



CSII Dr. Diana Elena CIOLACU

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The research interests cover the areas of: (i) chemistry and physics of cellulose (structure, accessibility and reactivity of cellulose allomorphs; cellulose derivatives); (ii) enzymatic hydrolysis of cellulose; (iii) modification of the surface properties of lignocellulosic fibers by cellulose-binding domain adsorption; (iv) hydrogels based on natural polymers (cellulose, lignin, xanthan, alginate, dextran, pullulan, carrageenan) for drug delivery and tissue engineering; (v) cellulose aerogels for drug delivery applications; (vi) biomaterials based on nanocellulose and lignin nanoparticles for biomedical applications.

Scientific record: Articles published in international peer-reviewed journals (ISI ranked and included in international data bases): **35**; Articles published full-text in international conference volumes: **46**; Books: **3**; Book chapters: **12**; Patents (national): **9 patent**; Research and development projects based on **9 international/bilateral projects** and **20 national research projects**, of which: **4 as project manager**, **1 as MC member** and **25 as member** of the project; **Research stages:** University of Maribor, Faculty of Mechanical Engineering, Maribor, Slovenia (Marie-Curie fellowship TOK, 2008-2009); Mines ParisTech, Centre de Mise en Forme des Matériaux (CEMEF), Sophia Antipolis, France („Hubert Curien-Brancusi” Program fellowship, 2017); University of Maribor, Maribor, Slovenia (2011); University of Barcelona, Faculty of Biology, Barcelona, Spain (2012, 2018); Mines ParisTech, CEMEF, Sophia Antipolis, France (2013). **1062 citations** (without self-citation) in international ISI ranked journals, Hirsch index, **H= 14** in Web of Science databases.

SELECTED SCIENTIFIC ARTICLES

1. Diana Ciolacu, R. Nicu, F. Ciolacu, Cellulose-based hydrogels as sustained drug-delivery systems, *Materials*, 2020, 13(22), 1–37, 5270, *F.I.* = 3.623.
2. I. Rosca, A.R. Petrovici, D. Peptanariu, A. Nicolescu, G. Dodi, M. Avadanei, I.C. Ivanov, A.C. Bostanaru, M. Mares, Diana Ciolacu, “Biosynthesis of dextran by *Weissella confusa* and its In vitro functional characteristics”, *International Journal of Biological Macromolecules*, 107, 1765-1772, 2018, *F.I.* = 5.162.
3. Diana Ciolacu, C. Rudaz, M. Vasilescu, T. Budtova, "Physically and chemically cross-linked cellulose cryogels: Structure, properties and application for controlled release", *Carbohydrate Polymers*, 151, 392-400, 2016, *F.I.* = 7.182.
4. Diana Ciolacu, A.I. Chiriac, F.I.J. Pastor, V. Kokol, "The influence of supramolecular structure of cellulose allomorphs on the interactions with cellulose-binding domain, CBD3b from *Paenibacillus barcinonensis*", *Bioresource Technology*, 157, 14-21, 2014, *F.I.* = 7.539.
5. Diana Ciolacu, A.M. Oprea, N. Anghel, G. Cazacu, M. Cazacu, "New cellulose - lignin hydrogels and their application in controlled release of polyphenols", *Materials Science and Engineering C*, 32, 452-463, 2012, *F.I.* = 5.88.
6. O.M. Paduraru, Diana Ciolacu, R. Darie, C. Vasile, "Synthesis and characterization of polyvinyl alcohol/cellulose cryogels and their testing as carriers for a bioactive component", *Materials Science and Engineering C*, 32, 2508-2515, 2012, *F.I.* = 5.88.