The ways proteins compete for the surface of biomaterials and change conformation are believed to be important for the host response to implants. It is possible to elucidate information on packing and any induced conformational change by making use of different fluorescence techniques on fluorescently labelled proteins. Employing probe-probe resonance energy transfer (RET) allows inter and intra protein interactions to be distinguished. Homo resonance energy transfer (hRET) avoids many problems with having two different probes and means that labelling and subsequent purification can be done in one step.

In this study we made use of both steady state and time-resolved fluorescence techniques and imaging to study FITC (fluorescein isothiocyanate) tagged BSA (bovine serum albumin) adsorption to various (fluorescent) polymeric biomaterials (poly-caprolactone, starch polycaprolactone and starch ethylenevinylalcohol) using titania coated glass as a control. With the combination of both steady state anisotropy and lifetime methods applied on different dilutions (labelled:unlabelled and label:protein) of FITC-BSA differences in packing on the surfaces was determined. The anisotropy data indicated inter protein hRET, more clearly on the control. Dilution of over-labelled proteins in unlabelled seems to be easiest way to make sure the signal is from intraprotein interactions, but polymer autofluorescence requires addressing.

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**(OP 18) Application of Fluorescence Techniques to the Study of Protein Adsorption and Packing on Biomaterial Surfaces**

J. Benesch[1,2], G. Hungerfod[3], K. Suhling[3], C. Tavares[4], J.A. Lewitt[3], J.F. Mano[1,2], R.L. Reis[1,2]

[1]3B's Research Group—Biomaterials, Biodegradables and Biomimetics, Department of Polymer Engineering, University of Minho, Braga, Portugal
[2]IBB–Institute for Biotechnology and Bioengineering, PT Government associated lab, Braga, Portugal
[3]Physics Department, King's College, London, United Kingdom
[4]Physics Department, University of Minho, Guimarães, Portugal