

Stafi i Fakultetit të Mjekësisë, publikon në revistë më impakt faktor 38.6! E tërë kjo fal punës së asistentit të Departamentit të Farmacisë PhD Dardan Hetemi, i cili si autor i parë në bashkëpunim më Profesor Emeritus Jean Pinson, ka arritur që për herë të parë në kuadër të Fakultetit të Mjekësisë të botoj artikullin më titull “Surface functionalization of polymers” në revistën prestigjioze shkencore “Chemical Society Review” e cila publikohet nga “Royal Society of Chemistry”. Në këtë artikull prezentohen të arriturat e fundit sa i përket modifikimit të polimerëve dhe mundësia e aplikimit të tyre në fushën e mjekësisë. Dardan Hetemi aktualisht është asistent në Degën e Farmacisë, Fakultetin e Mjekësisë-Universitetin e Prishtinës “Hasan Prishtina”.

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Surface functionalisation of polymers

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Dardan Hetemi ^{ab} and Jean Pinson ^{*a}

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Many applications of polymers require the functionalisation of their surface for use in sensors, composite materials, membranes, microfluidic and biomedical devices and many others. Such surface modifications endow the surface with new properties independent of those of the bulk polymer. This tutorial review describes the different methods, based on very diverse principles, that are available to perform this surface functionalisation, including plasma and UV irradiation, atomic layer deposition, electrochemistry, oxidation, reduction, hydrolysis, the use of radicals and grafting “on” or “from” polymers. The principles of the different methods are briefly described and many examples are given to highlight the possibilities of the methods and the possible applications. A section is devoted to the surface modification of polymeric nanoparticles.

Key learning points

- (1) What is the interest in modifying the surface of polymers?
- (2) The many methods available for the surface modification of polymers
- (3) The possible applications of surface-modified polymers
- (4) The attachment of polymers on polymers
- (5) The surface modification of polymers in the biomedical field

Introduction

Surface modification is used for two main purposes, either to protect a material that does not resist properly under usual

Polymers are present everywhere in our daily life; their success is due to their different properties, such as low cost, interesting mechanical properties (polypropylene (PP) is used for car bumpers, and polyamide 66 for gears), high stability



Dardan Hetemi and Jean Pinson

Dardan Hetemi is currently a teaching assistant at Pharmacy Department, Medical Faculty at the University of Prishtina – “Hasan Prishtina”. He graduated from the same university in 2008 and received his degree of European Master in Quality in Analytical Laboratories (EMQAL) in 2012 from University of Barcelona and University of Bergen. He obtained his PhD degree in 2016 from Université Paris Diderot working with Emeritus Professor Jean Pinson, Catherine Combellas and Fetah Podvorica. His research interests lie in the modification of surfaces, biopolymers, nanomaterials and drug carriers.

Jean Pinson is an Emeritus Professor at Université Paris Diderot after a full career in the same University, but also spent five years in a start-up company Alchimier, now Aveni. He is interested in electrochemistry and surface chemistry. He developed the modification of surfaces with amines, diazonium salts, and alkyl halides.

^a Univ Paris Diderot, Sorbonne Paris Cite, ITODYS, UMR 7086 CNRS, 15 rue J-A de Baïf, 75013 Paris Cedex 13, France.

^b Pharmacy Department, Medical Faculty, University of Prishtina “Hasan Prishtina”, Rr. “D’eshmor’et e Kombit” p.n., 10000 Prishtina, Kosovo