

EDITORIAL BOARD

Editor-in-chief

Prof. Dr.-Ing. Dr. h.c. J. Karger-Kocsis, Budapest University of Technology and Economics (H)

Editor

Prof. Dr. T. Czigány, Budapest University of Technology and Economics (H)

International Advisory Board

Prof. Dr. A. Bismarck, Imperial College London (UK)

Prof. Dr. W. Brostow, University of North Texas (USA)

Prof. Dr. S. Fakirov, The University of Auckland (NZ)

Prof. Dr. P.M. Frontini, University of Mar del Plata (ARG)

Prof. Dr. M. Gahleitner, Borealis Polyolefine Ltd., Linz (A)

Prof. Dr. B.K. Kim, Pusan National University (KOR)

Prof. Dr. P. Krawczak, Ecole des Mines, Douai (F)

Prof. Dr. A.S. Luyt, Qatar University, Doha (QA)

Prof. Dr. Gy. Marosi, Budapest University of Technology and Economics (H)

Prof. Dr. Z.A. Mohd-Ishak, Universiti Sains Malaysia, Penang (MAL)

Prof. Dr. A. Pegoretti, University of Trento (IT)

Prof. Dr. G.C. Psarras, University of Patras (GR)

Prof. Dr. J. Puiggali, Technical University of Catalonia (ES)

Prof. Dr. J.V. Seppälä, Helsinki University of Technology (FIN)

Prof. Dr. R.A. Shanks, RMIT University, Melbourne (AU)

Prof. Dr. S.C. Tjong, City University of Hong Kong (HK)

Prof. Dr. A. Todoroki, Tokyo Institute of Technology (J)

Prof. Dr. L.Q. Zhang, Beijing University of Chemical Technology (CHN)

Prof. Dr. M.Q. Zhang, Zhongshan University, Guangzhou (CHN)

Executive Editorial Board

Dr. L. Macskási (H)

Dr. Gy. Bánhegyi (H)

Dr. T. Bárány (H)

Dr. L. Mészáros (H)

Dr. B. Morlin (H)

Dr. G. Romhány (H)

Dr. A. Toldy (H)

Dr. J. Völgyi (H)

Publisher

Budapest University of Technology and Economics, Department of Polymer Engineering (BME-PT Hungary, H-1111 Budapest, Műegyetem rkp. 3.)

eXPRESS Polymer Letters

Web: www.expresspolymlett.com

E-mail: expresspolymlett@pt.bme.hu

ISSN 1788-618X

CONTENT

Volume 10, Number 1 / January, 2016	1
1. Czigány T.: <i>Preface to the tenth volume of Express Polymer Letters</i>	1
2. Posadas P., Malmierca M. A., González-Jiménez A., Ibarra L., Rodríguez A., Valentin J. L., Nagaoka T., Yajima H., Toki S., Che J., Rong L., Hsiao B. S.: <i>ESR investigation of NR and IR rubber vulcanized with different cross-link agents.....</i>	2
3. Matsuzaki R., Hatori S.: <i>Numerical simulations of residual stress and inhomogeneous conductivity effects in CNT-filled resins cured by electric field</i>	15
4. Lomov S. V., Molnár K.: <i>Compressibility of carbon fabrics with needleless electrospun PAN nanofibrous interleaves</i>	25
5. Ke Y., Zhang X. Y., Ramakrishna S., He L. M., Wu G.: <i>Synthetic routes to degradable copolymers deriving from the biosynthesized polyhydroxyalkanoates: A mini review</i>	36
6. Mallakpour S., Soltanian S.: <i>Efficient surface modification of MWCNTs with vitamin B1 and production of poly(ester-imide)/MWCNTs nanocomposites containing L-phenylalanine moiety: Thermal and microscopic study</i>	54
7. Iannotti V., Ausanio G., Lanotte L., Lanotte L.: <i>Magneto-piezoresistivity in iron particle-filled silicone: An alternative outlook for reading magnetic field intensity and direction</i>	65
8. Karabork F., Tipirdamaz S. T.: <i>Influence of pyrolytic carbon black and pyrolytic oil made from used tires on the curing and (dynamic) mechanical properties of natural rubber (NR)/styrene-butadiene rubber (SBR) blends.....</i>	72
Volume 10, Number 2 / February, 2016.....	83
9. Frontini P. M.: <i>Can the standard impact tests become a true materials evaluation tool?</i>	83
10. Seoane Rivero R., Bilbao Solaguren P., Gondra Zubieta K., Peponi L., Marcos-Fernández A.: <i>Synthesis, kinetics of photo-dimerization/photo-cleavage and physical properties of coumarin-containing branched polyurethanes based on polycaprolactones.....</i>	84
11. Guler Z., Sarac A. S.: <i>Electrochemical impedance and spectroscopy study of the EDC/NHS activation of the carboxyl groups on poly(ϵ-caprolactone)/poly(m-anthranilic acid) nanofibers</i>	96
12. Fortunati E., Gigli M., Luzi F., Lotti N., Munari A., Gazzano M., Armentano I., Kenny J. M.: <i>Poly(butylene cyclohexanedicarboxylate/diglycolate) random copolymers reinforced with SWCNTs for multifunctional conductive biopolymer composites</i>	111

eXPRESS Polymer Letters

Web: www.expresspolymlett.com

E-mail: expresspolymlett@pt.bme.hu

ISSN 1788-618X

13. Shi Y., Xiong D. S., Peng Y., Wang N.:
Effects of polymerization degree on recovery behavior of PVA/PVP hydrogels as potential articular cartilage prosthesis after fatigue test 125
14. Rusmirović J. D., Trifković K. T., Bugarski B., Pavlović V. B., Džunuzović J., Tomić M., Marinković A. D.:
High performances unsaturated polyester based nanocomposites: Effect of vinyl modified nanosilica on mechanical properties 139
15. Oliveira F., Dencheva N., Martins P., Lanceros-Méndez S., Denchev Z.:
Reactive microencapsulation of carbon allotropes in polyamide shell-core structures and their transformation in hybrid composites with tailored electrical properties 160
16. Zafar M. T., Zarrinbakhsh N., Mohanty A. K., Misra M., Maiti S. N., Ghosh A. K.:
Biocomposites based on poly(lactic acid)/willow-fiber and their injection moulded microcellular foams 176
- Volume 10, Number 3 / March, 2016** 187
17. Gahleitner M.:
A second life for polymers ... needs more research 187
18. Icart L. P., dos Santos E. R. F., Pereira E. D., Ferreira S. R., Saez V., Ramon J.A., Nele M., Pinto J. C. S., Toledo R. D., Silva D. Z., Souza Jr F. G.:
PLA-b-PEG/magnetite hyperthermic agent prepared by Ugi four component condensation 188
19. Ballesteros R., Sundaram B. M., Tippur H. V., Auad M. L.:
Sequential graft-interpenetrating polymer networks based on polyurethane and acrylic/ester copolymers 204
20. Gyulai G., Magyar A., Rohonczy J., Orosz J., Yamasaki M., Bószé Sz., Kiss É.:
Preparation and characterization of cationic Pluronic for surface modification and functionalization of polymeric drug delivery nanoparticles 216
21. Kanapitsas A., Tsonos C., Psarras G. C., Kriptomou S.:
Barium ferrite/epoxy resin nanocomposite system: Fabrication, dielectric, magnetic and hydration studies 227
22. Makhoulouf A., Satha H., Frihi D., Gherib S., Seguela R.:
Optimization of the crystallinity of polypropylene/submicronic-talc composites: The role of filler ratio and cooling rate 237
23. Gonçalves A. A. L., Fonseca A. C., Fabela I. G. P., Coelho J. F. J., Serra A. C.:
Synthesis and characterization of high performance superabsorbent hydrogels using bis[2-(methacryloyloxy)ethyl] phosphate as crosslinker 248
24. Blaszczyk-Lezak I., Desmaret V., Mijangos C.:
Electrically conducting polymer nanostructures confined in anodized aluminum oxide templates (AAO) 259

Volume 10, Number 4 / April, 2016	273
25. Puiggalí J.: <i>Development of antimicrobial polymers by incorporation of bacteriophages.....</i>	273
26. Fehri M. K., Mugoni C., Cinelli P., Anguillesi I., Coltelli M. B., Fiori S., Montorsi M., Lazzeri A.: <i>Composition dependence of the synergistic effect of nucleating agent and plasticizer in poly(lactic acid): A Mixture Design study.....</i>	274
27. Srimalanon P., Yamsaengsung W., Kositchaiyong A., Wimolmala E., Isarangkura K., Sombatsompop N.: <i>Effects of UV-accelerated weathering and natural weathering conditions on anti-fungal efficacy of wood/PVC composites doped with propylene glycol-based HPQM.</i>	289
28. Chmielarz P., Król P.: <i>PSt-b-PU-b-PSt copolymers using tetraphenylethane-urethane macroinitiator through SARA ATRP</i>	302
29. Xiong B., Lame O., Chenal J-M., Rochas C., Seguela R.: <i>On the strain-induced fibrillar microstructure of polyethylene: Influence of chemical structure, initial morphology and draw temperature</i>	311
30. Lakatos Cs., Czifrák K., Papp R., Karger-Kocsis J., Zsuga M., Kéki S.: <i>Segmented linear shape memory polyurethanes with thermoreversible Diels-Alder coupling: Effects of polycaprolactone molecular weight and diisocyanate type.....</i>	324
31. Saeed M. U., Li B. B., Chen Z. F., Cui S.: <i>Self-healing of low-velocity impact and mode-I delamination damage in polymer composites via microchannels</i>	337
32. Lashgari S., Karrabi M., Ghasemi I., Azizi H., Messori M., Paderni K.: <i>Shape memory nanocomposite of poly(L-lactic acid)/graphene nanoplatelets triggered by infrared light and thermal heating</i>	349
Volume 10, Number 5 / May, 2016.....	360
33. Lauke B., Karger-Kocsis J.: <i>Challenges in fracture toughness modelling of nanocomposites</i>	360
34. Oborná J., Mravcová L., Michlovská L., Vojtová L., Vávrová M.: <i>The effect of PLGA-PEG-PLGA modification on the sol-gel transition and degradation properties.....</i>	361
35. Kalácska G., Keresztes R., Földi L., Klébert Sz., Károly Z., Zsidai L.: <i>Thermal conductivity of plasma modified polyethylene terephthalate and polyamide-6 layers.....</i>	373
36. Kelnar I., Kratochvíl J., Fortelný I., Kaprálková L., Zhigunov A., Khunová V., Nevoralová M.: <i>Effect of halloysite on structure and properties of melt-drawn PCL/PLA microfibrillar composites.....</i>	381
37. Ozdemir N. G., Zhang T., Aspin I., Scarpa F., Hadavinia H., Song Y.: <i>Toughening of carbon fibre reinforced polymer composites with rubber nanoparticles for advanced industrial applications.....</i>	394

38. Rolere S., Bottier C., Vaysse L., Sainte-Beuve J., Bonfils F.:
Characterisation of macrogel composition from industrial natural rubber samples: Influence of proteins on the macrogel crosslink density..... 408
39. Dong A., Wu H., Fan X., Wang Q., Yu Y., Cavaco-Paulo A.:
Enzymatic hydrophobization of jute fabrics and its effect on the mechanical and interfacial properties of jute/PP composites..... 420
40. Cohn C., Leung S. L., Crosby J., Lafuente B., Zha Z., Teng W., Downs R., Wu X.:
Lipid-mediated protein functionalization of electrospun polycaprolactone fibers 430

Volume 10, Number 6 / June, 2016438

41. Marosi Gy.:
Polymer technology and bioengineering - which learns from the other? 438
42. Chemtob A., De Paz-Simon H., Sibeaud M., El Fouhali B., Croutxé-Barghorn C., Jacomine L., Gauthier Ch., Le Houérou V.:
An orthogonal, one-pot, simultaneous UV-mediated route to thiol-ene/sol-gel film..... 439
43. Huang T. C., Yeh L. C., Lai G. H., Lai F. Y., Yang T. I., Huang Y. J., Lo A. Y., Yeh J. M.:
Electroactive polyurea/CNT composite-based electrode for detection of vitamin C..... 450
44. Shaayegan V., Mark L. H., Tabatabaei A., Park C. B.:
A new insight into foaming mechanisms in injection molding via a novel visualization mold 462
45. Xie F., Qi S. H., Wu D.:
A facile strategy for the reduction of graphene oxide and its effect on thermal conductivity of epoxy based composites..... 470
46. Kupka V., Vojtova L., Fohlerova Z., Jancar J.:
Solvent free synthesis and structural evaluation of polyurethane films based on poly(ethylene glycol) and poly(caprolactone) 479
47. Bertoncej B., Vojisavljević K., Rihtaršič J., Trefalt G., Huskić M., Žagar E., Malič B.:
A Voronoi-diagram analysis of the microstructures in bulk-molding compounds and its correlation with the mechanical properties..... 493
48. Vijayan P., AlMaadeed M. A.:
'Containers' for self-healing epoxy composites and coating: Trends and advances 506

Volume 10, Number 7 / July, 2016.....525

49. Karger-Kocsis J.:
(Multi)functional polymers and composites via Diels-Alder reactions 525
50. Park J., Shin K. S.:
Novel method of polymer/low-melting-point metal alloy/light metal fiber composite fabrication..... 526
51. Štirn Ž., Ručigaj A., Krajnc M.:
Characterization and kinetic study of Diels-Alder reaction: Detailed study on N-phenylmaleimide and furan based benzoxazine with potential self-healing application .537

eXPRESS Polymer Letters

Web: www.expresspolymlett.com

E-mail: expresspolymlett@pt.bme.hu

ISSN 1788-618X

52. Barbera V., Musto S., Citterio A., Conzatti L., Galimberti M.:
Polyether from a biobased Janus molecule as surfactant for carbon nanotubes 548
53. Geyer B., Lorenz G., Kandelbauer A.:
Recycling of poly(ethylene terephthalate) – A review focusing on chemical methods 559
54. Asadi A., Miller M., Moon R. J., Kalaitzidou K.:
Improving the interfacial and mechanical properties of short glass fiber/epoxy composites by coating the glass fibers with cellulose nanocrystals 587
55. Bunyatova U., Rzayev Z. M. O., Şimşek M.:
Multifunctional e-spun colloidal nanofiber structures from various dispersed blends of PVA/ODA-MMT with PVP/ODA-MMT, poly(VP-alt-MA) and AgNPs incorporated polymer complexes as electro-active platforms..... 598
56. Zhang L., Wang M., Wu J.:
Study on an amine-containing benzoxazine: Homo- and copolymerization with epoxy resin..... 617
- Volume 10, Number 8 / August, 2016**.....627
57. Zhang M. Q.:
“Waking sleeping beauty”: Regeneration of vulcanized rubber by triggering dynamicity of the inherent sulfur network..... 627
58. Pérez-Madrigal M. M., Llorens E., del Valle L. J., Puiggali J., Armelin E., Alemán C.:
Semiconducting, biodegradable and bioactive fibers for drug delivery..... 628
59. Graupner N., Albrecht K., Ziegmann G., Enzler H., Müssig J.:
Influence of reprocessing on fibre length distribution, tensile strength and impact strength of injection moulded cellulose fibre-reinforced polylactide (PLA) composites..... 647
60. Ahmad H., Sultana M. S., Alam M. A., Rahman M. M., Tauer K., Gafur M. A., Sharafat M. K.:
Evaluating a simple blending approach to prepare magnetic and stimuli-responsive composite hydrogel particles for application in biomedical field..... 664
61. Jia Y. C., He H., Yu P., Chen J., Lai X. L.:
Synergistically improved thermal conductivity of polyamide-6 with low melting temperature metal and graphite 679
62. Castano M., Alvarez A., Becker M. L., Puskas J. E.:
Synthesis of polyisobutylene-polycaprolactone block copolymers using enzyme catalysis .. 693
63. Kida T., Hiejima Y., Nitta K.-H.:
Molecular orientation behavior of isotactic polypropylene under uniaxial stretching by rheo-Raman spectroscopy..... 701
64. Manek E., Berke B., Miklósi N., Sajbán M., Domán A., Fukuda T., Czakkel O., László K.:
Thermal sensitivity of carbon nanotube and graphene oxide containing responsive hydrogels..... 710

Volume 10, Number 9 / September, 2016	721
65. Psarras G. C.: <i>'Energy Materials' ... the role of polymers</i>	721
66. Fainleib A., Grigoryeva O., Starostenko O., Vashchuk A., Rogalsky S., Grande D.: <i>Acceleration effect of ionic liquids on polycyclotrimerization of dicyanate esters</i>	722
67. Zheng G. P., Jiang Z. Y., Han Z., Yang J. H.: <i>Mechanical and electro-mechanical properties of three-dimensional nanoporous graphene-poly(vinylidene fluoride) composites.....</i>	730
68. Xia N. N., Rong M. Z., Zhang M. Q., Kuo S.-W.: <i>Stress intensification – an abnormal phenomenon observed during stress relaxation of dynamic coordination polymer</i>	742
69. Mathioudakis G. N., Soto Beobide A., Koromilas N. D., Kallitsis J. K., Bokias G., Voyiatzis G. A.: <i>Evaluation of the release characteristics of covalently attached or electrostatically bound biocidal polymers utilizing SERS and UV-Vis absorption</i>	750
70. Doyranlı C., Baycan Koyuncu F.: <i>Carbazole based electrochromic polymers with benzoazole units: Effect of heteroatom variation on electrochromic performance.....</i>	762
71. Bocz K., Tábi T., Vadas D., Sauceau M., Fages J., Marosi Gy.: <i>Characterisation of natural fibre reinforced PLA foams prepared by supercritical CO₂ assisted extrusion</i>	771
72. Agrawalla R. K., Meriga V., Paul R., Chakraborty A. K., Mitra A. K.: <i>Solvothermal synthesis of a polyaniline nanocomposite – a prospective biosensor electrode material</i>	780
Volume 10, Number 10 / October, 2016	788
73. Seppälä J.: <i>3D-printed polymers for biomedical applications</i>	788
74. Zhang X. M., Liu J. G., Yang S. Y.: <i>Synthesis and characterization of flexible and high-temperature resistant polyimide aerogel with ultra-low dielectric constant.....</i>	789
75. Schneider J., Bourque K., Narayan R.: <i>Moisture curable toughened poly(lactide) utilizing vinyltrimethoxysilane based crosslinks</i>	799
76. Chmielarz P.: <i>Synthesis of cationic star polymers by simplified electrochemically mediated ATRP</i>	810
77. Mohamed M. A. A., Pedrazzoli D., Nady N., Kalaitzidou K.: <i>Temperature-dependent rigidity and magnetism of polyamide 6 nanocomposites based on nanocrystalline Fe-Ni alloy of various geometries.....</i>	822
78. García D. E., Carrasco J. C., Salazar J. P., Pérez M. A., Cancino R. A., Riquelme S.: <i>Bark polyflavonoids from Pinus radiata as functional building-blocks for polylactic acid (PLA)-based green composites</i>	835

79. Leisen C., Drummer D.:
***Infrared welding of cross-linkable polyamide 66* 849**
80. Matsuzaki R., Naito M., Seto D., Todoroki A., Mizutani Y.:
***Analytical prediction of void distribution and a minimum-void angle in anisotropic fabrics for radial injection resin transfer molding* 860**

Volume 10, Number 11 / November, 2016873

81. Kim B. K.:
***Cleaner, greener routes for polyurethanes* 873**
82. Li W., Yue Y. Z., Wang M. Y., Li Q., Ren R.:
***Using maleic anhydride functionalized graphene oxide for improving the interfacial properties of carbon fiber/BMI composites* 874**
83. Koteswararao J., Abhishek R., Satyanarayana S. V., Madhu G. M., Venkatesham V.:
***Influence of cadmium sulfide nanoparticles on structural and electrical properties of polyvinyl alcohol films* 883**
84. Mallakpour S., Behranvand V.:
***Polymeric nanoparticles: Recent development in synthesis and application* 895**
85. Kostopoulos V., Kotrotsos A., Baltopoulos A., Tsantzalis S., Tsokanas P., Loutas T., Bosman A. W.:
***Mode II fracture toughening and healing of composites using supramolecular polymer interlayers* 914**
86. Tavares L. B., Boas C. V., Schleder G. R., Nacas A. M., Rosa D. S., Santos D. J.:
***Bio-based polyurethane prepared from Kraft lignin and modified castor oil* 927**
87. Kusano M., Kubouchi M., Bulgarevich D. S., Shiwa M.:
***Non-destructive evaluation by terahertz spectroscopy for penetration of acid solutions into epoxy resin* 941**
88. Ji W. F., Li C. W., Huang W. J., Yu H. K., Chen R. D., Yu Y. H., Yeh J. M., Tang W. C., Su Y. C.:
***Composite coating with synergistic effect of biomimetic epoxy thermoset morphology and incorporated superhydrophobic silica for corrosion protection* 950**

Volume 10, Number 12 / December, 2016964

89. Karger-Kocsis J., Grishchuk S.:
***Molecular architecting in thermosets – Still chance ‘at the bottom’?* 964**
90. Lu F-F., Yu H-Y., Zhou Y., Yao J-M.:
***Spherical and rod-like dialdehyde cellulose nanocrystals by sodium periodate oxidation: Optimization with double response surface model and templates for silver nanoparticles* .. 965**
91. Biani A., Dorigato A., Bonani W., Slouf M., Pegoretti A.:
***Mechanical behaviour of cyclic olefin copolymer/exfoliated graphite nanoplatelets nanocomposites foamed through supercritical carbon dioxide* 977**
92. Sacarescu L., Roman G., Sacarescu G., Simionescu M.:
***Fluorescence detection system based on silicon quantum dots–polysilane nanocomposites* 990**

eXPRESS Polymer Letters

Web: www.expresspolymlett.com

E-mail: expresspolymlett@pt.bme.hu

ISSN 1788-618X

93. Li W., Bakhtiary Noodeh M., Delpouve N., Saiter J-M., Tan L., Negahban M.:
Printing continuously graded interpenetrating polymer networks of acrylate/epoxy by manipulating cationic network formation during stereolithography 1003
94. Toldy A., Niedermann P., Szebényi G., Szolnoki B.:
Mechanical properties of reactively flame retarded cyanate ester/epoxy resin blends and their carbon fibre reinforced composites 1016
95. Wang W., Hou L., Sheng J., Ren M., Tang Y.:
Copolymerization of 4-methyl-1-pentene with α,ω -alkenols 1026
96. Alhumade H., Yu A., Elkamel A., Simon L., Abdala A.:
Enhanced protective properties and UV stability of epoxy/graphene nanocomposite coating on stainless steel 1034