



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Anda Barkane

Type (Academic or Industrial): Academic

Country: Latvia

Leadership position in the COST: Participant on CA18224

Working Group in which you are involved: WG1 and WG3

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Laboratory/Company:

Laboratory of Complex Polymer Systems, Department of Polymer Materials Technology, Faculty of Materials Science and Applied Chemistry, Riga Technical University (RTU).

Laboratory/Company info:

Laboratory of Complex Polymer Systems Department of Polymer Materials Technology, Faculty of Materials Science and Applied Chemistry, Riga Technical University (RTU), which collaborates with other laboratories of the faculty and alongside other RTU departments.

RTU has all necessary facilities (laboratories) and equipment (extrusion, injection, compression, additive manufacturing) to implement this REALHC project. General RTU facilities can be found at <https://www.rtu.lv/en/science/use-science>; polymer synthesis, processing and characterization facilities of Institute of Polymer materials can be found at <http://pmi.rtu.lv>.

Link to the home page of the Laboratory/Company:

General info:

<https://www.rtu.lv/en/university/structure-and-administration/faculties/materials-science-and-applied-chemistry>

List of equipment:

<https://scientificservices.eu/ou/view/institute-of-polymer-materials/25>

Fields of expertise:

Up to date research expertise is connected to (i) preparation and processing of diverse polymeric (nano)composites by melt manufacturing, 3D printing; (ii) synthesis of biobased polymer materials for solving sustainability issues; (iii) novel polymer materials with multifunctional adaptive properties and applications (laser and high energy irradiation modification/fabrication of polymer); (iv) interface properties and aggregation stability of nanoparticle in different media, and self- assembly deposition of nanoparticles (graphene, nanotubes, magnetic nanoparticles for energy conversion, storage and water treatments).

Main publications or patents:

1. Gaidukova, G., Ivdre, A., Fridrihsone, A., Verovkins, A., Cabulis, U., Gaidukovs, S. Polyurethane rigid foams obtained from polyols containing bio-based and recycled components and functional additives (2017) Industrial Crops and Products, 102, pp. 133-143.



2. Gaidukovs, S., Zukulis, E., Bochkov, I., Vaivodiss, R., Gaidukova, G. Enhanced mechanical, conductivity, and dielectric characteristics of ethylene vinyl acetate copolymer composite filled with carbon nanotubes (2018) *Journal of Thermoplastic Composite Materials*, 31 (9), pp. 1161-1180.
3. Bertasius, P., Macutkevicius, J., Banys, J., Gaidukovs, S., Barkane, A., Vaivodiss, R. "Synergy effects in dielectric and thermal properties of layered EVA composites with carbon and Fe₃O₄ nanoparticles". *Journal of Applied Polymer Science*, 2019.
4. Gaidukovs, S., Gaidukova, G., Ivdre, A., Cabulis, U. Viscoelastic and thermal properties of polyurethane foams obtained from renewable and recyclable components (2018) *Journal of Renewable Materials*, 6 (7), pp. 755-763.
5. Gaidukovs, S., Medvids, A., Onufrijevs, P., Grase, L. UV-light-induced curing of branched epoxy novolac resin for coatings (2018) *Express Polymer Letters*, 12 (10), pp. 918-929.

Collaborations:

Luxembourg Institute of Technology
Cranfield University
Catalonia Polytechnical University
Vilnius University
Kaunas Technical University

Facilities:

- Preparation synthesis and processing equipment for (bio-based) polymer material and composite preparation: compounders, extruders, reactors, blenders, microfluidizer, etc.
- Thermal, phys-chem, properties testing facilities: DSC, TGA, TMA, DMA, FTIR, RAMAN, OM, AFM, SEM, etc.