

3rd Annual Conference and Expo on

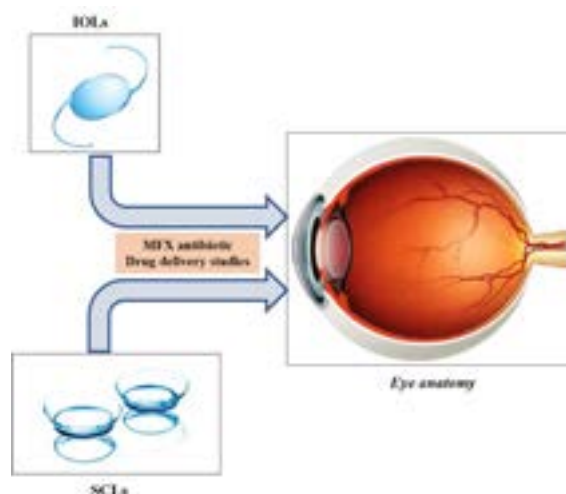
BIOMATERIALS

March 05-06, 2018 | Berlin, Germany

Polymeric materials for ophthalmological applications

M Helena Gil, A Jorge Guiomar, Patrícia Alves and Filipa A M M Gonçalves
University of Coimbra, Portugal

Nowadays, both synthetic and natural polymeric materials have been applied in the ophthalmologic area. In our group some work has been done on the development of intraocular lenses (IOLs) as well as on soft contact lenses (SCLs) for endophthalmitis prophylaxis in cataract surgery and implantable disks for glaucoma treatment. The use of ocular controlled drug delivery systems after ocular surgery is being used as an alternative to the usual eye drop administration. The development of SCLs based on acrylic monomers for this purpose is the subject of our more recent study. Some membranes were prepared by bulk polymerization using different monomers, such as ethylhexyl methacrylate, methyl methacrylic acid and a crosslinking agent, and were characterized physical and chemically. To increase their performance as drug delivery systems, the surface membranes were also modified by using either graft copolymerization or plasma treatment. All the copolymers were loaded with several ophthalmologic drugs and used for drug release studies.



Recent publications

1. Vieira A P, Pimenta A F, Silva D, Gil M H, Alves P, Coimbra P, Mata J L, Bozukova D, Correia T R, Correia I J, Serro A P and Guiomar A J (2017) Surface modification of an intraocular lens material by plasma-assisted grafting with 2-hydroxyethyl methacrylate (HEMA), for controlled release of moxifloxacin. *European Journal of Pharmaceutics and Biopharmaceutics* 120:52-62.
2. Moura M J, Brochado, J Gil, M H and Figueiredo M M (2017) *In situ* forming chitosan hydrogels: Preliminary evaluation of the *in vivo* inflammatory response. *Materials Science & Engineering C-Materials for Biological Applications* 75: 279-285.
3. Carreira A S, Teixeira R F A, Beirido A, Vieira R V, Figueiredo M M and Gil M H (2017) Preparation of acrylic based microcapsules using different reaction conditions for thermo-regulating textiles production. *European Polymer Journal* 93:33-43.
4. Ferreira P, Alves P, Coimbra P and Gil MH (2015) Improving polymeric surfaces for biomedical applications: a review. *Journal of Coatings Technology and Research* 12:463-475.
5. Carreira A S, Ferreira P, Ribeiro M P, Correia T R, Coutinho P, Correia I J and Gil M H (2014) New drug-eluting lenses to be applied as bandages after keratoprosthesis implantation. *International Journal of Pharmaceutics* 477:218-226.

3rd Annual Conference and Expo on

BIOMATERIALS

March 05-06, 2018 | Berlin, Germany

Biography

M Helena Gil is currently Professor at Chemical Engineering Department, University of Coimbra. She has a large experience in the preparation and characterization of polymeric materials to be applied in biomedical or industry fields. Research in polymer chemistry within her group includes also preparation and characterization of hydrogels, immobilization of biological compounds, biosensors and drug delivery systems. She is author or co-author of more than 200 scientific papers on international reviews and of more of 10 book chapters. M Helena Gil have supervised more than 60 MSc students and more than 20 PhD students, with 30 research fellows under the framework of several national and international projects.

hgil@eq.uc.pt

Notes: