-SHAPED PART OF PELLETIZER DIE BY MEANS OF SIMULATING BIOMASS GRANULATION PROCESS

Polishchuk Viktor, Tarasenko Svitlana, Antypov Ievgen, Bilyk Stepaniia 313

SECTION 8. Physics and technology of organic solar cells, LEDs, FETs, sensors, conjugated thin films for electrochromic devices.

SYNTHESIS AND CHARACTERIZATION OF ELECTROACTIVE MATERIALS FOR AIEE PROPERTIES

R. S.e Bernard, G. Sych, S. Nasiri, O. Bezvikonnyi, D. Volyniuk, A. Ariffin, V. Andrulevicienė, J. V. Grazulevicius 315

ELECTROOPTICAL TRANSITIONS IN CONJUGATED POLYMER SYSTEMS

Aksimentyeva O.I. 316

DERIVATIVES OF TRIAZINE AND *TERT*-BUTYLCARBAZOLE AS TADF

EMITTERS FOR OLEDs 317

O. Bezvikonnyi, D. Gudeika, D. Volyniuk, J. V. Grazulevicius

THE INFLUENCE OF MgO ADDITION ON RED PHOTOLUMINESCENCE OF Mn^{4+} ACTIVATED Zn_2TiO_4 PHOSPHORS

L. Borkovska, T. Stara, I. Vorona, V.Nosenko, K.Kozoriz, C. Labbé, J. Cardin, J.-L. Doualan 318

ORGANIC-INORGANIC NANOSTRUCTURED SENSING MATERIALS WITH TUNABLE ADSORPTION PROPERTIES

J. Burlachenko, I. Kruglenko, B.Snopok 319

STRUCTURE, OPTICAL AND SENSORY PROPERTIES OF POLY-3,4-ETHYLENEDIOXYTHIOPHENE FILMS DOPED WITH GRAPHENE OXIDE

Horbenko Yu. Yu., Glazunova V. A., Ivaniuk H. B., Matkivska G. M., Vistak M., Sarykov G. O., Aksimentyeva O. I. 320

GREEN PHOTOLUMINESCENCE OF N-ANNELATED PERYLENES IN A DISTRIBUTED FEEDBACK CAVITY.

I.Dupliak, A. Buciskas, Kh. Ivaniuk, H. Petrovska, D. Volyniuk, V. Fitio, P.Stakhira, J. V. Grazulevicius 321

NEW MECHANISM OF THERMAL CONDUCTIVITY OF MOLECULAR SUBSTANCE

A. I. Krivchikov, O. A. Korolyuk, O. O. Romantsova, Yu. V. Horbatenko, A. Jeżowski, D. Szewczyk 322

NEW STRUCTURE HOLE TRANSPORTING DERIVATIVES FOR PHOSPHORESCENT OLED DEVICES

G. Krucaite, D. K. Dubey, S. S. Swayamprabha, R. A. K. Yadav, D. Blazevicius, J. Tagare, S. Chavhan, T.-C. Hsueh, S. Vaidyanathan, S. Grigalevicius, J.-H.Jou 323

THE INFLUENCE OF PHOSPHORUS AND CHLORINE ORGANIC VOLATILE COMPOUNDS ON THE SENSOR PROPERTIES OF ELECTROCONDUCTIVE COMPOSITE FILMS

Kukla O.L., Mamykin A.V., Pud A.A., Ogurtsov N.A. 324

SOLUTION-PROCESSED WHITE ORGANIC LIGHT-EMITTING DIODE BASED 325

ON TWO EMISSIVE LAYERS

- M. Mahmoudi, J. Keruckas, D. Volniuk, J. Simokaitiene, J. V.Grazulevicius
 POLYMER ELECTROLYTE MEMBRANES BASED ON PEO-CONTAINING
 BLOCK COPOLYMERS 326
- Larisa Kunitskaya, Tatyana Zheltonozhskaya, Stanislav Nessin, Valeriy Klepko
 FEATURES OF THE OPERATION OF BIOSENSORS BASED ON THE PPR
 EFFECT IN CHROMATIC MODE 327
- Kukla O.L., Fedchenko A.N., Vahula O.A., Surovtseva E.R., Shirshov Yu.M.
 EFFECT OF POST-PROCESSING ON THE EFFICIENCY OF PEDOT/PSS-Si
 SOLAR CELLS 328
- Mamykin S.V., Lunko T.S., Mamontova I.B., Kondratenko O.S., Kotova N.V.
 POLY COMPLEXES BASED UNSATURATED β -DICARBONYLS AND
 LANTHANIDES FOR ORGANIC LIGHT-EMITTING DIODES 329
- Savchenko I.O., Berezhnyska O.S. Ivakha N.B., Trunova E.K.
 SYNTHESIS AND STUDIES OF PROPERTIES OF ORGANIC
 SEMICONDUCTORS CONTAINING DONOR AND ACCEPTOR MOIETIES 330
- L. Skhirtladze, J. V. Grazulevicius, A. Bin Ariffin, W. K.Lin
 SYNTHESIS AND PROPERTIES OF PHENANTHROIMIDAZOLYL-BASED
 DERIVATIVES 331
- E. Skuodis, R. Zubrevicius, D. Volyniuk, D. Gudeika, J.V. Grazulevicius
IN SITU IMMOBILIZATION ON THE SILICA GEL SURFACE AND
 ADSORPTION CAPACITY OF POLY [8-METHACROYLOXYQUINOLINE] ON
 TOXIC METALS IONS 332
- I. Savchenko, E. Yanovska, L. Vretik, D. Sternik, O. Kychkyruk
 THERMALLY-STIMULATED LUMINESCENCE IN AN OLED HOST
 MATERIAL DOPED WITH TADF EMITTERS 333
- Andrei Stankevich, Alexander Vakhnin, Andrey Kadashchuk
 ON THE NATURE OF CURRENT CARRIERS IN INTERPOLYMER
 COMPLEXES PEDOT:PSS AS COMPONENTS OF SOLAR CELLS 334
- O.I. Tkachuk, M.I. Terebinska, Ya.S. Krivoruchko, V.V. Lobanov
 COMBINED POLYMER SENSITIVE ELEMENTS FOR GAS SENSORS 335
- O. Aksimentyeva, B. Tsizh, Yu. Horbenko, M. Dzeryn
 EXCIPLEX-BASED APPROACHES FOR WHITE LIGHT EMITTING DIODES 336
- D. Volyniuk, G. Sych, M. Guzauskas, J. Simokaitiene, J. V. Grazulevicius
 3-[3-(4-CHLOROPHENYL)-2-(4-FLUOROPHENYL)-2H-ISOINDOL-1-YL]-1-
 PHENYLPYRROLIDINE-2,5-DIONE AS A CANDIDATE FOR SOLAR CELLS
 APPLICATIONS 337
- A. El Haimour, I. V. Levkov, T. V. Yegorova, A. I. Kysil, H. Bakkali, E. Blanco,
 Z. V. Voitenko
 NEW MATERIALS BASED ON COMPLEXES AND METALOPOLYMERS OF
 EUROPIUM (III) 338
- Berezhnyska O.S., Rohovtsov O.O., Fedorov Ya. V., Savchenko I.O., Trunova O.K.
 PROPERTIES OF POLYHEXAFLUOROPROPYLENE THIN FILMS 339
- K. Grytsenko, Yu. Kolomzarov, P. Lytvyn, V. Ksianzou, S. Schrader
 Biologically active compounds based on silver complexants 340
- Myhalchuk A.O., Sikors'ka K.A, Kamenska T.A., Berezhnyska O.S.
 SELF-ASSEMBLED DICHROIC ORGANIC SOLIDS 341

K. Grytsenko, P. Lytvyn, Y. Kolomzarov, Y. Slominskii, V. Kurdiukov, O. Navozenko SYNERGETIC EFFECT STUDY IN TWO-COMPONENT MIXTURES OF ASCORBIC ACID WITH AMINO ACIDS	342
Hocharenko A., Chygyrynets O LASER TEXTURING OF SILICON SOLAR CELLS AS AN ALTERNATIVE TO CHEMICAL WET ETCHING	343
O. Candemir, E. Genc, H. Ciftpinar, H. Nasser, M. Zolfaghari Borra, A. Bek, R. Turana, and I. Pavlov PHOTOCONDUCTIVITY IN POLYETHYLENE-SEMICONDUCTOR (p-GaSe) COMPOSITE	344
Babayeva R.F., Abdinov A.Sh., Amirova S.I. PHOTOELECTRET EFFECT IN POLYMER-PHOTOSENSITIVE SEMICONDUCTOR n-InSe COMPOSITES	345
Dzhafarova S.Z., Babayeva R.F., Ragimova N.A., Abdinov A.Sh. AUTHOR INDEX	346
CONTENTS	360

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МАТЕРІАЛИ ТЕЗ ДОПОВІДЕЙ ТА ВИСТУПІВ

(АНГЛІЙСЬКОЮ МОВОЮ)

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