

P020 Fabricating a heparin gradient

**D.E. Robinson¹, A. Marson³, A.J. Day³, D.J. Buttle²,
R.D. Short¹**

*¹Department of Engineering Materials and ²Medical School,
University of Sheffield, ³ Wellcome Trust Centre for Cell-
Matrix Research, University of Manchester.*

Gradients of chemical functionalities may be fabricated by plasma polymerisation using a moving slot, to separate plasma from the collecting substrate and simultaneous control of gas ratios¹. This method allows flexibility in terms of shape of the gradient and the potential for fabrication onto a wide range of substrates, e.g. plastics, glass and metals.

Heparin was incubated on a gradient of plasma-polymerised allyl amine, and a gradient of heparin was produced as demonstrated by X-ray photoelectron spectroscopy. Moreover, the bound heparin was shown to be functionally competent as demonstrated by binding of heparin binding proteins such as TSG-6². Sulphated glycosaminoglycans are involved in many biological processes. The fabrication of a heparin gradient provides an important research tool for the study of these processes *in vitro*.