

# CURRICULUM VITAE OF IGOR KRUPA

## A. PERSONAL DATA

**NAME:** Igor KRUPA

**BIRTH DATE:** March 27, 1968

**BIRTH PLACE:** Trenčín, SLOVAKIA (former Czechoslovakia)

**MERITAL STATUS:** married +2

**PERMANENT WORK ADDRESS:** Qatar University, Center for Advanced Materials  
P.O. Box: 2713 Doha, Qatar

**E-mail:** [igor.krupa@qu.edu.qa](mailto:igor.krupa@qu.edu.qa)

**A1. Language skills:** Slovak – native, English – advanced, Russian – intermediate  
German and French – low intermediate

**A2. Professional interest:** Polymeric blends and composites  
Electrically and thermally conductive composites  
Phase change materials  
Sol – gel chemistry  
Modifications of polymeric surfaces

## B. EDUCATION

1982 – 1986 High school, Nové Mesto nad Váhom, SLOVAKIA

1986 – 1991 Slovak Technical University, Faculty of Chemical Technology,  
Bratislava, SLOVAKIA

**Major:** Technical Physical and Analytical Chemistry

**Academic degree:** Engineer of Chemistry

**Dissertation:** “Description of the dissociation of small  
molecules in the femtosecond region”.

1996 – 1999 Doctoral study at the Polymer Institute of Slovak Academy of  
Sciences, Bratislava, SLOVAKIA. PhD degree was obtained in 1999.

**Thesis:** “The influence of carbon fillers on the physical  
properties of polymeric composites”

## C. PROFESSIONAL BACKGROUND

1993 - 1994: Institute of Inorganic Chemistry, Slovak Academy of Sciences, SLOVAKIA  
**Position:** researcher

1994 – 2012: Polymer Institute, Slovak Academy of Sciences, SLOVAKIA

**Positions:** PhD student, research fellow, Head of  
*Department of theoretical and applied research  
of polymeric materials (2009-May 2011)*  
Head of *Department of composite materials*  
(from May 2011 to September 2012)

From September 2012: Center for Advanced Materials, Qatar University

**Position:** QAPCO Polymer Chair

#### D. RESEARCH ABROAD

| Duration                    | Institution                                     | Position                                       |
|-----------------------------|---|--|
| August 1999 - December 2000 | University of the North, South Africa           | postdoctoral research                          |
| January 2002 – June 2003    | RHODIA RESEARCH CENTRUM, Lyon, France           | postdoctoral research (Marie Curie fellowship) |
| March 2006 – Mai 2006       | University of the Free State, South Africa      | visiting scientist                             |
| Mai 2007                    | Universidad Carlos III de Madrid, Madrid, Spain | visiting professor                             |
| April 2009-Mai 2009         | Université Paris 12 Val de Marne, Paris, France | visiting professor                             |
| April 2010-Mai 2010         | Université Paris 12 Val de Marne, Paris, France | visiting professor                             |
| Mai 2012-June 2012          | Université Paris 12 Val de Marne, Paris, France | visiting professor                             |

#### E. PAPERS IN INTERNATIONAL PEER-REVIEWED JOURNALS & CONFERENCES PRESENTATIONS

The author or co-author of 90 scientific papers in the current content journals and six chapters in the books.

Over 100 presentations on the international conferences.

1527 (SCOPUS) / 2076 Google Scholar citations in the peer-reviewed journals.

Hirsch Index = 23

## 10 the highest cited papers (Google Scholar)

|                          |   |                     |
|--------------------------|---|---------------------|
| <input type="checkbox"/> | <a href="#">Physical properties of thermoplastic/graphite composites</a><br><b>I Krupa</b> , I Chodák<br>European Polymer Journal 37 (11), 2159-2168 (2001)   | <a href="#">131</a> |
| <input type="checkbox"/> | <a href="#">Electrically and thermally conductive polyethylene/graphite composites and their mechanical properties</a><br><b>I Krupa</b> , I Novák, I Chodák<br>Synthetic Metals 145 (2), 245-252 (2004)  | <a href="#">113</a> |
| <input type="checkbox"/> | <a href="#">Phase change materials based on low-density polyethylene/paraffin wax blends</a><br><b>I Krupa</b> , G Miková, AS Luyt<br>European Polymer Journal 43 (11), 4695-4705 (2007)  | <a href="#">89</a>  |
| <input type="checkbox"/> | <a href="#">A comparative study on the electrical and mechanical behaviour of multi-walled carbon nanotube composites prepared by diluting a masterbatch with various types of polypropylenes</a><br>M Mičušík, M Omastová, <b>I Krupa</b> , J Prokeš, P Pissis, E Logakis, C Pandis, ...<br>Journal of Applied Polymer Science 113 (4), 2536-2551 (2009) | <a href="#">88</a>  |
| <input type="checkbox"/> | <a href="#">Mechanical properties of uncrosslinked and crosslinked linear low-density polyethylene/wax blends</a><br><b>I Krupa</b> , AS Luyt<br>Journal of Applied Polymer Science 81 (4), 973-980 (2001)  | <a href="#">71</a>  |
| <input type="checkbox"/> | <a href="#">"Percolation effect" and mechanical behavior of carbon black filled polyethylene</a><br>I Chodak, <b>I Krupa</b><br>Journal of Materials Science Letters 18 (18), 1457-1459 (1999)  | <a href="#">71</a>  |
| <input type="checkbox"/> | <a href="#">Electro-conductive resins filled with graphite for casting applications</a><br>I Novák, <b>I Krupa</b><br>European Polymer Journal 40 (7), 1417-1422 (2004)   | <a href="#">68</a>  |
| <input type="checkbox"/> | <a href="#">Analysis of correlation between percolation concentration and elongation at break in filled electroconductive epoxy-based adhesives</a><br>I Novák, <b>I Krupa</b> , I Chodák<br>European Polymer Journal 39 (3), 585-592 (2003)  | <a href="#">62</a>  |
| <input type="checkbox"/> | <a href="#">Polypropylene as a potential matrix for the creation of shape stabilized phase change materials</a><br><b>I Krupa</b> , G Miková, AS Luyt<br>European Polymer Journal 43 (3), 895-907 (2007)  | <a href="#">55</a>  |
| <input type="checkbox"/> | <a href="#">Electrically conductive composites of polyethylene filled with polyamide particles coated with silver</a><br><b>I Krupa</b> , G Miková, I Novák, I Janigová, Z Nógellová, F Lednický, J Prokeš<br>European Polymer Journal 43 (6), 2401-2413 (2007)   | <a href="#">52</a>  |

### **Edited books**

Polyolefin Compounds and Materials, Springer International Publishing, Heidelberg, New York, Dordrecht, London, Eds. Mariam Al A AlMaadeed, Igor Krupa (2016)

### **List of papers**

1. Sobolciak, P., Karkri, M., Al-Maadeed, M.A., Krupa, I., Thermal characterization of phase change materials based on linear low-density polyethylene, paraffin wax and expanded graphite, (2016) *Renewable Energy*, 88, pp. 372-382.
2. Didier, G., Mustapha, K., AlMaadeed, M.A., Krupa, I. A new experimental device and inverse method to characterize thermal properties of composite phase change materials, (2015) *Composite Structures*, 133, art. no. 6730, pp. 1149-1159.
3. Sobolciak, P., Mrlík, M., Almaadeed, M.A., Krupa, I, Calorimetric and dynamic mechanical behavior of phase change materials based on paraffin wax supported by expanded graphite, (2015) *Thermochimica Acta*, 617, pp. 111-119.
4. Sobolčiak, P., Abdelrazeq, H., Ouederni, M., Karkri, M., Al-Maadeed, M.A., Krupa, I. The stabilizing effect of expanded graphite on the artificial aging of shape stabilized phase change materials, (2015) *Polymer Testing*, 46, pp. 65-71.
5. Krupa, I., Nógellová, Z., Špitalský, Z., Malíková, M., Sobolčiak, P., Abdelrazeq, H.W., Ouederni, M., Karkri, M., Janigová, I., Al-Maadeed, M.A.S.A., Positive influence of expanded graphite on the physical behavior of phase change materials based on linear low-density polyethylene and paraffin wax (2015), *Thermochimica Acta*, 614, pp. 218-225.
6. AlMaadeed, M.A., Labidi, S., Krupa, I., Karkri, M., Effect of expanded graphite on the phase change materials of high density polyethylene/wax blends, (2015) *Thermochimica Acta*, 600, pp. 35-44.
7. AlMaadeed, M.A., Labidi, S., Krupa, I., Ouederni, M., Effect of waste wax and chain structure on the mechanical and physical properties of polyethylene (2015) *Arabian Journal of Chemistry*, 8 (3), pp. 388-399.
8. Cabeza, L.F., Barreneche, C., Martorell, I., Miró, L., Sari-Bey, S., Fois, M., Paksoy, H.O., Sahan, N., Weber, R., Constantinescu, M., Anghel, E.M., Malikova, M., Krupa, I., Delgado, M., Dolado, P., Furmanski, P., Jaworski, M., Haussmann, T., Gschwander, S., Fernández, A.I., Unconventional experimental technologies available for phase change materials (PCM) characterization. Part 1. Thermophysical properties, (2015) *Renewable and Sustainable Energy Reviews*, 43, pp. 1399-1414.
9. Inés Fernández, A., Solé, A., Giró-Paloma, J., Martínez, M., Hadjieva, M., Boudenne, A., Constantinescu, M., Maria Anghel, E., Malikova, M., Krupa, I., Peñalosa, C., Lázaro, A., Paksoy, H.O., Cellat, K., Vecstaudža, J., Bajare, D., Sumiga, B., Boh, B., Haussmann, T., Gschwander, S., Weber, R., Furmanski, P., Jaworski, M., Cabeza, L.F., Unconventional experimental technologies used for phase change materials (PCM) characterization: Part 2 - Morphological and structural characterization, physico-chemical stability and mechanical properties, (2015) *Renewable and Sustainable Energy Reviews*, 43, pp. 1415-1426. .

10. Špitalský, Z., Kratochvíla, J., Csomorová, K., Krupa, I., Graça, M.P.F., Costa, L.C., Mechanical and Electrical Properties of Styrene-Isoprene-Styrene Copolymer Doped with Expanded Graphite Nanoplatelets, (2015) *Journal of Nanomaterials*, 2015, art. no. 168485, .
11. Krupa, I., Prostředný, M., Špitalský, Z., Krajčí, J., Almaadeed, M.A.S., Electrically conductive composites based on an elastomeric matrix filled with expanded graphite as a potential oil sensing material, (2014) *Smart Materials and Structures*, 23 (12), art. no. 125020
12. Sadasivuni, K.K., Ponnamm, D., Kasak, P., Krupa, I., Al-Maadeed, M.A.S.A.. Designing dual phase sensing materials from polyaniline filled styrene-isoprene-styrene composites, (2014) *Materials Chemistry and Physics*, 147 (3), pp. 1029-1036.
13. Sotomayor, M.E., Krupa, I., Várez, A., Levenfeld, B., Thermal and mechanical characterization of injection moulded high density polyethylene/paraffin wax blends as phase change materials, (2014) *Renewable Energy*, 68, pp. 140-145.
14. Sari-Bey, S., Fois, M., Krupa, I., Iboş, L., Benyoucef, B., Candau, Y., Thermal characterization of polymer matrix composites containing microencapsulated paraffin in solid or liquid state, (2014) *Energy Conversion and Management*, 78, pp. 796-804.
15. Torras, N., Zinoviev, K.E., Camargo, C.J., Campo, E.M., Campanella, H., Esteve, J., Marshall, J.E., Terentjev, E.M., Omastová, M., Krupa, I., Teplický, P., Mamojka, B., Bruns, P., Roeder, B., Vallribera, M., Malet, R., Zuffanelli, S., Soler, V., Roig, J., Walker, N., Wenn, D., Vossen, F., Crompvoets, F.M.H., Tactile device based on opto-mechanical actuation of liquid crystal elastomers, (2014) *Sensors and Actuators, A: Physical*, 208, pp. 104-112.
16. Ilčíková, M., Mrlík, M., Sedláček, T., Chorvát, D., Krupa, I., Šlouf, M., Koynov, K., Mosnáček, J., Viscoelastic and photo-actuation studies of composites based on polystyrene-grafted carbon nanotubes and styrene-b-isoprene-b-styrene block copolymer, (2014) *Polymer (United Kingdom)*, 55 (1), pp. 211-218.
17. Krupa, I., Nógellová, Z., Špitalský, Z., Janigová, I., Boh, B., Sumiga, B., Kleinová, A., Karkri, M., Almaadeed, M.A., Phase change materials based on high-density polyethylene filled with microencapsulated paraffin wax, (2014) *Energy Conversion and Management*, 87, pp. 400-409.
18. Teixeira, S.S., Graça, M.P.F., Dionisio, M., Ilčíková, M., Mosnacek, J., Spitalsky, Z., Krupa, I., Costa, L.C., Self-standing elastomeric composites based on lithium ferrites and their dielectric behavior, (2014) *Journal of Applied Physics*, 116 (22), art. no. 224102, .
19. Trigui, A., Karkri, M., Krupa, I., Thermal conductivity and latent heat thermal energy storage properties of LDPE/wax as a shape-stabilized composite phase change material, (2014) *Energy Conversion and Management*, 77, pp. 586-596.
20. Ilčíková, M., Mosnáček, J., Mrlík, M., Sedláček, T., Csomorová, K., Czaniková, K., Krupa, I., Influence of surface modification of carbon nanotubes on interactions with polystyrene-b-polyisoprene-b-polystyrene matrix and its photo-actuation properties, (2014) *Polymers for Advanced Technologies*, 25 (11), pp. 1293-1300.
21. AlMaadeed, M.A., Nógellová, Z., Mičušík, M., Novák, I., Krupa, I., Mechanical, sorption and adhesive properties of composites based on low density polyethylene filled with date palm wood powder, (2014) *Materials and Design*, 53, pp. 29-37.

22. AlMaadeed, M.A., Nógellová, Z., Janigová, I., Krupa, I., Improved mechanical properties of recycled linear low-density polyethylene composites filled with date palm wood powder, (2014) *Materials and Design*, 58, pp. 209-216.
23. Czaniková, K., Ilčíková, M., Krupa, I., Mičušík, M., Kasák, P., Pavlova, E., Mosnáček, J., Chorvát Jr, D., Omastová, M., Elastomeric photo-actuators and their investigation by confocal laser scanning microscopy, (2013) *Smart Materials and Structures*, 22 (10), art. no. 104001.
24. Czaniková, K., Torras, N., Esteve, J., Krupa, I., Kasák, P., Pavlova, E., Račko, D., Chodák, I., Omastová, M., Nanocomposite photoactuators based on an ethylene vinyl acetate copolymer filled with carbon nanotubes, (2013) *Sensors and Actuators, B: Chemical*, 186, pp. 701-710.
25. Ilčíková, M., Czaniková, K., Mosnáček, J., Mičušík, M., Kasák, P., Omastová, M., Chorvát Jr., D., Krupa, I., Šlouf, M., Koynov, K., Photoactuating of materials designed for haptic aid-tablets for visually impaired people based on styrene-b-isoprene-b-styrene block copolymer nanocomposites, (2013) *Chemik*, 67 (3), pp. 224-231.
26. Kratochvíla, J., Boudenne, A., Krupa, I., Effect of filler size on thermophysical and electrical behavior of nanocomposites based on expanded graphite nanoparticles filled in low-density polyethylene matrix, (2013) *Polymer Composites*, 34 (2), pp. 149-155.
27. Krupa, I., Cecen, V., Boudenne, A., Prokeš, J., Novák, I., The mechanical and adhesive properties of electrically and thermally conductive polymeric composites based on high density polyethylene filled with nickel powder, (2013) *Materials and Design*, 51, pp. 620-628.
28. Czaniková, K., Krupa, I., Ilčíková, M., Kasák, P., Chorvát Jr., D., Valentin, M., Šlouf, M., Mosnáček, J., Mičušík, M., Omastová, M., Photo-actuating materials based on elastomers and modified carbon nanotubes, (2012) *Journal of Nanophotonics*, 6 (1), art. no. 063522.
29. Krupa, I., Cecen, V., Boudenne, A., Križanová, Z., Vávra, I., Srnánek, R., Radnóczi, G., Mechanical Properties and Morphology of Composites Based on the EVA Copolymer Filled with Expanded Graphite, (2012) *Polymer - Plastics Technology and Engineering*, 51 (13), pp. 1388-1393.
30. Novák, I., Popelka, A., Krupa, I., Chodák, I., Janigová, I., Nedelčev, T., Špírková, M., Kleinová, A., High-density polyethylene functionalized by cold plasma and silanes, (2012) *Vacuum*, 86 (12), pp. 2089-2094.
31. Tavman, I., Krupa, I., Omastova, M., Sarikanat, M., Novak, I., Sever, K., Ozdemir, I., Seki, Y., Podhradská, S., Moskova, D., Erbay, E., Guner, F., Effects of conductive graphite filler loading on physical properties of high-density polyethylene composite, (2012) *Polymer Composites*, 33 (7), pp. 1071-1076.
32. Czaniková, K., Špitalský, Z., Krupa, I., Omastová, M., Electrical and mechanical properties of ethylene vinyl acetate based composites, (2012) *Materials Science Forum*, 714, pp. 193-199.
33. Šesták, J., Deanko, P., Knapec, M., Krupa, I., Valentin, M., Process of preparation and application of inorganic-organic nanosol for hydrophobic finish of textile materials [Príprava a overenie aplikácie anorganicko-organických nanosólov pre hydrofóbnú úpravu textílií], (2011) *Vlákna a Textil*, 18 (4), pp. 16-24.

34. Mngomezulu, M.E., Luyt, A.S., Krupa, I., Structure and properties of phase-change materials based on high-density polyethylene, hard Fischer-Tropsch paraffin wax, and wood flour, (2011) *Polymer Composites*, 32 (8), pp. 1155-1163.
35. Krupa, I., Nedelčev, T., Chorvát Jr., D., Račko, D., Lacík, I., Glucose diffusivity and porosity in silica hydrogel based on organofunctional silanes, (2011) *European Polymer Journal*, 47 (7), pp. 1477-1484.
36. Kasák, P., Kroneková, Z., Krupa, I., Lacík, I., Zwitterionic hydrogels crosslinked with novel zwitterionic crosslinkers: Synthesis and characterization, (2011) *Polymer*, 52 (14), pp. 3011-3020.
37. Tlili, R., Cecen, V., Krupa, I., Boudenne, A., Ibos, L., Candau, Y., Novák, I., Mechanical and thermophysical properties of EVA copolymer filled with nickel particles, (2011) *Polymer Composites*, 32 (5), pp. 727-736.
38. Lobotka, P., Kunzo, P., Kovacova, E., Vavra, I., Krizanova, Z., Smatko, V., Stejskal, J., Konyushenko, E.N., Omastova, M., Spitalsky, Z., Micusik, M., Krupa, I., Thin polyaniline and polyaniline/carbon nanocomposite films for gas sensing, (2011) *Thin Solid Films*, 519 (12), pp. 4123-4127.
39. Mngomezulu, M.E., Luyt, A.S., Krupa, I., Structure and properties of phase change materials based on HDPE, soft Fischer-Tropsch paraffin wax, and wood flour, (2010) *Journal of Applied Polymer Science*, 118 (3), pp. 1541-1551.
40. Nedelčev, T., Krupa, I., Hrdlovič, P., Kollár, J., Chorvát Jr., D., Lacík, I., Silica hydrogel formation and aging monitored by pyrene-based fluorescence probes, (2010) *Journal of Sol-Gel Science and Technology*, 55 (2), pp. 143-150.
41. Molefi, J.A., Luyt, A.S., Krupa, I., Investigation of thermally conducting phase-change materials based on polyethylene/wax blends filled with copper particles, (2010) *Journal of Applied Polymer Science*, 116 (3), pp. 1766-1774.
42. Tlili, R., Boudenne, A., Cecen, V., Ibos, L., Krupa, I., Candau, Y., Thermophysical and electrical properties of nanocomposites based on ethylene-vinylacetate copolymer (EVA) filled with expanded and unexpanded graphite, (2010) *International Journal of Thermophysics*, 31 (4-5), pp. 936-948.
43. Molefi, J.A., Luyt, A.S., Krupa, I., Comparison of LDPE, LLDPE and HDPE as matrices for phase change materials based on a soft Fischer-Tropsch paraffin wax, (2010) *Thermochimica Acta*, 500 (1-2), pp. 88-92.
44. Luyt, A.S., Krupa, I., Assumption, H.J., Ahmad, E.E.M., Mofokeng, J.P., Blends of polyamide 12 and maleic anhydride grafted paraffin wax as potential phase change materials, (2010) *Polymer Testing*, 29 (1), pp. 100-106.
45. Krupa, I., Nedelčev, T., Račko, D., Lacík, I., Mechanical properties of silica hydrogels prepared and aged at physiological conditions: Testing in the compression mode, (2010) *Journal of Sol-Gel Science and Technology*, 53 (1), pp. 107-114.

46. Molefi, J.A., Luyt, A.S., Krupa, I., Comparison of the influence of copper micro- and nano-particles on the mechanical properties of polyethylene/copper composites, (2010) *Journal of Materials Science*, 45 (1), pp. 82-88.
47. Tavman, I., Çeçen, V., Özdemir, I., Turgut, A., Krupa, I., Omastova, M., Novak, I., Preparation and characterization of highly electrically and thermally conductive polymeric nanocomposites, (2009) *Archives of Materials Science and Engineering*, 40 (2), pp. 84-88.
48. Molefi, J.A., Luyt, A.S., Krupa, I., Comparison of the influence of Cu micro- and nano-particles on the thermal properties of polyethylene/Cu composites, (2009) *Express Polymer Letters*, 3 (10), pp. 639-649.
49. Micusík, M., Omastova, M., Krupa, I., Prokes, J., Pissis, P., Logakis, E., Pandis, C., Potschke, P., Pionteck, J., A comparative study on the Electrical and mechanical behaviour of multi-walled carbon nanotube composites prepared by diluting a masterbatch with various types of polypropylenes, (2009) *Journal of Applied Polymer Science*, 113 (4), pp. 2536-2551.
50. Krupa, I., Cecen, V., Boudenne, A., Ibos, L., Tlili, R., Novák, I., Omastová, M., Prokeš, J., Pionteck, J., Křižanová, Z., Vávra, I., Properties of conductive nanocomposites based on EVA copolymer and expanded graphite, (2009) *Chemické Listy*, 103 (13), pp. s108-s109.
51. Luyt, A.S., Krupa, I., Phase change materials formed by uv curable epoxy matrix and Fischer-Tropsch paraffin wax, (2009) *Energy Conversion and Management*, 50 (1), pp. 57-61.
52. Cecen, V., Boudenne, A., Ibos, L., Novák, I., Nógellová, Z., Prokeš, J., Krupa, I., Electrical, mechanical and adhesive properties of ethylene-vinylacetate copolymer (EVA) filled with wollastonite fibers coated by silver, (2008) *European Polymer Journal*, 44 (11), pp. 3827-3834.
53. Krupa, I., Cecen, V., Tlili, R., Boudenne, A., Ibos, L., Thermophysical properties of ethylene-vinylacetate copolymer (EVA) filled with wollastonite fibers coated by silver, (2008) *European Polymer Journal*, 44 (11), pp. 3817-3826.
54. Nedelčev, T., Krupa, I., Lath, D., Špírková, M., The leaching of Rhodamine B, Naphthol Blue Black, Metanil Yellow and Bismarck Brown R from silica deposits on polyester and viscose textiles, (2008) *Journal of Sol-Gel Science and Technology*, pp. 1-10.
55. Nedelčev, T., Račko, D., Krupa, I., Preparation and characterization of a new derivative of rhodamine B with an alkoxysilane moiety, (2008) *Dyes and Pigments*, 76 (2), pp. 550-556.
56. Krupa, I., Miková, G., Luyt, A.S., Phase change materials based on low-density polyethylene/paraffin wax blends (2007) *European Polymer Journal*, 43 (11), pp. 4695-4705.
57. Mičušík, M., Nedelčev, T., Omastová, M., Krupa, I., Olejníková, K., Fedorko, P., Chehimi, M.M., Conductive polymer-coated textiles: The role of fabric treatment by pyrrole-functionalized triethoxysilane, (2007) *Synthetic Metals*, 157 (22-23), pp. 914-923.
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61. Krupa, I., Miková, G., Luyt, A.S., Polypropylene as a potential matrix for the creation of shape stabilized phase change materials, (2007) *European Polymer Journal*, 43 (3), pp. 895-907.
62. Novák, I., Števiar, M., Chodák, I., Krupa, I., Nedelčev, T., Špírková, M., Chehimi, M.M., Mosnáček, J., Kleinová, A., Study of adhesion and surface properties of low-density poly(ethylene) pre-treated by cold discharge plasma, (2007) *Polymers for Advanced Technologies*, 18 (2), pp. 97-105.
63. Nedelčev, T., Krupa, I., Csomorová, K., Janigová, I., Rychlý, J., Synthesis and characterization of the new silane-based antioxidant containing 2,6-di-tert-butylphenolic stabilizing moiety, (2007) *Polymers for Advanced Technologies*, 18 (2), pp. 157-164.
64. Luyt, A.S., Krupa, I., Thermal behaviour of low and high molecular weight paraffin waxes used for designing phase change materials, (2007) *Thermochimica Acta*, 467 (1-2), pp. 117-120.
65. Mičušík, M., Omastová, M., Prokeš, J., Krupa, I., Mechanical and electrical properties of composites based on thermoplastic matrices and conductive cellulose fibers, (2006) *Journal of Applied Polymer Science*, 101 (1), pp. 133-142.
66. Novák, I., Krupa, I., Luyt, A.S., Modification of the polarity and adhesive properties of polyolefins through blending with maleic anhydride grafted Fischer-Tropsch paraffin wax, (2006) *Journal of Applied Polymer Science*, 100 (4), pp. 3069-3074.
67. Novák, I., Krupa, I., Luyt, A.S., Improvement of the polarity of polyethylene with oxidized Fischer-Tropsch paraffin wax and its influence on the final mechanical properties, (2005) *Journal of Applied Polymer Science*, 95 (5), pp. 1164-1168.
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2. Sobolciak, P., Karkri, M., Krupa, I., Al Maadeed, M., Storage and release of thermal energy of phase change materials based on linear low density of polyethylene, parafin wax and expanded graphite, (2015) *Proceedings of the TMS Middle East - Mediterranean Materials Congress on Energy and Infrastructure Systems, MEMA 2015*, pp. 395-402.
3. Torras, N., Zinoviev, K.E., Camargo, C.J., Campo, E.M., Campanella, H., Esteve, J., Marshal, J.E., Terentjev, E.M., Omastova, M., Krupa, I., Teplicky, P., Mamojka, B., Burns, P., Roder, B., Vallribera, M., Malet, R., Zuffanelli, S., Soler, V., Roig, J., Walker, N., Wenn, D., Vossen, F., Crompvoets, F.M.H., Nematic opto-mechanical actuators for the fabrication of refreshable tactile systems, (2013) *2013 Transducers and Eurosensors XXVII: The 17th International Conference on Solid-State Sensors, Actuators and Microsystems, TRANSDUCERS and EUROSENSORS 2013*, art. no. 6627111, pp. 1691-1694.
4. Czaniková, K., Krupa, I., Ilčíková, M., Mosnáček, J., Kasák, P., Mičušík, M., Chorvát Jr., D., Omastová, M., Photoactuators on the base of polymeric elastomers and multiwall carbon nanotubes, (2011) *Proceedings of SPIE - The International Society for Optical Engineering*, 8107, art. no. 810707.
5. Valentin, M., Krupa, I., Deanko, P., Šesták, J., An improvement of hydrophobicity of pes and pes/cotton fabrics using sol-gel technology, (2011) *Chemicke Listy*, 105 (15 SPEC. ISSUE), p. 399.
6. Kratochvíla, J., Krupa, I., Špitálský, Z., Prokeš, J., Mechanical and electrical properties of composites based on low density polyethylene and expanded graphite, (2011) *Chemicke Listy*, 105 (15 SPEC. ISSUE).
7. Förster, T., Strohhofer, C., Bock, K., Kasak, P., Danko, M., Kronekova, Z., Nedelcev, T., Krupa, I., Lacik, I., Biosensor for calcium based on a hydrogel optical waveguide with integrated sensor proteins, (2009) *TRANSDUCERS 2009 - 15th International Conference on Solid-State Sensors, Actuators and Microsystems*, art. no. 5285877, pp. 1218-1221.
8. Boudenne, A., Krupa, I., Ibois, L., Thermophysical properties of polyethylene filled with silver coated polyamide particles, (2008) *Proceedings of the 29th International Thermal Conductivity*

Conference, ITCC29 and the Proceedings of the 17th International Thermal Expansion Symposium, ITES17, pp. 229-238.

9. Mosnáček, J., Ilčíková, M., Chorvát, D., Czaniková, K., Krupa, I., Photoactuation behavior of styrene-b-isoprene-b-styrene filled with covalently modified carbon nanotubes, (2012) AIP Conference Proceedings, 1459 (1), pp. 193-195.

### **Another papers**

1. Krupa, I., Some aspects of the modeling of thermal conductivity of polymeric composites (Niektoré aspekty modelovania tepelnej vodivosti polymérnych kompozitov), (2001)Plasty a Kaučuk, 38(9) , 260 – 263. [in Slovak]
2. Krupa, I., Thermal conductivity of thermoplastics filled with electrically conductive carbon black ( Tepelná vodivosť termoplastov plnených elektrovodivými sadzami), (2001) Plasty a Kaučuk, 38(10), 298 – 30. [in Slovak]
3. Krupa, I., Application of selected models to the thermal conductivity of thermoplastics filled with graphite (Aplikácia vybraných modelov na tepelnú vodivosť termoplastov plnených grafitom), (2001) Plasty a Kaučuk, 38(12), 356-358 (2001) [in Slovak]
4. Nedelčev, T., Krupa, I., Hybrid organic-inorganic nanocomposites based on the sol-gel processes, prepared by the use of organofunctional silanes (Hybridné organicko-anorganické nanokompozitné materiály na báze sól-gél procesov, pripravené využitím organofunkčných silánov), (2006) Plasty a Kaučuk, 43(5-6), 13-20 (2006) [in Slovak]
5. Tavman, I., Çeçen, V., Özdemir, I., Turgut, A. , Krupa, I., Omastova, M., Novak, I., Preparation and characterization of highly electrically and thermally conductive polymeric nanocomposites, (2009) Archives of Materials Science and Engineering , 40(2), 84-88.
6. Boudenne, A., Krupa, I., Ibos, L., Thermophysical properties of polyethylene filled with silver coated polyamide particles, Proceedings of the 29th International Thermal Conductivity Conference, ITCC29 and the Proceedings of the 17th International Thermal Expansion Symposium, ITES17 , 229-238 (2008)
7. Hebeish, A., Ramadan, M., Montaser, A.S., Krupa, I., Farag, A.M.,Molecular characteristics and antibacterial activity of alginate beads coated chitosan polyacrylonitrile copolymer loaded by silver nanoparticles(2015) Journal of Scientific Research& Reports, 5(6), 479 - 488.

### **Book Chapters**

1. Handbook of Multiphase Polymer Systems, Eds. Boudenne, A., Ibos, L., Candau, Y. Thomas, S. in Krupa, I., Prokeš, J., Krivka, I., Špitalský, Z. Electrically conductive polymeric composites and nanocomposites, (2011) John Wiley & Sons, Ltd., pp. 425-455.
2. Soreto Teixeira, S., Graça, M., Dionisio, M., Ilčíkova, M., Ilčíkova, M., Krupa, I., Mosnacek, J., Spitalsky, Z., Krupa, I., Costa, L.C., Nanoparticles dispersed in a styrene-isoprene-styrene copolymer matrix, (2015) NATO Science for Peace and Security Series A: Chemistry and Biology, 39, pp. 273-279.

3. A Popelka, I Novak, I Krupa, Polyolefin Adhesion Modifications, Polyolefin Compounds and Materials, Springer International Publishing, Heidelberg, New York, Dordrecht, London, Eds. Mariam Al A AlMaadeed, Igor Krupa, p. 201-230 (2016)
4. CJ Chirayil, J Joy, HJ Maria, I Krupa, S Thomas, Polyolefins in Automotive Industry, Polyolefin Compounds and Materials, Springer International Publishing, Heidelberg, New York, Dordrecht, London, Eds. Mariam Al A AlMaadeed, Igor Krupa, p.265-283 (2016)
5. I Novák, A Popelka, Z Špitalský, I Krupa, S Tavman, Polyolefin in Packaging and Food Industry, Polyolefin Compounds and Materials, Springer International Publishing, Heidelberg, New York, Dordrecht, London, Eds. Mariam Al A AlMaadeed, Igor Krupa, p.181-199 (2016)

## F. TEACHING

1. **CHEM 462:** Introduction to Polymer Science Spring 2013
2. **CHEM 462:** Graduation Project : An improvement of polyethylene/alumina adhesion through physical treatment. Spring 2014.
3. **CHEM 462** Graduation Project: Isolation and characterization of cellulose fibers from date palm leaves. Spring 2014.
4. **MATS 599** (Master thesis of Eng. Haneen Wadi Abdelrazeq): 'Heat absorbers based on recycled polyethylene and paraffin wax for energy storage in bioclimatic buildings". Materials Science and Technology Program. 2015 -2016
5. Supervisor or co-supervisor of four PhD students

## G. RESEARCH PROJECTS

1. Marie Curie fellowship, project G1TR-CT-2000-00040, (2002-2003), **PI**
2. VEGA(2/6114/260): Preparation and properties of organic/inorganic nanocomposites based on sol-gel processes using organofunctional silanes, (2006-2008), **PI**
3. VEGA(2/0063/09): Electrically and thermally conductive polymeric nanocomposites on the base of nanostructuralised graphite, (2009-2011), **PI**
4. APVV (0478-07): Carbon nanocomposites for chemical sensing, (2008-2010), **co-PI**
5. Project 7FP Program: Theme 4 – NMP - Nanosciences, Nanotechnologies, Materials and new Production Technologies, FP7-NMP-2008-SMALL-2, Stage 1 CP-FP 228916-1, NOMS: Nano-Optical Mechanical Systems, (2009-2011), **co-PI**
6. COST Action: Next generation cost effective phase change materials for increased energy efficiency in renewable energy systems in buildings - NeCoE-PCM, 2009-2011, **national representativ**
7. APVV project as the support for "Nano-optical mechanical systems" Call: „FP7-NMP-2008-SMALL-2, (12/2009-8/2012), **PI**
8. P. Cezanne: Development of an implantable bio-sensor for continuous care and monitoring of diabetic patients, 6FP EU, (2006-2010), **member**
9. Thermonano—Low-Temperature Heat Exchangers Based on Thermally-Conducting Polymer Nanocomposites, 7FP EU, (2009-2011), **member**
10. Nanostructural modification of surface of textile materials, APVT- 99-035004, (2005-2007), **member**

11. Research, development and industrial utilization of nanosols for nanostructural modification of textiles, VMSP-P-0023-09, (2009-2011), **member**
12. Application of polymer nanocomposites with low content of graphene in electronical devices (APGRAPHEL), NT ERANet SAV Call 2011, (2012-2014), **co-PI**
13. COST Action MP1105. FLARETEX: Sustainable flame retardancy for textiles and related materials based on nanoparticles substituting conventional chemicals (2012-2014), **national representative**
14. QUUG-CAM-CAM-2013\2014-3: Thermally conductive composites based on linear low density polyethylene filled with metallised date palm wood powder. **LPI**
15. NPRP 4 - 465 - 2 – 173 New Phase Change Materials with Improved Heat Transfer Properties, Qatar National Fundation. (2012-2014). **PI**
16. NPRP 7-1724-3-438: Innovative electrospun conductive spider silk nanofibers for human nerve regrowth. (April 2015 –March 2018). **LPI**
17. UREP 15 - 071 - 2 – 025: Improvement of Tetra Pak containers production by plasma discharge. March 2014 – March 2015. **Mentor**
18. NPRP 8-878-1-172: Rational Design of Environmentally-Friendly Polymer-Carbon Dot Composite Color Light Emitting Diodes for Displays and Solid State Lighting. (2016 – 2019). **LPI**

## H. Awards

The second Best Researcher in Plastics excellence Award 2016 from the Gulf Petrochemicals & Chemicals Association (GPCA) with the entry entitled “Polyolefin based heat absorbers for bioclimatic buildings”.

## CH. Managing activities

- i. In the years 2014, 2015 and 2016 I have been acting as a Member of Organizing committee of Annual Materials Science & Engineering Symposiums which are regularly organised at Qatar University and Texas A&M University at Qatar.
- ii. During last two years I have been managing EU-GCC-STI Program for Cooperation in Science, Technology and Innovation at Qatar University which deals with the development of new framework of a cooperation between Gulf Countries and European Union.
- iii. I actively participate on administrative, managing and training activities at Center for Advanced Materials. I also acts as Head of Strategic Committee at Center for Advanced Materials.

## I. Popularisation activities in media

Recent research activities were recently popularized in the following media.

<http://www.qatar-tribune.com/viewnews.aspx?n=2182531D-35C3-40A9-912B-9BC9098AB6CC&d=20160106>

<http://www.thepeninsulaqatar.com/news/qatar/365122/qu-to-utilise-date-palm-waste-to-make-products>

<http://dohanews.co/qatar-university-experts-research-new-uses-for-palm-tree-waste/>

<http://qa.thetodaypost.com/qatar-university-experts-research-new-uses-for-palm-tree-waste-4273>

<http://www.gulf-times.com/story/473971/QU-CAM-research-on-utilising-palm-waste>