

## Contents

### Invited Lectures

|                                                                                                                                                                                    |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| M. Endo                                                                                                                                                                            |    |
| <b>Growth, mass production, functions and applications of carbon nanotubes in the era of large scale production</b>                                                                | 2  |
| <b>D. Golberg, Y. Bando, M. Mitome, P. Costa, C. Tang, and C. Zhi</b>                                                                                                              |    |
| <b>Novel functional inorganic nanotubes</b>                                                                                                                                        | 3  |
| H. Shinohara                                                                                                                                                                       |    |
| <b>Putting metallofullerenes and linear-chain polyyne molecules into carbon nanotubes</b>                                                                                          | 4  |
| V.I. Sokolov                                                                                                                                                                       |    |
| <b>Fullerene - metallocene molecules different types</b>                                                                                                                           | 5  |
| <b>S.H. Strauss, O.V. Boltalina, A.A. Popov, I.E. Kareev, N.B. Shustova, I.V. Kuvychko, S.F. Lebedkin, Susie M. Miller, R.D. Bolskar, O.P. Anderson, K. Seppelt, and L. Dunsch</b> |    |
| <b>Fundamental and applied chemistry of fullerene(CF<sub>3</sub>)<sub>n</sub> compounds</b>                                                                                        | 6  |
| M. Terrones                                                                                                                                                                        |    |
| <b>The importance of doping carbon nanostructures: recent advances and applications</b>                                                                                            | 7  |
| V.L. Kuznetsov                                                                                                                                                                     |    |
| <b>Properties of onion-like carbon produced from nanodiamond</b>                                                                                                                   | 8  |
| V.Ya. Prinz                                                                                                                                                                        |    |
| <b>Precise semiconductor and carbon nanoshells and systems</b>                                                                                                                     | 9  |
| G.N. Churilov                                                                                                                                                                      |    |
| <b>Synthesis of fullerenes and other nanomaterials in arc discharge</b>                                                                                                            | 10 |
| O. Kiselev                                                                                                                                                                         |    |
| <b>From fullerenes to carbon nanotechnologies and to understanding of nanomedicine perspectives</b>                                                                                | 11 |

### Oral Contributions

|                                                                                                                                                   |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----|
| N.B. Shustova, I.V. Kuvychko, A.A. Popov, S.H. Strauss, O.V. Boltalina, S. Stevenson, J.P. Phillips, M.A. Mackey, and C.E. Coumbe                 |    |
| <b>New adventures in exohedral derivatization of fullerenes and metallofullerenes</b>                                                             | 12 |
| <b>M. Bystrzejewski, A. Huczko, H. Lange, W. Kaszuwara, and S. Cudziło</b>                                                                        |    |
| <b>Carbon-encapsulated magnetic nanoparticles spontaneously formed by thermolysis route</b>                                                       | 13 |
| <b>A.A. Goryunkov, I.N. Ioffe, S.I. Troyanov, and L.N. Sidorov</b>                                                                                |    |
| <b>Synthesis, structure, and chemistry of the fullerene-based fluorocarbons</b>                                                                   | 14 |
| <b>D.V. Konarev, S.S. Khasanov, G. Saito, and R.N. Lyubovskaya</b>                                                                                |    |
| <b>The design of ionic complexes of fullerenes manifesting magnetic transitions and high conductivity</b>                                         | 15 |
| M. Haruta, H. Kurata, K. Yoshida, and S. Isoda                                                                                                    |    |
| <b>Direct observation of iodine-doped C<sub>60</sub> crystal by scanning transmission electron microscope</b>                                     | 16 |
| <b>S.M.C. Vieira, T. Drewello, S. Kotsiris, P.R. Birkett, and C.A. Rego</b>                                                                       |    |
| <b>Novel method to derivatise [60]fullerene</b>                                                                                                   | 17 |
| <b>D. Wrobel, A. Graja, K. Lewandowska, and H. Manikowski</b>                                                                                     |    |
| <b>Charge transfer in fullerene-chromophor systems studied with light-induced electron spin resonance</b>                                         | 18 |
| <b>V.T. Lebedev, Gy. Ötörk, E.Yu. Melenevskaya, L.V. Vinogradova, and I.N. Ivanova</b>                                                            |    |
| <b>Poly(N-vinyl caprolactam) - C<sub>60</sub> complexes in aqueous solution</b>                                                                   | 19 |
| <b>M.V. Korobov, N.V. Avramenko, A.G. Bogachev, M.M. Efremova, N.N. Rozhkova, and E. Osawa</b>                                                    |    |
| <b>Nanophase of water in nano-diamond and fullerene gels and dispersions</b>                                                                      | 20 |
| <b>V.V. Brazhkin, A.G. Lyapin, V.L. Solozhenko, V.I. Bugakov, S.N. Dub, O.O. Kurakevych, and M.V. Kondrin</b>                                     |    |
| <b>High-temperature transitions of fullerite C<sub>60</sub> at moderate pressures</b>                                                             | 21 |
| <b>L.A. Chernozatonskii, P.B. Sorokin, A.S. Fedorov, and J. Bruning</b>                                                                           |    |
| <b>Electronic waveguides and superlattices based on graphene with "lines" of chemisorbed hydrogen pairs</b>                                       | 22 |
| <b>V.Yu. Osipov, T. Enoki, K. Takai, A. Volgaev, and A.Ya. Vul'</b>                                                                               |    |
| <b>"Smearing" of density-of-states in nanographite</b>                                                                                            | 23 |
| <b>S.V. Demishev, A.D. Bozhko, V.V. Glushkov, A.G. Lyapin, E.D. Obraztsova, A.A. Pronin, T.V. Ishchenko, and N.A. Samarin, and N.E. Sluchanko</b> |    |
| <b>Hopping conductivity spectroscopy of carbon nanocluster materials</b>                                                                          | 24 |
| <b>T.L. Makarova and I.B. Zakharova</b>                                                                                                           |    |
| <b>Separation of intrinsic and extrinsic contribution to fullerene magnetism</b>                                                                  | 25 |

|                                                                                                                                                                             |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <b>A.V. Bazhenov, T.N. Fursova, I.O. Bashkin, A.P. Moravskii, and Yu.M. Shulga</b>                                                                                          |    |
| <b>Vibrational spectra of C<sub>60</sub>H<sub>x</sub> with 36?x?60 and emission/absorption of some interstellar clouds</b>                                                  | 26 |
| <b>V.K. Malinovsky, A.A. Anikin, A.A. Kalinin, A.M. Pugachev, Yu.N. Pal'yanov, and N.V. Surovtsev</b>                                                                       |    |
| <b>Study of low-frequency Raman spectrum in carbon phases prepared from C<sub>60</sub> under pressure</b>                                                                   | 27 |
| <b>F. Uhlik, Z. Slanina, and S. Nagase</b>                                                                                                                                  |    |
| <b>Computational treatments of endohedral fullerenes for nanoscience applications: alkaline earth series X@C<sub>74</sub></b>                                               | 28 |
| <b>V.V. Shnitov and Yu.S. Gordeev</b>                                                                                                                                       |    |
| <b>Optical constants of modified C<sub>60</sub> determined by Kramers-Kronig analysis of reflection-electron-energy-loss spectroscopy data</b>                              | 29 |
| <b>K.P. Meletov, I.O. Bashkin, V. V. Shestakov, A.V. Krestinin, V.A. Davydov, M.X. Pulikkathara, V.N. Khabashesku, J. Arvanitidis, D. Christofilos, and G.A. Kourouklis</b> |    |
| <b>Raman study of hydrogenated and fluorinated single-wall carbon nanotubes</b>                                                                                             | 30 |
| <b>S.S. Moliver</b>                                                                                                                                                         |    |
| <b>Quantum-chemistry evidence for metallic fcc fullerite[60] under high pressure</b>                                                                                        | 31 |
| <b>B. Verberck, V. Heresanu, S. Rouziere, J. Cambedouzou, P. Launois, E. Kovats, S. Pekker, G. Vliegenthart, K.H. Michel, and G. Gompper</b>                                |    |
| <b>Fullerene-cubane: X-ray experiments and Monte Carlo simulations</b>                                                                                                      | 32 |
| <b>M. Gu, G. Cui, L. Wang, and X. Chen</b>                                                                                                                                  |    |
| <b>Specific heat of rhombohedral C<sub>60</sub> polymer in the temperature range of 2-300K</b>                                                                              | 33 |
| <b>R.J. Papoular, R. Le Parc, C. Levelut, J. Haines, V.A. Davydov, A.V. Rakhmanina, E.E. Belova, L.A. Chernozatonskii, H. Allouchi, and V. Agafonov</b>                     |    |
| <b>Formation of a new phase of C<sub>60</sub> under combined action of high-pressure and X-ray radiation</b>                                                                | 34 |
| <b>I.O. Bashkin, V.E. Antonov, A.V. Bazhenov, T.N. Fursova, R.V. Lukashev, M.K. Sakharov, and Yu.M. Shulga</b>                                                              |    |
| <b>High-pressure hydrographite</b>                                                                                                                                          | 35 |
| <b>M. Yamamoto, H. Aikyou, T. Shiroya, and T. Kyotani</b>                                                                                                                   |    |
| <b>New type of carbon nano-particles made from PAN-based precursors</b>                                                                                                     | 36 |
| <b>M.R. de Aguiar, C. Verissimo, A.C.S. Ramos, S. Moshkalev, and J.W. Swart</b>                                                                                             |    |
| <b>Ni and Fe catalysts for synthesis of carbon nanotubes by thermal chemical vapor deposition using SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> as support layers</b>   | 37 |
| <b>Yu.S. Grushko, M.A. Khodorkovskii, S.G. Kolesnik, V.S. Kozlov, V.A. Shilin, S.A. Grachev, T.O. Artamonova, and L.P. Rakcheeva</b>                                        |    |
| <b>Isomeric and isotopic effects on survival of Tm- and Eu-metallofullerenes at neutron activation</b>                                                                      | 38 |
| <b>S. Rols, V. Agafonov, V. Davydov, A. Rakhmanina, J. Cambedouzou, R. Almairac, and J.-L. Sauvajol</b>                                                                     |    |
| <b>Structure and dynamics of carbon nanopeapods</b>                                                                                                                         | 39 |
| <b>A.I. Kotelnikov, R.A. Kotelnikova, I.I. Faingold, N.P. Konovalova, G.N. Bogdanov, D.V. Mishchenko, E.S. Frog, and V.S. Romanova</b>                                      |    |
| <b>Biologically active hybrid structures based on amino acid derivatives of fullerenes</b>                                                                                  | 40 |
| <b>I.R.G. Peralta, C.G. Ambrose, and L.J. Wilson</b>                                                                                                                        |    |
| <b>In vivo testing of a bone-selective fullerene: preliminary safety and efficacy testing</b>                                                                               | 41 |
| <b>V.Z. Mordkovich, A.R. Karaeva, E.B. Mitberg, S.V. Zaglyadova, Y.V. Mikhailova, and I.A. Maslov</b>                                                                       |    |
| <b>Nonposite catalysts based on carbon nanostructures</b>                                                                                                                   | 42 |
| <b>S.A. Zapunidy, V.V. Bruevich, E.V. Martynova, V.V. Bashilov, V.I. Sokolov, Yu.N. Novikov, and D.Yu. Paraschuk</b>                                                        |    |
| <b>Metallocomplexes of fullerenes for organic solar cells</b>                                                                                                               | 43 |
| <b>H. Hoppe, P.A. Troshin, J.A. Renz, O. Troshina, S.M. Peregudova, A.S. Peregudov, R.N. Lyubovskaya, and G. Gobsch</b>                                                     |    |
| <b>Polymer Solar Cells with novel fullerene derivatives</b>                                                                                                                 | 44 |

### Panel Discussion

|                                                                                                                             |    |
|-----------------------------------------------------------------------------------------------------------------------------|----|
| <b>P.A. Troshin, R. Koeppel, M. Egginger, A.S. Peregudov, S.M. Peregudova, N.Serdar Sariciftci, and R.N. Lyubovskaya</b>    |    |
| <b>Design of fullerene-based acceptor materials for organic solar cells</b>                                                 | 46 |
| <b>P.S. Dorozhkin, V.A. Bykov, A.B. Shubin, V. Gavriluk, S. Saunin, S. Kharintsev, J. Loos, G. Hoffmann, and G. de With</b> |    |
| <b>Confocal Raman microscopy in combination with Atomic force microscope – a tool for subwavelength optical resolution</b>  | 47 |

# Poster Session I

## Electronic Properties of Nanotubes

|      |                                                                                                                                                                                                                                 |    |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| P001 | <b>A.V. Arkhipov</b> , M.V. Mishin, G.G. Sominski, and A.A. Uvarov<br><b>Performance of nanocarbon field emitters in electron device relevant conditions</b>                                                                    | 50 |
| P002 | <b>R.Z. Bakhtizin</b> , A.I. Oreshkin, J.T. Sadowski, and T. Sakurai<br><b>STM study of C<sub>60</sub> thin film growth on Bi/Si surface</b>                                                                                    | 51 |
| P003 | <b>M.M. Brzhezinskaya</b> , N.A. Vinogradov, V.E. Muradyan, Yu.M. Shul'ga, and A.S. Vinogradov<br><b>Electronic structure of fluorinated carbon nanotubes studied by X-ray absorption and photoelectron spectroscopy</b>        | 52 |
| P004 | <b>L.A. Chernozatonskii</b> and E.F. Sheka<br><b>Odd electron pairing in fullerenes and carbon nanotubes</b>                                                                                                                    | 53 |
| P005 | <b>G.S.Bocharov</b> and <b>A.V.Eletsii</b><br><b>Thermal instability at the electron field emission of carbon nanotubes</b>                                                                                                     | 54 |
| P006 | <b>G.S. Ivanchenko</b> , N.G. Lebedev, A.M. Popov, and Y.E. Lozovik<br><b>Dependence of conductivity of double wall carbon nanotubes on inter-layer location and its longitude</b>                                              | 55 |
| P007 | <b>E.S. Govoruhina</b> , N.G. Lebedev, and <b>G.S. Ivanchenko</b><br><b>The temperature dependence of the tensor of proton conductivity of single-wall nanotubes</b>                                                            | 56 |
| P008 | <b>G.S. Ivanchenko</b> and N.G. Lebedev<br><b>Influence of inter-layer rotation on phonon spectrum of double-wall carbon nanotubes</b>                                                                                          | 57 |
| P009 | <b>A.L. Musatov</b> , <b>K.R. Izrael'yants</b> , A.B. Ormont, and E.F. Kukovitskii<br><b>High current density field electron emission from carbon nanotube emitters accompanied by stable radiation of light from nanotubes</b> | 58 |
| P011 | <b>V.I. Klesch</b> and A.N. Obraztsov<br><b>Modeling of field emission from nano-carbons</b>                                                                                                                                    | 59 |
| P012 | <b>A.S. Kulish</b> , A.M. Popov, Yu.E. Lozovik, and E. Bichoutskaia<br><b>Nanorelay based on multi-walled nanotubes</b>                                                                                                         | 60 |
| P013 | <b>Yu.I. Latyshev</b> , Z.Ya. Kosakovskaya, A.P. Orlov, A.Yu. Latyshev, and V.V. Kolesov<br><b>Nonlinear interlayer transport in the aligned carbon nanotube films and graphite</b>                                             | 61 |
| P014 | <b>M.B. Belonenko</b> , E.V. Demushkina, and N.G. Lebedev<br><b>Electromagnetic solitons in carbon nanotube ropes</b>                                                                                                           | 62 |
| P015 | <b>M.B. Belonenko</b> , E.V. Demushkina, and N.G. Lebedev<br><b>Current domains in carbon nanotube ropes</b>                                                                                                                    | 63 |
| P016 | <b>M.B. Belonenko</b> , E.V. Demushkina, and N.G. Lebedev<br><b>Anti ferromagnetic solitons in carbon nanotubes</b>                                                                                                             | 64 |
| P017 | <b>M. Nischenko</b> , <b>Y. Lisunova</b> , N. Shevchenko, D. Shur, A. Dybovoi, A. Adeev, A. Kotko, and S. Zaginachenko<br><b>Electron emission from metal cathodes modified by carbon nanostructures</b>                        | 65 |
| P018 | <b>A.V. Pack</b> , N.G. Lebedev<br><b>Quantum mechanical model of atomic hydrogen adsorption on carbon nanotube surface</b>                                                                                                     | 66 |
| P019 | <b>A.M. Popov</b> , Y.E. Lozovik, E. Bichoutskaia, G.S. Ivanchenko, N.G. Lebedev, and E. Krivorotov<br><b>Electromechanical nanothermometer based on carbon nanotubes</b>                                                       | 67 |
| P020 | <b>I.V.Zaporotskova</b> , <b>E.V. Prokofyeva</b> , and N.P. Zaporotskova<br><b>MNDO-based investigation of capillary effect during penetration of elemental hydrogen into single-wall carbon nanotubes</b>                      | 68 |
| P021 | <b>V.A. Margulis</b> and <b>M.A. Pyataev</b><br><b>Electron transport in crossed nanotubes</b>                                                                                                                                  | 69 |
| P022 | <b>B.D. Shanina</b> , S.P. Kolesnik, V.G. Gavriljuk, Yu.N. Petrov, and V.P. Sokhatsky<br><b>Properties of iron nanowires encased in multiwalled carbon nanotubes</b>                                                            | 70 |
| P023 | <b>N.N. Yanushkina</b> , G.S. Ivanchenko, and N.G. Lebedev<br><b>The current-voltage characteristic of carbon nanotubes in non-linear model</b>                                                                                 | 71 |

## Physical Properties of Endohedral fullerenes and Peapods

|      |                                                                                                                                                                                              |    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| P024 | <b>A.D. Bozhko</b> , E.A. Kataeva, T.V. Ishchenko, M.L. Shupegin, and S.V. Demishev<br><b>Topological and quantum effects in electron transport in the metal-carbon nanocluster material</b> | 72 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|

|      |                                                                                                                                                                                                                                |    |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| P025 | <b>E.K. Alidzhanov</b> , Yu.D. Lantukh, S.N. Letuta, S.N. Pashkevitch, <b>O.A. Domachin</b> , I.E. Kareev, V.P. Bubnov, and E.B. Yagubskii<br><b>Formation of M@C<sub>2n</sub> (M = Gd, Ce) nanoparticles on mica surfaces</b> | 73 |
| P026 | <b>O. Kidun</b> , D.Bauer, J. Berakdar, and N. Fominykh<br><b>Double photoemission from the fullerene films:angular photoelectron distributions and continuum resonant states</b>                                              | 74 |
| P027 | <b>E. Shadilova</b> and K. Boyko.<br><b>Copolymers of ethylene and perfluorovinyl ethers with perfluoromethoxypropenyl radicals as a base of film-forming materials with a wide range of application</b>                       | 75 |
| P028 | <b>A.A. Pashkevich</b> , E.O. Popov, Z.Z. Latypov, and O.F. Pozdnyakov<br><b>High emission current from nanocarbon composite materials</b>                                                                                     | 76 |
| P029 | <b>N.A. Poklonski</b> , E.F. Kislyakov, O.N. Bubel', S.A. Vyrko, Nguyen Ngoc Hieu, Yu.E. Lozovik, and A.M. Popov<br><b>Molecular orbital calculations of C<sub>20</sub>@(8,8)</b>                                              | 77 |
| P030 | E.G. Gal'pern, <b>A.R. Sabirov</b> , and I.V. Stankevich<br><b>C<sub>60</sub> fullerenes as <math>\pi</math>-ligands in transition metals <math>\pi</math>-complexes</b>                                                       | 78 |
| P031 | D.V. Lopatin, <b>A.A. Samodurov</b> , R.A. Stolyarov, D.V. Konarev, and R.N. Lyubovskaya<br><b>Trapping centers of free charge carriers in the fullerene C<sub>60</sub> based molecular crystals</b>                           | 79 |

## Magnetic Properties and Superconductivity of Fullerenes

|      |                                                                                                                                                                                          |    |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| P032 | <b>S.S. Agafonov</b> , G.I. Borisov, I.F. Kokin, S.A. Lushnikov, N.N. Parshin, and V.A. Somenkov<br><b>Magnetic hydride of carbon</b>                                                    | 80 |
| P033 | <b>V.I. Berezkin</b> and V.V.Popov<br><b>Superconductivity in new fullerene composites</b>                                                                                               | 81 |
| P034 | <b>N.V. Bulina</b> , E.A. Grehova, G.A. Glushenko, L.A. Chekanova, E.A. Denisova and G.N. Churilov<br><b>Electro-magnetic properties of iron- and cobalt-fullerene clusters</b>          | 82 |
| P035 | <b>M. Gu</b> , Y. Yu, L. Zhang, X. Xu, S. Wang, and X. Xu<br><b>NMR study of ferromagnetic rhombohedral C<sub>60</sub> polymer</b>                                                       | 83 |
| P036 | <b>O.E. Kvyatkovskii</b> and I.B. Zakharova<br><b>Oxygen effect on magnetic properties of fullerenes</b>                                                                                 | 84 |
| P037 | <b>B. Ayan</b> , N.D.Khan, A. Momburu, H. Pardo, R. Faccio, and T. Makarova<br><b>Study of metallic clusters in carbon nanofoam</b>                                                      | 85 |
| P038 | <b>A.V. Prikhodko</b> , O.I. Konkov, and I.D. Mishin<br><b>The superconductivity, electrical instabilities and statistical measurements in Cu<sub>6</sub>C<sub>60</sub> polycrystals</b> | 86 |

## Synthesis and Chemical Properties of fullerene Derivatives

|      |                                                                                                                                                                                                                                                                |    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| P039 | <b>V.E. Aleshina</b> , A.Ya. Borshchevskii, N.I. Gruzinskaya, and M.M. Kuznetsov, N.S. Buyaev and E.V. Skokan<br><b>A mass spectrometric study of the vaporization and the heats of sublimation of trifluoromethylated [60]fullerene compounds</b>             | 87 |
| P040 | <b>V.D. Blank</b> , E.V. Polyakov, <b>D.V. Batov</b> , B.A. Kulnitskiy, V.N. Denisov, and A.N. Kirichenko<br><b>Annealing of CN, nanotubes and nanofibers</b>                                                                                                  | 88 |
| P041 | <b>V.P. Belousov</b> , <b>I.M. Belousova</b> , V.M. Kiselev, I.M. Kislyakov, A.N. Ponomarev, E.A. Katz, E. Mogilko, J. Grinblat, and A.I. Shames<br><b>Structure and optical properties of astralens</b>                                                       | 89 |
| P042 | <b>O. I. Koifman</b> , S. V. Blokhina, <b>N. Yu. Borovkov</b> , L. A. Valkova, V. E. Maizlish<br><b>Physicochemical Compatibility of fullerene C<sub>60</sub> with tetrakis(4-Amino-5-Phenoxy)Phthalocyanine</b>                                               | 90 |
| P043 | <b>R.G. Bulgakov</b> , Yu.G. Ponomareva, <b>D.I. Galimov</b> , and S.D. Razumovsky<br><b>The stable products of the C<sub>70</sub> fullerene reaction with ozone in solution</b>                                                                               | 91 |
| P044 | <b>N.I.Alekseyev</b> , O.S. Alechin, A.A. Blokhin, V.I. Gerasimov, G.V.Kalinin, V.A. Keskinov, V.V.Leshuk, Ju.V.Murashkin, K.V.Nekrasov, A.K.Pjartman, and <b>N.A. Charykov</b><br><b>Industrial complex for the production of light- and heavy fullerenes</b> | 92 |
| P045 | <b>I.V. Davydov</b> , A.I. Podlivaev, and L.A. Openov<br><b>Stability of linear (C<sub>20</sub>)<sub>n</sub> complexes of the smallest fullerenes C<sub>20</sub></b>                                                                                           | 93 |

|      |                                                                                                                                                                                                                                                                                                                                                                         |     |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P046 | <b>V.Ya. Davydov</b> , N.V. Chelovskaya, V.L. Karnatsevich, L.D. Rasnetsov, E.V. Skokan, and V.P. Tarasov<br><b>Synthesis of fullereneols in preparative scale</b>                                                                                                                                                                                                      | 94  |
| P047 | <b>E.I. Drozdova</b> , O.P. Chernogorova, O.A. Bannykh, and V.M. Blinov<br><b>Effect of the composition of initial fullerites on the structure and properties of nanocrystalline carbon phase formed in metallic matrix under pressure</b>                                                                                                                              | 95  |
| P048 | <b>L.V. Dubrovina</b> , O.V. Naboka, L.S. Volkovynska, V.M. Ogenko, and S.V. Volkov<br><b>Method of sublimation and self-assembly for fullerenes separation</b>                                                                                                                                                                                                         | 96  |
| P049 | <b>A.V. Egorov</b> , P.S. Samokhvalov, E.V. Skokan, V.P. Tarasov, I.V. Arkhangel'skii, Yu.B. Muravlev, and N.V. Chelovskaya<br><b>Synthesis and properties of sodium fullerides</b>                                                                                                                                                                                     | 97  |
| P050 | <b>N. N. Galtsov</b> , A. I. Prokhvatilov, D.Cassidy, G. E. Gadd, S. Moricca, B. Sundqvist, and N.A. Aksenova<br><b>Intercalation of C<sub>60</sub> with N<sub>2</sub> molecules. X-ray data</b>                                                                                                                                                                        | 98  |
| P051 | <b>B. Ghanbari</b> , Z. Taheri, F. HajiAliAkbari, A.A. Khalili, B. Mohajerani, and M. Soleymani Jamarani<br><b>Spectroscopic Evidence for the Reaction of C<sub>60</sub> with side-chain groups in Alkylbenzenes</b>                                                                                                                                                    | 99  |
| P052 | <b>E.V. Ovsyannikova</b> , A.N. Lapshin, V.I. Zolotarevsky, A.M. Kolesnikova, N.F. Goldshleger, and N.M. Alpatova<br><b>Supramolecular approach to modification of surfaces – formation of coatings based on fullerene derivatives</b>                                                                                                                                  | 100 |
| P053 | <b>E.A. Gorina</b> , S.N. Titova, L.V. Kalakutskaya, G.A. Domrachev, S.Yu. Ketkov, A.M. Ob'edkov, T.I. Lopatina, M.A. Lopatin, O.V. Kuznetsova, and A.S. Shavirin<br><b>Investigation of physical properties and reactivity of Li<sub>12</sub>C<sub>60</sub></b>                                                                                                        | 101 |
| P054 | <b>A.A. Goryunkov</b> , S.M. Avdoshenko, I.N. Ioffe, and L.N. Sidorov<br><b>Theoretical study of the poly(trifluoromethyl)fullerenes</b>                                                                                                                                                                                                                                | 102 |
| P055 | <b>I.N. Ioffe</b> and S.M. Avdoshenko<br><b>Theoretical study of isomerization of fullerene derivatives via transfer and substitution of addends</b>                                                                                                                                                                                                                    | 103 |
| P056 | <b>V.A. Ioutsi</b> , N.S. Ovchinnikova, and M.A. Yurovskaya<br><b>Modified Prato reaction for synthesis of 2,5-substituted NH-fulleropyrrolidines</b>                                                                                                                                                                                                                   | 104 |
| P057 | <b>V.G. Isakova</b> , E.A. Goncharova, E.A. Petrakovskay, N.V. Bulina, G.A. Glushenko and G.N. Churilov<br><b>Metallic Fe and Co nanoparticles in powder mixtures with fullerene-containing materials</b>                                                                                                                                                               | 105 |
| P058 | <b>P.A. Khavrel</b> , I.N. Ioffe, S.M. Avdoshenko, S.G. Sakharov, and L.N. Sidorov<br><b>NMR investigations of several trifluoromethylated [70]fullerenes</b>                                                                                                                                                                                                           | 106 |
| P059 | <b>P.A. Khavrel</b> , A.A. Kozlov, A.S. Pimenova, S.M. Avdoshenko, I.N. Ioffe, and L.N. Sidorov<br><b><sup>19</sup>F and <sup>13</sup>C NMR studies and DFT calculations of C<sub>60</sub>(CF<sub>2</sub>)<sub>n</sub> (n=1, 2) and their Bingel monoadducts</b>                                                                                                        | 107 |
| P060 | <b>W.B. Ko</b> , B.E. Park, Y.M. Lee, and S.H. Hwang<br><b>Synthesis of fullerene[C<sub>60</sub>]-gold nanoparticle by non-ionic surfactants; polysorbate80, Brij97</b>                                                                                                                                                                                                 | 108 |
| P061 | <b>S. Yoon</b> , S.H. Hwang, and <b>W.B. Ko</b><br><b>Synthesis of various 2'-azidoethyl per-O-acetyl glycosides to fullerene[C<sub>70</sub>] under ultrasonication</b>                                                                                                                                                                                                 | 109 |
| P062 | <b>D.V. Konarev</b> , S.S. Khasanov, D.V. Lopatin, V.V. Rodaev, G. Saito, and R.N. Lyubovskaya<br><b>Supramolecular approach to the synthesis of [60]fullerene - metal dithiocarbamate complexes, {(M<sup>II</sup>(R<sub>2</sub>dte)<sub>2</sub>)-L}-C<sub>60</sub> (M= Zn, Cd, Hg, Fe and Mn; x = 1 and 2). the study of magnetic properties and photoconductivity</b> | 110 |
| P063 | <b>A.B. Kornev</b> , P.A. Troshin, A.S. Peregudov, and R.N. Lyubovskaya<br><b>Unexpected formation of pyrrolinofullerenes in the acid-catalyzed [2+3]cycloaddition reactions of [60]fullerene with imines</b>                                                                                                                                                           | 111 |
| P064 | <b>A.A. Kozlov</b> , A.A. Goryunkov, S.M. Avdoshenko, A.S. Pimenova, and I.N. Ioffe<br><b>Theoretical research of poly-[2+1]-cycloaddition to C<sub>60</sub>CF<sub>2</sub></b>                                                                                                                                                                                          | 112 |
| P065 | <b>A.A. Kozlov</b> , A.A. Goryunkov, S.M. Avdoshenko, A.S. Pimenova, I.N. Ioffe, and V.A. Vorobiev<br><b>Crystalline solvates of fullerene C<sub>60</sub> with individual and mixed solvents</b>                                                                                                                                                                        | 113 |
| P066 | <b>O.E. Kvyatkovskii</b> , E.G. Donenko, and I.B. Zakharova<br><b>Electronic structure and optical properties of charge-transfer fullerene-porphyrin complexes: ab initio calculations</b>                                                                                                                                                                              | 114 |
| P067 | <b>T.V. Tropin</b> , V.L. Aksenov, <b>O.A. Kyzyma</b> , L.A. Bulavin, M.V. Avdeev, M.V. Korobov, and L. Rosta<br><b>Aggregation in C<sub>60</sub>/NMP, C<sub>60</sub>/NMP/water and C<sub>60</sub>/NMP/toluene mixtures by UV-Vis spectroscopy and SANS</b>                                                                                                             | 115 |

|      |                                                                                                                                                                                                                                                                                                                                              |     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P068 | <b>V.I. Lad'yanov</b> , V.V. Aksyonova, and R.M. Nikonova.<br><b>Oxidation and polymerization of fullerenes C<sub>60</sub>, C<sub>70</sub> and C<sub>60</sub>/C<sub>70</sub> mixtures</b>                                                                                                                                                    | 116 |
| P069 | <b>I. Lijanova</b> , E. Klimova, T. Klimova, and G.M. Martinez<br><b>Supramolecular complexes of oligophenylvinyl resorcinarene-dendrimers and fullerene C<sub>60</sub></b>                                                                                                                                                                  | 117 |
| P070 | <b>A.L. Litvinov</b> , D.V. Konarev, A.Yu. Kovalevsky, and R.N. Lyubovskaya<br><b>Synthesis and crystal structure of new molecular complex of C<sub>60</sub> with [Re(CO)<sub>3</sub>Cl(DEAS-BP<sub>y</sub>)]<sub>2</sub>: C<sub>60</sub>[Re(CO)<sub>3</sub>Cl(DEAS-BP<sub>y</sub>)]<sub>2</sub>C<sub>6</sub>H<sub>4</sub>C<sub>12</sub></b> | 118 |
| P071 | <b>M.A.Lopatin</b> , A.N.Egorochkin, O.V.Novikova, and M.P.Shurygina<br><b>Charge transfer complexes of fullerene C<sub>60</sub> with N,N-dimethylaniline derivatives</b>                                                                                                                                                                    | 119 |
| P072 | <b>Yu.I. Lyakhovetsky</b> , E.A. Shilova, S.A. Glazun, and Yu.S. Nekrasov<br><b>Homolytic reactive mass spectrometry of fullerenes: interaction of C<sub>60</sub> with radical generating compounds from different classes in the EI ion source of a mass spectrometer</b>                                                                   | 120 |
| P073 | <b>G.V. Markin</b> , Yu.A. Shevelev, M.A. Lopatin, and G.A. Domrachev<br><b>(Fullerene)(Cyclopentadienyl)dicarbonylmanganese</b>                                                                                                                                                                                                             | 121 |
| P074 | <b>G.V. Markin</b> , Yu.A. Shevelev, M.A. Lopatin, V.K. Cherkasov, V.A. Kuropatov, S.Yu. Ketkov, and G.A. Domrachev<br><b>Bis(arene)vanadium(I) fullerides</b>                                                                                                                                                                               | 122 |
| P075 | <b>K.L. Nodov</b> , G.M. Fazleeva, V.P. Gubskaya, and I.A. Nuretdinov,<br><b>Bis- and tris- thiophosphorylated aldehydes and synthesis of new fulleropyrrolidines C<sub>60</sub></b>                                                                                                                                                         | 123 |
| P076 | <b>A.V. Usatov</b> , E.V. Martynova, F.M. Dolgushin, and <b>Yu.N. Novikov</b><br><b>Synthesis and structure of the complexes of osmium with fullerene C<sub>70</sub></b>                                                                                                                                                                     | 124 |
| P077 | <b>V.P. Gubskaya</b> , L.Sh. Berezhnaya, A.T. Gubaidullin, and <b>I.A. Nuretdinov</b> ,<br><b>New nitroxide methanofullerenes C<sub>60</sub> and C<sub>70</sub>-Synthesis and properties</b>                                                                                                                                                 | 125 |
| P078 | <b>N.A. Omelyanyuk</b> , E.I. Dorozhkin, L.N. Sidorov, and S.I. Troyanov<br><b>Molecular transformations in higher trifluoromethylated [60]fullerenes</b>                                                                                                                                                                                    | 126 |
| P079 | <b>N.S. Ovchinnikova</b> , D.V. Ignat'eva, N.B. Tamm, A.A. Goryunkov, S.I. Troyanov and M. A. Yurovskaya<br><b>Selective synthesis and crystal structure of the C<sub>70</sub>(CF<sub>3</sub>)<sub>10</sub>[C(COOEt)<sub>2</sub>] Bingel monoadduct</b>                                                                                      | 127 |
| P080 | <b>A.S. Pimenova</b> , A.A. Kozlov, P.A. Khavrel, and A.A. Goryunkov<br><b>Diffuoromethylene[60]fullerenes: synthesis, structure and properties</b>                                                                                                                                                                                          | 128 |
| P081 | <b>I.P. Romanova</b> , G.G. Yusupova, O.A. Larionova, and O.G. Sinyashin<br><b>Scheme of the fullerenoaziridines and azahomofullerenes formation</b>                                                                                                                                                                                         | 129 |
| P082 | <b>I.P. Romanova</b> , G.G. Yusupova, A.A. Balandina, Sh.K. Latypov, D.G. Yakhvarov, and O.G. Sinyashin<br><b>Electron acceptor phosphorylated fullerene containing materials for flexible organic photovoltaic cells</b>                                                                                                                    | 130 |
| P083 | <b>G. Rotas</b> and N. Tagmatarchis<br><b>Tether-directed bis-adducts vs dimers of [60]fullerene with triphenylamine</b>                                                                                                                                                                                                                     | 131 |
| P084 | <b>V.A. Ruchenin</b> , A.V. Markin, N.N. Smirnova, S.N. Titova, and G.A. Domrachev<br><b>The thermodynamics properties of the dimeric derivatives of C<sub>60</sub> fullerene with elementorganic ligands</b>                                                                                                                                | 132 |
| P085 | <b>A.D. Rud</b> , A.E. Perekos, L.I. Ivaschuk, T.V. Efimova, V.A. Melnikova, and N.I. Kuskova<br><b>Structure state and magnetic properties of CNM produced by the exploding wires technique</b>                                                                                                                                             | 133 |
| P086 | <b>D.Sh. Sabirov</b> , S.L. Khursan, and R.G. Bulgakov<br><b>Addition of ozone to C<sub>60</sub> fullerene: a DFT study</b>                                                                                                                                                                                                                  | 134 |
| P087 | <b>M.S.Salakhov</b> , B.T. Bagmanov, and N.F.Dzhavadov<br><b>Continuous technology of preparation of fullerenes and atomic clusters on reaction of chlorinolysis</b>                                                                                                                                                                         | 135 |
| P088 | <b>V.V. Samonin</b> , V.U. Nikonova, and M.L. Podvyaznikov<br><b>Modification of carbon adsorbents by fullerenes</b>                                                                                                                                                                                                                         | 136 |
| P089 | <b>V.M. Mikoushkin</b> , V.V. <b>Shnitov</b> , V.V. Bryzgalov, Yu.S.Gordeev, O.V.Boltalina I.V.Goldt, S.L. Molodtsov, and D.V. Vyalikh<br><b>Electronic structure of fluorinated fullerenes C<sub>60</sub>F<sub>18</sub> and C<sub>60</sub>F<sub>36</sub> studied by photoelectron- and absorbtion spectroscopies</b>                        | 137 |
| P090 | <b>Y.M.Shulga</b> , V.M.Martynenko, S.A.Baskakov, V.V.Openko, G.V.Shilov, T.N.Fursova, A.V.Bazhenov, A.F.Shestakov, and Y.G.Morozov<br><b>Producing and properties of fullerite C<sub>60</sub> intercalated with freon 32.</b>                                                                                                               | 138 |

## Poster Session II

### Synthesis and Chemical Properties of Fullerene Derivatives (continuation)

|      |                                                                                                                                                                                                                                                                                                                                                                                                |     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P091 | <b>Y.M.Shulga, A.V.Kulikov, V.M.Martynenko, and V.V.Openko</b><br>Influence of vacuum annealing on concentration of radicals in fullerite, intercalated with molecular oxygen, (O <sub>2</sub> ) <sub>x</sub> C <sub>60</sub>                                                                                                                                                                  | 140 |
| P092 | <b>V.V. Bashilov, F.M. Dolgushin, P.V. Petrovskii, K.K. Babievsky, and V.I. Sokolov</b><br>Synthesis, structure and optical properties of the chiral metal-fullerene C <sub>60</sub> and C <sub>70</sub> complexes with the optically active ligand (-)-BITANP                                                                                                                                 | 141 |
| P093 | <b>I.M. Starchenko</b><br>New superhard materials on the basis of nanocrystal forms of carbon                                                                                                                                                                                                                                                                                                  | 142 |
| P094 | <b>A.V. Talyzin, A. Dzwilewski, and M. Pudelko</b><br>Interaction of palladium with C <sub>60</sub> : polymerization and nanoparticles                                                                                                                                                                                                                                                         | 143 |
| P095 | <b>T.V. Tropin, M.V. Aydeev, and V.L. Aksenov</b><br>Small-angle neutron scattering study of C <sub>60</sub> /CS <sub>2</sub> solutions                                                                                                                                                                                                                                                        | 144 |
| P096 | <b>O.A. Troshina, P.A. Troshin, A.S. Peregudov, and R.N. Lyubovskaya</b><br>The first fully regio- and stereoselective [2+3]cycloadditions of azomethine ylides to [70]fullerene                                                                                                                                                                                                               | 145 |
| P097 | <b>O.A. Troshina, P.A. Troshin, A.S. Peregudov, and R.N. Lyubovskaya</b><br>Facile derivatization of C <sub>60</sub> in Pb(OAc) <sub>4</sub> -promoted reactions                                                                                                                                                                                                                               | 146 |
| P098 | <b>O.A. Troshina, P.A. Troshin, A.S. Peregudov, and R.N. Lyubovskaya</b><br>Isolation and characterisation of C <sub>70</sub> [NR <sub>2</sub> ] <sub>2</sub> O: the first C <sub>70</sub> intramolecular ethers bearing two amine groups                                                                                                                                                      | 147 |
| P099 | <b>R.G. Gasanov, M.V. Tsikalova, E.V. Martynova, and Yu.N. Novikov</b><br>Influence of the metalfragment on the regioselectivity for addition of the radicals CCl <sub>3</sub> and But to C <sub>60</sub> Ir(CO)H(PPh <sub>3</sub> ) <sub>2</sub> , C <sub>60</sub> Ir(CO)H[(+)-DIOP], C <sub>60</sub> Os(CO)(PPh <sub>3</sub> ) <sub>2</sub> (CNBut) and on the stability of the spin-adducts | 148 |
| P100 | <b>U.M. Dzhemilev, A.R. Tuktarov, A.R. Akhmetov, M. Pudas, and A.G. Ibragimov</b><br>Catalytic methods for selective functionalization of [60]fullerene                                                                                                                                                                                                                                        | 149 |
| P101 | <b>G.S. Veryasov, V.A. Ioutsii, A.V. Kepman, N.S. Chilingarov, and L.N. Sidorov</b><br>The search of new routs of C <sub>60</sub> F <sub>18</sub> fluoride formation                                                                                                                                                                                                                           | 150 |

### Phase Transitions in Fullerenes

|      |                                                                                                                                                                                                                      |     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P102 | <b>V.A. Davydov, A.V. Rakhmanina, S. Rols, V. Agafonov, M.X. Pulikkathara, R.L. Vander Wal, and V.N. Khabashesku</b><br>Size-dependent phase transition of diamond to graphite under high pressures and temperatures | 151 |
| P103 | <b>M.V. Kondrin, V.V. Brazhkin, A.G. Lyapin, and S.V. Popova</b><br>Electrotransport properties of novel polymerized phases of C <sub>60</sub>                                                                       | 152 |
| P104 | <b>V.V. Milyavskiy, T.I. Borodina, S.N. Sokolov, and A.Yu. Basharin</b><br>Shock-induced phase transitions of C <sub>70</sub> fullerite                                                                              | 153 |
| P105 | <b>N.B. Tamm, S.M. Avdoshenko, E. Kemnitz, and S.I. Troyanov</b><br>New pentafluoroethyl derivatives of [60]fullerene, three isomers of C <sub>60</sub> (C <sub>2</sub> F <sub>5</sub> ) <sub>10</sub>               | 154 |
| P106 | <b>O.F. Yagafarov, E.L. Gromnitskaya, A.G. Lyapin, V.V. Brazhkin, and M.V. Kondrin</b><br>Ultrasonic study of fullerite C <sub>60</sub> under pressure                                                               | 155 |

### Photoelectric and Optic Properties of Fullerenes

|      |                                                                                                                                                                                                               |     |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P107 | <b>E. K. Alidzhanov, Yu. D. Lantukh, S. N. Letuta, S. N. Pashkevitch, O.A.Domachin, I.E. Kareev, V.P. Bubnov, and E.B. Yagubskii</b><br>M@C <sub>2n</sub> N, N-dimethylformamide solutions optical properties | 156 |
| P108 | <b>S.N. Bokova, E.D. Obratsova, A. Kukovecz, M. Smolik, and H. Kuzmany</b><br>Raman study of diameter-dependent resonance effects and "metallic window" for different types of single-wall carbon nanotubes   | 157 |
| P109 | <b>B. Laskowska, B. Barszcz, A. Bogucki, A.Graja, and R.M. Ion</b><br>Spectral investigations of fullerene-porphyrin complexes and adducts                                                                    | 158 |
| P110 | <b>A.K. Belyaev, V.K. Ivanov, R.G. Polozkov, A.S. Tiukanov, A.I. Toropkin, A.V. Solov'yov, and W. Greiner</b><br>Plasmon resonances in fullerene ions                                                         | 159 |

|      |                                                                                                                                                                                                                                                                    |     |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P111 | <b>N. V. Kamanina and E. F. Sheka</b><br>Photophysics and quantum chemical simulation of organic conjugated structures doped with nanobobjects: effect of the charge transfer complex formation                                                                    | 160 |
| P112 | <b>N.V. Kamanina, E.F. Sheka, L.A.Chernozatonskii, A.I. Vangonen, P.Ya. Vasilyev, and Yu.M. Voronin</b><br>Photophysics and quantum chemical simulation of organic conjugated structures doped with nanobobjects: structures and interface conditions              | 161 |
| P113 | <b>N.S. Komarova and A.G. Krivenko</b><br>Injection of electrons from different nanocarbon electrodes at the moderate cathodic potentials                                                                                                                          | 162 |
| P114 | <b>O. Kysil, I. Sporysh, E. Buzaneva, U. Ritter, and P. Scharff</b><br>Spectroscopic testing of nanocarbon fluids as molecular photoprobes for DNA molecules                                                                                                       | 163 |
| P115 | <b>O.P. Dmytrenko, N.P. Kulish, L.A. Komarova, S.V. Lizunova, N.M. Belyi, Yu.E. Grabovskiy, V.A. Gubanov, L.A. Bulavin, Yu.I. Prylutskiy, L. Valkunas</b><br>Raman scattering of multi-walled carbon nanotubes with the structural defects                         | 164 |
| P116 | <b>D.V. Lopatin, V.V. Rodaev, D.V. Konarev, and R.N. Lyubovskaya</b><br>Spin-dependent stages of free charge carriers photogeneration in molecular complexes of fullerene C <sub>60</sub> with organometallic donors                                               | 165 |
| P117 | <b>K.P. Meletov, I.O. Bashkin, V.V. Shestakov, I.I. Tartakovskii, A.A. Maksimov, J. Arvanitidis, D. Christofilos, and G.A. Kourouklis</b><br>Comparative Raman study of the C <sub>60</sub> H <sub>36</sub> and C <sub>60</sub> H <sub>60</sub> fullerene hydrides | 166 |
| P118 | <b>K.H. Michel, B. Verberck, M. Hulman, H. Kuzmany, and M. Krause</b><br>Superposition of quantum and classical rotational motions in Sc <sub>2</sub> C <sub>2</sub> @C <sub>84</sub>                                                                              | 167 |
| P119 | <b>D.S. Martynov, V.V. Bruevich, E.M. Nechvolodova, and Yu.N. Novikov, M.V. Tsikalova, and D.Yu. Parashuk</b><br>Oligomers (Pt <sub>0.75</sub> C <sub>60</sub> ) <sub>n</sub> as the electron acceptor in polymer solar cells                                      | 168 |
| P120 | <b>O.P. Dmytrenko, N.P. Kulish, E.L. Pavlenko, N.M. Belyi, Yu.I. Prylutskiy, U. Ritter, P. Scharff</b><br>Optical properties of the C <sub>60</sub> and C <sub>70</sub> fullerene films, alloyed by oxygen with the annealing                                      | 169 |
| P121 | <b>B.S. Razbirin, E.F. Sheka, E.A. Nikitina, A.N. Starukhin, D.K. Nelson, M.Yu. Degunov, P.A. Troshin, and R.N. Lyubovskaya</b><br>Spectral evidence of low symmetry of C <sub>60</sub> fullerene and its derivatives                                              | 170 |
| P122 | <b>V.V. Shnitov, V.M. Mikoushkin, and Yu.S. Gordeev,</b><br>The role of ion cascades in amorphization of fullerite C <sub>60</sub> by Ar <sup>+</sup> ions and in forming the image of ion nano-probe                                                              | 171 |
| P123 | <b>D.M. Spoiala</b><br>Electrical properties and photovoltaic effect in n-Si/fullerite C <sub>60</sub> and n-Si/nanocomposite C <sub>60</sub> :Cu heterostructures                                                                                                 | 172 |
| P124 | <b>N.Yu. Suchkova and A.A. Dmitrievskii</b><br>Dynamics of clusters radiating defects generation in silicon                                                                                                                                                        | 173 |
| P125 | <b>I.V. Bagrov, I.M. Belousova, O.B. Danilov, A.V. Ermakov, A.S. Grenishin, V.M. Kiselev, I.M. Kislyakov, T.D. Murav'eva, E.N. Sosnov, and D.A. Videnichev</b><br>Singlet oxygen generation processes in solutions of fullerenes in carbon tetrachloride           | 174 |
| P126 | <b>I.B. Zakharova, E.A. Donenko, Yu.F. Biryulin, and L.V. Sharonova</b><br>Optical and photoelectrical properties of fullerene-Zn(II)tetraphenylporphyrin complex                                                                                                  | 175 |
| P127 | <b>I.V.Legchenkova, N.B.Silaeva, Yu.E.Stetsenko, K.A.Yagotintsev, P.V.Zinoviev, and V.N.Zoryansky</b><br>Photoluminescence and structure of fullerite C <sub>60</sub> intercalated with hydrogen                                                                   | 176 |

### Fullerene Containing Polymers

|      |                                                                                                                                                                                                                                                                      |     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P128 | <b>I.V. Zaporotskova and O.A. Davletova</b><br>Oxidation of pyrolyzed polyacrylonitrile carbon nanostructures                                                                                                                                                        | 177 |
| P129 | <b>O.P. Dmytrenko, N.P. Kulish, L.V. Diyakon, N.M. Belyi, L.A. Bulavin, Yu.I. Prylutskiy, Yu.I. Sementsov, N.A. Gavrylyuk, and V.V. Shlapatskaya</b><br>Structure and vibrational spectra of multi-walled carbon nanotubes with the polypropylene during irradiation | 178 |
| P130 | <b>O.P. Dmytrenko, N.P.Kulish, E.S. Kobus, N.M.Belyi, M.A. Zabolotnyi, Yu.I. Prylutskiy, D.A. Gryn'ko, and V.V. Shlapatskaya</b><br>Phosphorescence of the $\beta$ -conjugated polymers with complex forming C <sub>60</sub> fullerenes during irradiation           | 179 |

|      |                                                                                                                                                                                                                                                                          |     |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P131 | Yu. Biryulin, <b>D. Kurdybaylo</b> , V. Shamanin, G. Aleksjuk, E. Terukov, N. Zaitseva, V. Negrov, A. Tkatchyov, I. Saydashev, and T. Makarova<br><b>Strongly non-linear carbon nanofibre influence on morphological and electrical properties of polymer composites</b> | 180 |
| P132 | Yu. Biryulin, <b>D. Kurdybaylo</b> , T. Volkova, L. Sharonova, V. Shamanin, E. Terukov, G. Aleksjuk, A. Prikhod'ko, V. Negrov, and A. Tkatchyov<br><b>Microwave and optical absorption of composite layers of carbon nanofibres in dielectric polymer matrix</b>         | 181 |
| P133 | Yu. Biryulin, <b>T. Volkova</b> , E. Melenevskaya, V. Shamanin, E. Terukov, D. Kurdybaylo, V. Negrov, and A. Tkatchyov<br><b>Electrical properties of polypyrrol composites polymerised in presence of carbon nanofibres</b>                                             | 182 |
| P134 | O.V. Alekseeva, <b>S. M. Kuzmin</b> , N.A. Bagrovskaya, and N.Yu. Borovkov<br><b>Structure and thermodynamic property investigations Rf fullerene doped polystyrene films</b>                                                                                            | 183 |
| P135 | <b>Z.Z. Latypov</b> , O.F. Pozdnyakov, and L.N. Gall<br><b>Aligned carbon multiwalled nanotubes - polymer composites</b>                                                                                                                                                 | 184 |
| P136 | E.V. Chubarova and <b>E.Yu. Melenevskaya</b><br><b>Degradation mechanism of polymer chains in C<sub>60</sub> fullerene-polymer composites</b>                                                                                                                            | 185 |
| P137 | E.V. Chubarova and <b>E.Yu. Melenevskaya</b><br><b>Analysis of interactions in fullerene-solvent-polymer system by UV-spectroscopy</b>                                                                                                                                   | 186 |
| P138 | L.V. Vinogradova, <b>O.V. Ratnikova</b> , G.A. Polotskaya, A.A. Shevtsova, and A.Yu. Alentiev<br><b>Membranes based on star C<sub>60</sub>-containing polystyrenes for effective gas separation</b>                                                                      | 187 |
| P139 | <b>O.V. Ratnikova</b> , P.N. Lavrenko, and L.V. Vinogradova<br><b>Structure and hydrodynamical properties of heteroarm C<sub>60</sub> fullerene-containing polymers</b>                                                                                                  | 188 |
| P140 | E.V. Tarasova, <b>O. Romanova</b> , V.O. Aseyev, H.J. Tenhu, L.V. Vinogradova, V.N. Zgonnik, and A.P. Filippov<br><b>Properties of star-shaped polymers with fullerene core in solutions</b>                                                                             | 189 |
| P141 | <b>A.P. Voznyakovsky</b> , M.F. Kudoyarov, L.B. Piotrovsky, M.Yu. Eropkin<br><b>Self-assembly of fullerene molecules in thin polymer films. Some practical applications</b>                                                                                              | 190 |
| P142 | N. Yevlampieva, P. Khliabich, L. Vinogradova, P. Lavrenko, and E. Rjuntsev<br><b>Charge-separation effect on dielectric and electrooptical properties of 6-arm polystyrene stars with fullerene core in solutions</b>                                                    | 191 |
| P143 | N. Yevlampieva, and R. Deschenaux<br><b>[60]fullerene-containing liquid-crystalline codendrimers : synthesis, characterisation and applications</b>                                                                                                                      | 192 |

### *Synthesis and Properties of Carbon Onions and Nanodiamonds*

|      |                                                                                                                                                                                                                                                                                   |     |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P144 | <b>A.V. Arkhipov</b> , S.K. Gordeev, S.B. Korchagina, G.G. Sominski, and A.A. Uvarov<br><b>Emission properties of a nanodiamond composite</b>                                                                                                                                     | 193 |
| P145 | <b>A. Yu. Basharin</b> and M.A. Turchaninov<br><b>On the liquid carbon cluster structure</b>                                                                                                                                                                                      | 194 |
| P146 | <b>V.Ya. Davydov</b> , and E.V. Kalashnikova<br><b>Adsorption of light hydrocarbons by single - wall carbon nanohorns</b>                                                                                                                                                         | 195 |
| P147 | S.V. Kidalov, <b>F.M. Shakhov</b> , V.M. Davidenko, V.A. Yashin, I.E. Bogomazov, A.Ya. Vul'<br><b>Effects of modification of graphite by fullerenes, natural micron size diamonds and nanodiamonds at high-pressure high temperature synthesis of diamond</b>                     | 196 |
| P148 | S.V. Kidalov, <b>F.M. Shakhov</b> , and A.Ya. Vul'<br><b>Nanocomposites based on diamonds and nanodiamonds with fullerenes</b>                                                                                                                                                    | 197 |
| P149 | E.G. Gal'pern, A.R. Sabirov, and <b>I.V. Stankevich</b><br><b>Derivatives C<sub>21</sub>H<sub>12</sub>R<sub>6</sub> of sumanene C<sub>21</sub>H<sub>12</sub> as bowl-shaped precursors of derivatives R<sub>6</sub>C<sub>60</sub> fullerene C<sub>60</sub> (R= - ,H, Hal, CN)</b> | 198 |
| P150 | S.G. Yastrebov and <b>V.I. Ivanov-Omskii</b><br><b>Structure of the most intensive Bragg's reflex of carbon onions</b>                                                                                                                                                            | 199 |
| P151 | S.G. Yastrebov and <b>V.I. Ivanov-Omskii</b><br><b>Size-distribution function of ultradisperse diamonds</b>                                                                                                                                                                       | 200 |

### *New Approaches for Mass Production Carbon [Nanotubes*

|      |                                                                                                                                                                                                                            |     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P152 | <b>N.R. Arutyunyan</b> , V.V. Grebenyukov, E.D. Obraztsova, A.S. Pozharov, E.P. Kharitonova, P. Jaffrenou, B. Attal-Tretou, and A. Loiseau<br><b>Complex study of single-wall nanotubes synthesized from C:BN mixtures</b> | 201 |
| P153 | <b>I.I. Bobrinetskii</b> , V.K. Nevolin, M.M. Simunin, and S.V. Khartov<br><b>Carbon nanotube chemical ethanol vapour growth methods for application in electronics and nanomechanics</b>                                  | 202 |
| P154 | <b>V.V. Grebenyukov</b> , E.D. Obraztsova, A.S. Pozharov, N.R. Arutyunyan, A.A. Romeikov, and I.A. Kozyrev<br><b>Arc-synthesis of single-walled carbon nanotubes in nitrogen atmosphere</b>                                | 203 |
| P155 | J.A. Gonzalez Guevara, and <b>O.V. Kharissova</b><br><b>Fe-filled carbon nanotubes produced by microwaves</b>                                                                                                              | 204 |
| P156 | <b>O.V. Kharissova</b> , M. Osorio, and M. Garza<br><b>Synthesis of Bismuth nanotubes by microwave irradiation</b>                                                                                                         | 205 |
| P157 | <b>N.I. Kuskova</b> , A.D. Rud, L.Z. Boguslavskii, A.E. Perekos, V.N. Uvarov, and L.I. Ivaschuk<br><b>New electroexplosion methods for syntheses of nanocarbon</b>                                                         | 206 |
| P158 | <b>I.A. Maslov</b> , A.R. Karaeva, A.Yu. Krylova, and V.Z. Mordkovich<br><b>Catalytic growth of nanotubes over carbon felt</b>                                                                                             | 207 |
| P159 | O.K. Krasilnikova, <b>A.C. Pogosian</b> , A.N. Khodan, N.V. Serebryakova, and A.M. Voloshchuk<br><b>Formation of carbon nanotubes systems by using an monolytic foam porous aluminum oxide as template</b>                 | 208 |
| P160 | <b>D.V. Smovzh</b> , V.A. Maltsev, and O.A. Nerushev<br><b>SWCNT synthesis in rarefied gas and plasma flows</b>                                                                                                            | 209 |
| P161 | <b>D.V. Smovzh</b> , V.A. Maltsev, S.A. Novopashin, and O.A. Nerushev<br><b>Carbon nanofibers and MWNTs formation on stainless steel at atmospheric pressure</b>                                                           | 210 |
| P162 | <b>K. Filippov</b> and V.N. Pak<br><b>Plasmas treatment as a tool of carbon nanotubes adsorption capacity increase</b>                                                                                                     | 211 |

### *Poster Session III*

#### *Biological and Medical Aspects of carbon Clusters*

|      |                                                                                                                                                                                                                                                                              |     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P163 | I. Andreev, A. Petrukhnina, A. Garmanova, V. Romanova, P. Troshin, O. Troshinà, L. DuBuske, and <b>S. Andreev</b><br><b>Water-soluble modifications of fullerene C<sub>60</sub> easy penetrate through cellular membranes</b>                                                | 214 |
| P164 | <b>G. Andrievsky</b> , L. Derevyanchenko, and V. Klochkov<br><b>The myth about toxicity of pure fullerenes is irreversibly destroyed</b>                                                                                                                                     | 215 |
| P165 | <b>A. Garmanova</b> , A. Petrukhnina, E. Milko, V. Romanova <sup>a</sup> , A. Babakhin, and S. Andreev<br><b>Concerning the generation of antibodies against fullerene C<sub>60</sub> core</b>                                                                               | 216 |
| P166 | <b>I.V. Gulyaev</b> , N.B. Melnikova, A.A. Volkov, I.A. Nuretdinov, V.P. Gubskaya, and L.Sh. Berezhnaya<br><b>Nitroxide malonate methanofullerenes: interaction of Langmuir monolayers and thin films with radical antioxidants</b>                                          | 217 |
| P167 | <b>R.A. Kotelnikova</b> , I.I. Faingold, A.I. Kotelnikov, G.N. Bogdanov, E.S. Frog, E.N. Berseneva, V.S. Romanova<br><b>Generation of nitrogen monoxide by amino acid fullerene derivatives in mitochondrion</b>                                                             | 218 |
| P168 | <b>E.Yu. Melenevskaya</b> , L.V. Sharonova, L.N. Gall, N.G. Podosenova, A.S. Novikov<br><b>The influence of fullerene on adsorption properties of silica gel with respect to peptides of middle molecular mass</b>                                                           | 219 |
| P169 | N.S. Ovchinnikova<br><b>Modification of polymeric materials with nanostructured surface by fulleropyrrolidines for medical applications</b>                                                                                                                                  | 220 |
| P170 | <b>L.B. Piotrovsky</b> , M.Yu. Eropkin, E.M. Eropkina, M.A. Dumpis, E.B. Dizhe, and O.I. Kiselev<br><b>Pro- and antioxidant properties of C<sub>60</sub>/PVP complex and fullerene coated surface</b>                                                                        | 221 |
| P171 | <b>Z.A. Podlubnaya</b> , I.Ya. Podolski, L.G. Marsagishvili, and M.D. Shpagina<br><b>Effects of hydrated forms of C<sub>60</sub> fullerene on amyloids of X-protein and A?-peptides</b>                                                                                      | 222 |
| P172 | <b>I.Ya. Podolski</b> , Z.A. Podlubnaya, E.A. Mugantseva, E.G. Makarova, L.G. Marsagishvili, M.D. Shpagina, O.L. Kordonets, O.V. Godukhin, G.V. Andrievsky, and V.K. Klochkov<br><b>Effects of hydrated C<sub>60</sub> fullerene on animal models of alzheimer's disease</b> | 223 |

|                                                        |                                                                                                                                                                                                                                                                                                        |     |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P173                                                   | <b>V.A. Popov</b> , M.A. Tyunin, O.B. Zaitseva, N.V. Sirotinkin, and L.B. Piotrovsky<br><b>Influence of N<sub>60</sub>/PVP complex on the healing of wounds and the toxicity in the experiments <i>in vivo</i></b>                                                                                     | 224 |
| P174                                                   | <b>S.V. Prylutska</b> , I.I. Grynyuk, O.P. Matyshevska, Yu.I. Prylutsky, U. Ritter, and P. Scharff<br><b>Antioxidant properties of nanocarbon materials <i>in vitro</i></b>                                                                                                                            | 225 |
| P175                                                   | <b>A. Tykhomyrov</b> , L. Boguslavskaya, V. Klochkov, and G. Andrievsky<br><b>C<sub>60</sub> hydrated fullerenes stimulate the plant growth at early stage</b>                                                                                                                                         | 226 |
| <b>Computer Simulation of carbon Cluster Formation</b> |                                                                                                                                                                                                                                                                                                        |     |
| P176                                                   | <b>S.S. Agafonov</b> , V.A. Somenkov, and A.A. Filippov<br><b>Sorption of hydrocarbons and hydrocarbon derivatives with crystalline fullerite</b>                                                                                                                                                      | 227 |
| P177                                                   | <b>V.I. Artyukhov</b> , J. Bruning, and L.A. Chernozatonskii<br><b>Vacancies in graphene: a prospect for graphene-based spintronics</b>                                                                                                                                                                | 228 |
| P178                                                   | <b>S.M. Avdoshenko</b> , A.A. Goryunkov, I.N. Ioffe, and L.N. Sidorov<br><b>Rationalizing fullerene halogenation: the "LIFE" algorithm</b>                                                                                                                                                             | 229 |
| P179                                                   | <b>R. Cheraghali</b> , Sh. Moradi, B. Ghanbari, and P. Alizadeh Eslami<br><b>Pathway reaction and intermediates in fullerene amination process (application in nanotechnology): an <i>ab initio</i> study</b>                                                                                          | 230 |
| P180                                                   | Sh. Moradi Dehaghi, <b>P. Alizadeh Eslami</b> , S. Nasiri laheghi, R. Cheraghali, and B. Ghanbari<br><b><i>Ab initio</i> study on the structural and reactivity of cation and cation radicals of fullerene (C<sub>60</sub><sup>•+</sup>, C<sub>60</sub><sup>2+</sup>, C<sub>60</sub><sup>3+</sup>)</b> | 231 |
| P181                                                   | <b>A.Yu. Dobrina</b> , N.G. Lebedev, and T.A. Ermakova<br><b>Research of mechanisms of carbon nanotubes growth on alumina surface</b>                                                                                                                                                                  | 232 |
| P182                                                   | <b>A.V. Dzyabchenko</b> and V. Agafonov<br><b>On the hexagonal close packing of C<sub>60</sub> buckyballs</b>                                                                                                                                                                                          | 233 |
| P183                                                   | <b>A.V. Dzyabchenko</b><br><b>Potential-derived site charge models of C<sub>60</sub></b>                                                                                                                                                                                                               | 234 |
| P184                                                   | <b>O.V. Ershova</b> , A.M. Popov, Yu.E. Lozovik, O.N. Bubl', E.F. Kislyakov, and N.A. Poklonski<br><b>Nanoactuator based on carbon nanotube: new method of control</b>                                                                                                                                 | 235 |
| P185                                                   | <b>A.S. Fedorov</b> , A.A. Kuzubov, and P.B. Sorokin<br><b><i>Ab-initio</i> study of hydrogen chemical adsorption at surfaces of carbon nanotubes with attached platinum clusters</b>                                                                                                                  | 236 |
| P186                                                   | <b>V.I.A. Margulis</b> , E.E. Muryumin, E.A. Gaiduk, and <b>L.V. Fomina</b><br><b>Optical absorption and reflection spectra of single-walled SiC nanotubes</b>                                                                                                                                         | 237 |
| P187                                                   | <b>B.M. Darinskii</b> , D.S. Sajko, and <b>V.V. Ganzha</b><br><b>New rings and balls model of atomic structure of a disordered matter</b>                                                                                                                                                              | 238 |
| P189                                                   | <b>A.M. Gurin</b><br><b>On the internal field with non-uniform potential, excited by thermal fluctuations of molecules C<sub>60</sub> in crystal</b>                                                                                                                                                   | 239 |
| P190                                                   | <b>V.S. Gurin</b><br><b>Endofullerenes C<sub>60</sub> with different metal atoms</b>                                                                                                                                                                                                                   | 240 |
| P191                                                   | <b>V. Ilyasov</b> and Yu. Ilyasov<br><b>Electronic structure and chemical bonding of nano-size diamond-like structures</b>                                                                                                                                                                             | 241 |
| P192                                                   | <b>V. Ilyasov</b> and A. Kostenko<br><b>Electronic structure and stability of diamond nanoparticles and «3d-metal-nanodiamond» solutions</b>                                                                                                                                                           | 242 |
| P193                                                   | <b>V. Ilyasov</b> , D. Velikochatskii, I. Golosovskii, and I. Nikiforov<br><b>Electronic and magnetic properties of MnO clusters inside nanotube</b>                                                                                                                                                   | 243 |
| P194                                                   | <b>S. Ketkov</b> , E. Gorina, S. Titova, L. Kalakutskaya, and G. Domrachev<br><b>Density functional and semiempirical studies of fullerene C<sub>60</sub> derivatives with silicon-containing and alkyl groups</b>                                                                                     | 244 |
| P195                                                   | <b>A.R. Khamatgalimov</b> , S.S. Korolev, Arkhipov A.A., Arkhipov An.A., and V.I. Kovalenko<br><b>Electronic structure and stability of the non-IPR isomers 6140 (D<sub>3</sub>) and 6275 (D<sub>3</sub>) of fullerene C<sub>68</sub></b>                                                              | 245 |
| P196                                                   | <b>M.G. Castanon</b> , M.A. Jimenez, <b>O.V. Kharissova</b> , and S. Velumani<br><b>Catalytic properties of Pd<sub>70</sub>C<sub>20</sub>Mo<sub>10</sub> and a comparison of its experimental and theoretical structure</b>                                                                            | 246 |

|      |                                                                                                                                                                                                                                                                |     |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P197 | <b>D.V. Leshchev</b><br><b>The dependence of the clusters and atoms collision cross-section from collision energy</b>                                                                                                                                          | 247 |
| P198 | <b>D.V. Leshchev</b> and G.A. Lukyanov<br><b>Models of clusters collisions at direct Monte-Carlo simulation of nanoclusters formation in expanding vapor</b>                                                                                                   | 248 |
| P199 | <b>D.V. Lopatin</b> and E. S. Chirkin<br><b>Calculations of crystalline structure of the fullerene C<sub>60</sub> complex with Leuco Crystal Violet (LCV)</b>                                                                                                  | 249 |
| P200 | <b>N.I. Alekseyev</b><br><b>Kinetics of the carbon nanotube formation from catalyst melt</b>                                                                                                                                                                   | 250 |
| P201 | <b>S. Moradi</b> , K. Keshvari, S. Behmanesh, A. Madadi, B. Alimadadi, and Z. Farahani<br><b><i>Ab initio</i> study of relative energy, charge distribution, and NICS for fullerenes C<sub>24</sub>-C<sub>34</sub> and its cationic, and its anionic forms</b> | 251 |
| P202 | <b>S. Moradi</b> , B. Alimadadi, S. Behmanesh, A. Madadi, Z. Farahani, and K. Keshvari<br><b><i>Ab initio</i> study of relative energy, charge distribution, and NICS for fullerenes C<sub>36</sub> and its cationic, and its anionic forms</b>                | 252 |
| P203 | <b>S. Moradi</b> , Z. Farahani, A. Madadi, B. Alimadadi, K. Keshvari, and S. Behmanesh<br><b><i>Ab initio</i> study of relative energy, charge distribution, and NICS for fullerenes C<sub>38</sub> and its cationic, and its anionic forms</b>                | 253 |
| P204 | <b>G.A. Lukyanov</b> , <b>L.Yu. Nikolaeva</b> , and N.Yu. Bykov<br><b>The direct simulation Monte-Carlo of clusters formation process in a magnetron-type generator</b>                                                                                        | 254 |
| P205 | <b>A.V. Osadchy</b> and E.D. Obraztsova<br><b>Calculation of the electronic structure of carbon nanomaterials affected by pressure</b>                                                                                                                         | 255 |
| P206 | <b>P.V. Avramov</b> , P.B. Sorokin, and <b>L.A. Chernozatonskii</b><br><b>Silicon nanowire junctions: a theoretical prediction of atomic structure and electronic properties</b>                                                                               | 256 |
| P207 | <b>N.I. Alekseyev</b> , S.V. Polovtsev, I.M. Beloserev, Ju.A. Osipov, S.A. Kernozhitskaya, N.A. Charykov<br><b>Carbon nanotube production from the waste of different chemical industries and accessible reagents.</b>                                         | 257 |
| P208 | <b>O.B. Tomilin</b> , E.E. Muryumin, S.A. Lesin, and N.P. Syrkin<br><b>Modelling of one-dimensional conjugated subsystems in single-walled carbon nanotubes</b>                                                                                                | 258 |
| P209 | <b>O.B. Tomilin</b> , N.P. Syrkin, S.A. Lesin, and E.E. Muryumin<br><b>Chemisorption modification of conjugated p electron system of graphene</b>                                                                                                              | 259 |
| P210 | <b>A.A. Vanin</b> and <b>E.M. Piotrovskaya</b><br><b>Molecular dynamics study of fullerene behavior in different solutions</b>                                                                                                                                 | 260 |
| P211 | <b>S.Q. Wang</b><br><b><i>Ab initio</i> molecular dynamics studies on the thermodynamics and cluster collision of fullerenes</b>                                                                                                                               | 261 |
| P212 | <b>K.A. Yagotintsev</b> , Yu.E. Stetsenko, I.V. Legchenkova, M.A. Strzhemechny, and A.I. Prokhvatilov<br><b>Migration mechanism and thermodynamics of He atom dopant in the C<sub>60</sub> lattice</b>                                                         | 262 |
| P213 | <b>I.V. Zaporotskova</b> , E. V. Prokofyeva, and T.A. Ermakova.<br><b>Influence of bordering functional groups on processes of capillary filling of single-wall tubulenes with elemental hydrogen</b>                                                          | 263 |
| P214 | <b>V.V. Zverev</b> and V.I. Kovalenko<br><b>On the stability 6,6- and 5,6 - closed and open adducts of fullerene C<sub>60</sub></b>                                                                                                                            | 264 |

### Applications of Nanocarbons

|      |                                                                                                                                                                                                      |     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P215 | <b>E.A. Dolgova</b> , A.R. Karaeva, I.V. Borodina, and V.Z. Mordkovich<br><b>Lubricants with nanocarbon additives</b>                                                                                | 265 |
| P216 | <b>A.V. Dunaev</b> , I.V. Archangelsky, and V.V. Avdeev<br><b>Creation of nanocarbons with metal nanoparticles from GIC for different applications in catalysis</b>                                  | 266 |
| P217 | <b>A.K. Filippov</b> , M.E. Petropavlovski, M.A. Feodorov, and R.A. Filippov.<br><b>Application nanomaterials and nanotechnology plasmas for Lithium - Ionic Batteries with improved performance</b> | 267 |
| P218 | <b>V. Glebov</b> , O. Popova, and A. Glebov<br><b>Fullerenes in magnetic materials</b>                                                                                                               | 268 |
| P219 | <b>M.N. Ladochina</b><br><b>The development of technologies for nanomodified concrete production</b>                                                                                                 | 269 |

|               |                                                                                                                                                                                                                                                                                                                     |     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P220          | B.M. Ginzburg, D.G. Tochil'nikov, A.K. Pugachev, V.M. Oichenko, Sh. Tujchiev, A.M. Leksovskiy, and S.V. Oleinik<br><b>Tribology of fluoroplastics modified with fullerene soot</b>                                                                                                                                  | 270 |
| P221          | A. Penkova, A.Toikka, T. Kostereva, N. Sudareva, and G. Polotskaya<br><b>Structure and transport properties of fullerene - polyamide membranes</b>                                                                                                                                                                  | 271 |
| P222          | I.V. Zaporotskova, A.A. Shlyahova, and P.A. Zaporotskov<br><b>Semi-empirical researches of sensor properties of carbon nanotubes with boundary functionalisation</b>                                                                                                                                                | 272 |
| <b>Others</b> |                                                                                                                                                                                                                                                                                                                     |     |
| P223          | M.V. Chernysheva, N.I. Verbitskii, E.A. Kiseleva, A.A. Eliseev, A.V. Lukashin, Yu.D. Tretyakov, S.V. Savilov, N.A. Kiselev, O.M. Zhigalina, A.S. Kumskov, A.V. Krestinin, and J.L. Hutchison<br><b>Impact of 1D nanocrystals grown in the channels of SWNTs on electronic properties of obtained nanostructures</b> | 273 |
| P224          | O.P. Dmytrenko, N.P. Kulish, V.I. Popenko, V.S. Stashchuk, L.A. Bulavin, Yu.I. Prylutsky, and E.M. Shpilevskiy<br><b>Polymerization of the C<sub>60</sub> fullerene films with their alloying with the copper and titanium atoms</b>                                                                                | 274 |
| P225          | A.N. Drozdov, A.S. Vus, V.Y. Pukha, and A.T. Pugachev<br><b>The features of C<sub>60</sub> films evaporation</b>                                                                                                                                                                                                    | 275 |
| P226          | A.D. Bozhko, E.A. Kataeva, T.V. Ishchenko, M.L. Shupegin, and S.V. Demishev<br><b>Clustering in amorphous carbon films probed by the charge transport and structural studies</b>                                                                                                                                    | 276 |
| P227          | M.V. Krasinkova and A.P. Paugurt<br><b>On the role of polarization in formation of new carbon modifications: fullerenes and nanotubes</b>                                                                                                                                                                           | 277 |
| P228          | V.A. Liopo, A.V. Sabutz, and V.A. Struk<br><b>The point symmetry monoecleant nanoparticles</b>                                                                                                                                                                                                                      | 278 |
| P229          | V.A. Liopo, V.A. Struk, and S.V. Avdeychik<br><b>The size bound between nano- and macrostate</b>                                                                                                                                                                                                                    | 279 |
| P230          | N. Makarets, A. Lyubonko, Yu. Prylutsky, and V.M. Mikoushkin<br><b>Simulation of CNT modification by ion bombarding</b>                                                                                                                                                                                             | 280 |
| P231          | V.N.Nevedomsky, V.M. Mikoushkin, A.V. Nashekin, A.P. Solonitsina, Yu.S. Gordeev, S.G. Konnikov, N.V. Makarets, and Yu.I. Prylutsky<br><b>The role of secondary electrons in forming the image of electron nano-probe</b>                                                                                            | 281 |
| P232          | A.V. Markin, N.N. Smirnova, A.G. Lyapin, M.V. Kondrin, and V.V. Brazhkin<br><b>The thermodynamic properties of amorphous carbon nanostructures synthesized by HPHT treatment of C<sub>60</sub> fullerite</b>                                                                                                        | 282 |
| P233          | A.R. Vaz, M. Macchi, S.A. Moshkalev, and J.W. Swart<br><b>Electrical characterization of nanoscale Pt structures deposited using focused ion beam</b>                                                                                                                                                               | 283 |
| P234          | Yu.S. Nechaev and O.K. Alexeeva<br><b>On the hydrogen intercalation with carbonaceous nanostructures and the spillover enhancement: Relevance to solving the on -board storage problem</b>                                                                                                                          | 284 |
| P235          | G.P. Okatova, N.A. Svidunovich, V.S. Urbanovich, V. M. Oichenko, Ju.V. Komeeva, and A.A. Novakova<br><b>Composites on basis Fe with additives nanocarbon materials</b>                                                                                                                                              | 285 |
| P236          | I.V. Osipova and V.F. Ryakhov<br><b>The method for inertialess controlled doped or multilayer metal-fullerene films growth</b>                                                                                                                                                                                      | 286 |
| P237          | V.V. Afrosimov, L.A. Baranova, A.A. Basalaev, and M.N. Panov.<br><b>Dynamics of multiple-charged fullerene ion fragmentation</b>                                                                                                                                                                                    | 287 |
| P238          | V.V.Pokropivny, A.S.Smoljar, A.V.Pokropivny, and V.L. Bekenev<br><b>Unconventional polymorphic modifications of carbon and boron nitride: existence, structure, electronic properties and bulk modula</b>                                                                                                           | 288 |
| P239          | A. Pozdnyakov, M. Brzhezinskaya, and A. Vinogradov<br><b>NEXAFS spectra of polymer-nanocarbon composites</b>                                                                                                                                                                                                        | 289 |
| P240          | V.E. Pukhaa, A.N. Stetsenko, S.N. Dubb, O.M. Vovke, A.N. Drozdova, and J.K. Leed<br><b>Structural formation peculiarities of the carbon deposits originated from the accelerated C<sub>60</sub> atoms</b>                                                                                                           | 290 |
| P241          | V. Rodin and E. Vasil'eva<br><b>Modification of iron nanoclusters by perfluorinated radicals</b>                                                                                                                                                                                                                    | 291 |
| P242          | S.G. Romanov, G. Visimberga, C.M. Sotomayor Torres, N. Gaponik, A. Eychmuller, J.S. Bendall, Yu.A.Kumzerov<br><b>Regular arrays of nanowires from asbestos nanotube-templated nanocrystals</b>                                                                                                                      | 292 |

|      |                                                                                                                                                                                                                                                                                                                                                |     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P243 | S.V. Gladchenko, N.N. Rozhkova, and A.V. Gribanov<br><b>Dipole moment of fullerene and basic structural unit of shungite carbon</b>                                                                                                                                                                                                            | 293 |
| P244 | A. Rybkin, D. Usachov, A. Varykhalov, A.M. Shikin, and V.K. Adamchuk<br><b>Electronic energy structure of gold nanoclusters on oxidized surface Ni(755)</b>                                                                                                                                                                                    | 294 |
| P245 | S.V. Samsonov, I.V. Zolotukhin, and P.P. Mikulayk<br><b>Influence of a structural condition of carbon on thermoelectric properties Bi<sub>2</sub>Te<sub>3</sub></b>                                                                                                                                                                            | 295 |
| P246 | T.A. Tumareva, G.G. Sominski, A.N. Morozov, and I.A. Svetlov<br><b>Activated by potassium ions flow field emitters with fullerene coating in strong electric fields</b>                                                                                                                                                                        | 296 |
| P247 | G.V. Tikhomirova and A.N. Babushkin<br><b>Different conductive phases of C<sub>60</sub> induced by high pressures up to 50 Gpa</b>                                                                                                                                                                                                             | 297 |
| P248 | S.Yu. Tsarjova, A.N. Kovalenko, E.V. Zharikov, L.D. Iskhakova, B. Vigolo, E. McRae, X. Devaux<br><b>Carbon nanostructure formation via catalytic pyrolysis of benzene</b>                                                                                                                                                                      | 298 |
| P249 | D. Usachov, A. Varykhalov, and V.K. Adamchuk<br><b>One-dimensional chains of C<sub>60</sub> molecules on Ni(755)</b>                                                                                                                                                                                                                           | 299 |
| P250 | D. Usachov, A.M. Dobrovorskii, A. Varykhalov, A.M. Shikin, and V.K. Adamchuk<br><b>Geometrical flexibility of a graphite monolayer</b>                                                                                                                                                                                                         | 300 |
| P251 | A. Varykhalov, W. Gudat, V. K. Adamchuk, and O. Rader<br><b>Spectro-microscopic observation of intercalated fullerenes</b>                                                                                                                                                                                                                     | 301 |
| P252 | A.P. Vozniakovskiy and M.F.Kudoyarov<br><b>Evaluation of physical-chemical parameters peculiar to the sorption in bulk of polymer nanocomposites</b>                                                                                                                                                                                           | 302 |
| P253 | V.I.Zubov and I.V.Zubov<br><b>The third, molecular, form of carbon - fullerenes,fullerites and fullerides. Pre-hystory, discoveryand physical properties</b>                                                                                                                                                                                   | 303 |
| P254 | Y.V. Sokolov, L.A. Bityuzkaya, V.T. Perzev, N.S. Goncharova, A.G. Tkachev, and V.L. Negrov<br><b>Fractal aggregation of carbon nanotubes in liquid mediums and their application in nanocomposite materials</b>                                                                                                                                | 304 |
| P255 | V.V.Pokropivny and M.M. Kasumov<br><b>Arc synthesis and mechanism of ZnO-nanostructure formation</b>                                                                                                                                                                                                                                           | 305 |
| P256 | O.A. Andreeva, M.A. Bryushinin, Yu.A. Kumzerov, V.N. Semkin, and I.A. Sokolov<br><b>Space- and time-current spectroscopy of polypyrrole nanowires in chrysotile asbestos matrix</b>                                                                                                                                                            | 306 |
| P257 | O. A. Troshina, P. A. Troshin, A.S. Peregudov, J. Balzarini, and R. N. Lyubovskaya<br><b>Synthesis of water-soluble fullerene derivatives for medicinal applications</b>                                                                                                                                                                       | 307 |
| P258 | N.V. Vymorkov, V.A. Cruchkov, Ya.M. Portnova<br><b>The experimental studies on the optimization of carbon nanotubes manufacture methods, methods of nanotubes introduction into matrix and methods of matrix modification</b>                                                                                                                  | 308 |
| P259 | E.M.Pazhetnov and A.I.Boronin<br><b>Nanosized carbon hills on Pt(111). Formation and properties</b>                                                                                                                                                                                                                                            | 309 |
| P260 | A.N. Bekhterev<br><b>IR-Fourier spectral research of structural transformations in low dimensional glassy nanocarbon</b>                                                                                                                                                                                                                       | 310 |
| P261 | A.N. Bekhterev and V.M. Zolotarev<br><b>The diffuse reflection spectroscopy of vibration states in nanocarbon clusters</b>                                                                                                                                                                                                                     | 311 |
| P262 | A.N. Bekhterev<br><b>Elastic constants of nanocrystal carbon</b>                                                                                                                                                                                                                                                                               | 312 |
| P263 | L.N. Belobrzeczkaja, C. Artini, G.A. Costa, R. Fiorini, P. Piaggio, Yu. Grushko, N.D. Shchigolev, and V.M. Samsonov<br><b>C<sub>60</sub> and C<sub>70</sub> compared by IR spectroscopy studies</b>                                                                                                                                            | 313 |
| P264 | L.N. Belobrzeczkaja, M. Del Borghi, G. Delucchi, M. Fumagalli, G. Costa, C. Artini, A. Ubaldini, L.L. Rodina, O.O. Alekseeva, and A.V. Ryzhakov<br><b>Magnetic g-factor and specific electrical resistances of conducting materials of Ion-radical salts composed by different heterocyclic N-oxides with 7,7,8,8-tetracyanoquinodimethane</b> | 314 |
| P265 | S.V. Kozyrev, A.V. Prikhodko, G.D. Mishin, A.A. Firsenskov, G.D. Pavlov, and V.A. Vekshin<br><b>Microwave properties of composite with cobalt nanoclusters on aramide tissues</b>                                                                                                                                                              | 315 |
| P266 | V.V. Goncharov, I.V. Shalnev, M.N. Korytov, P.N. Brunkov, A.T. Dideykin, and A.Ya. Vul'<br><b>Electrostatic force microscopy study of nanodiamonds on the silicon surface</b>                                                                                                                                                                  | 316 |
| P267 | S.V. Kidalov, F.M. Shakhov, I.E. Bogomazov and A.Ya. Vul'<br><b>Thermal conductivity and properties of urethane lacquer modified by nanocarbon materials</b>                                                                                                                                                                                   | 317 |

|      |                                                                                                                                                                                                |     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| P268 | A.E. Aleksenskiy, <b>M.V. Kazakova</b> , V.I. Siklitskiy, M.A. Yagovkina, and A.Ya. Vul'<br><b>Investigation of process of drying of nanodiamonds</b>                                          | 318 |
| P269 | A.E. Alexenskiy, M.V. Baidakova, E.V. Kolesnikova, S.G. Konnikov, A.Ya. Vul', <b>M.A. Yagovkina</b> ,<br>M.V. Zamoryanskaya<br><b>Cathodoluminescence studies of the nanodiamond particles</b> | 319 |
| P270 | V.N. Prigodin<br><b>Anomalous magnetoresistance of C<sub>60</sub> and other organic semiconductors</b>                                                                                         | 320 |
| P271 | M.Ya. Amusia<br><b>Photoionization and vacancy decay of endohedral atoms</b>                                                                                                                   | 321 |
| P272 | <b>I.V. Lebedeva</b> , A.A.Knizhnik, A.A. Bagatur'yants, and B.V. Potapkin<br>Kinetics of 2D-3D transformations of carbon nanostructures                                                       | 322 |
|      | Author Index                                                                                                                                                                                   | 323 |
|      | Contents                                                                                                                                                                                       | 329 |