

Support Information for the publication of the manuscript entitled

**Modulation of the Biological Response to Surfaces through the Controlled
Deposition of 3D Polymeric Surfactants**

Valentina Cuzzucoli Crucitti^{a,b,*}, Hadi Hajiali^{c,+}, Adam A. Dundas^b, Vineetha Jayawarna^d,
Dario Tomolillo^e, Iolanda Francolini^f, Claudia Vuotto^e, Manuel Salmeron-Sanchez^d, Matthew
J. Dalby^g, Morgan Alexander^c, Ricky D. Wildman^{a,b}, Felicity R.A.J. Rose^{c,*}, Derek J.
Irvine^{a,b,*}

^a Centre for Additive Manufacturing, Faculty of Engineering, University of Nottingham,
Nottingham, NG7 2RD, UK

^b Department of Chemical and Environmental Engineering, Faculty of Engineering,
University of Nottingham, Nottingham, NG7 2RD, UK

^c School of Pharmacy, Nottingham Biodiscovery Institute, Faculty of Science, University of
Nottingham, Nottingham, NG7 2RD, UK

^d Centre for the Cellular Microenvironment, School of Engineering, Advanced Research
Centre, University of Glasgow, Glasgow, G11 6EW, United Kingdom

^e Neuromicrobiology Unit, IRCCS Fondazione Santa Lucia, Rome, Italy.

^f Dept of Chemistry, Sapienza University of Rome, Piazzale A. Moro 5, 00185 Rome, Italy

^g Centre for the Cellular Microenvironment, School of Molecular Biosciences, College of
Medical, Veterinary and Life Sciences, Advanced Research Centre, University of Glasgow,
Glasgow, G11 6EW, United Kingdom

⁺ Current address: Healthcare Technologies Institute, Institute of Translational Medicine,
School of Chemical Engineering, University of Birmingham, Birmingham, B15 2TT

Corresponding Authors E-mail: Valentina.CuzzucoliCrucitti1@nottingham.ac.uk
Felicity.Rose@nottingham.ac.uk and Derek.Irvine@nottingham.ac.uk,

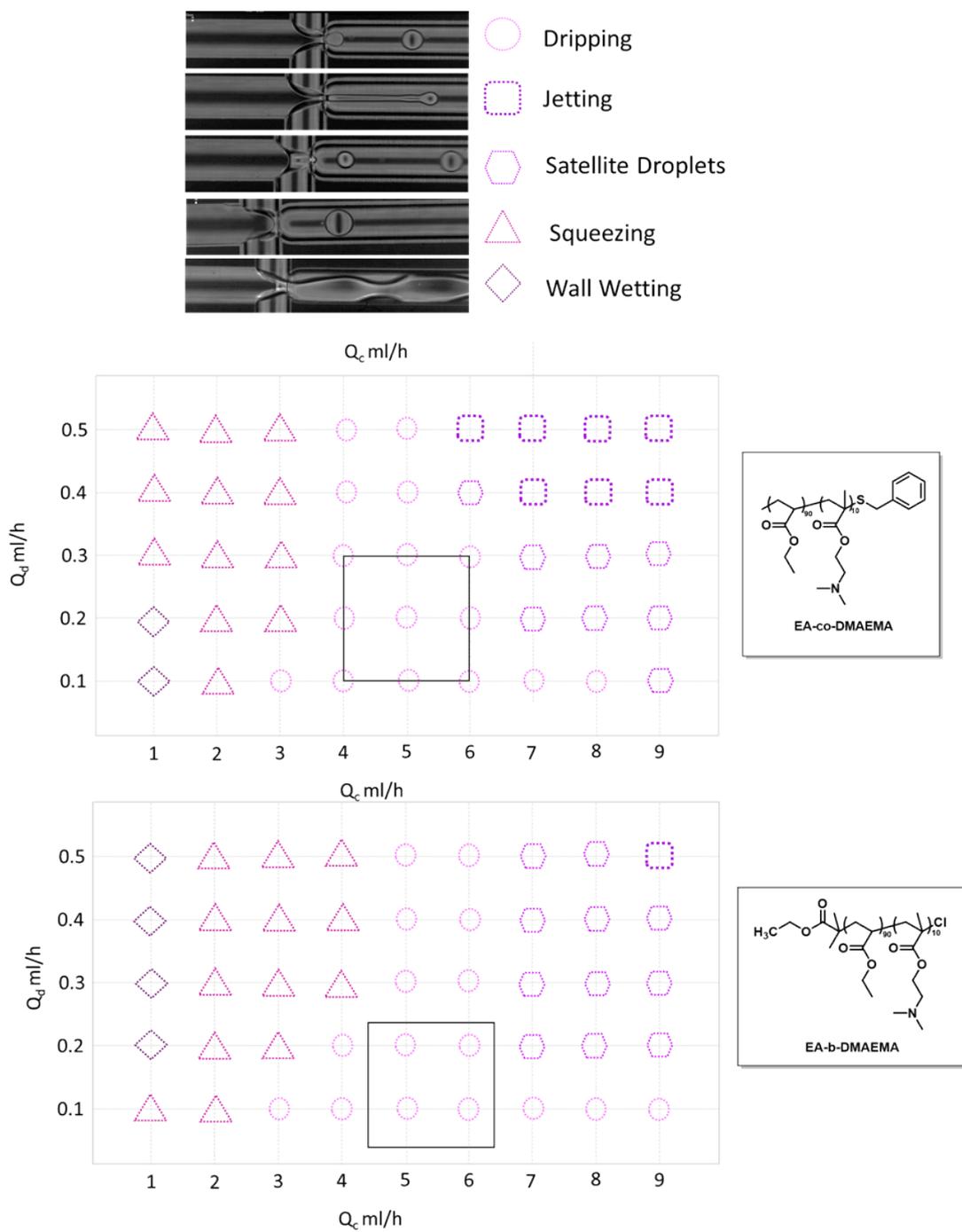


Figure S1: Flow diagram of an O/W microfluidics system with HMDA core material and EA-co-DMAEMA and EA-b-DMAEMA. In the diagram: ○ denotes idealistic dripping behaviour, □ denotes jetting behaviour, ⬡ denotes formation of satellite droplets, ◇ denotes flow rates which caused wall wetting events and △ denotes large dripping. The black squares denote the region of flow rates that produces monodisperse emulsions. Images show examples of dripping, jetting, satellite droplet formation and wall wetting events, respectively.

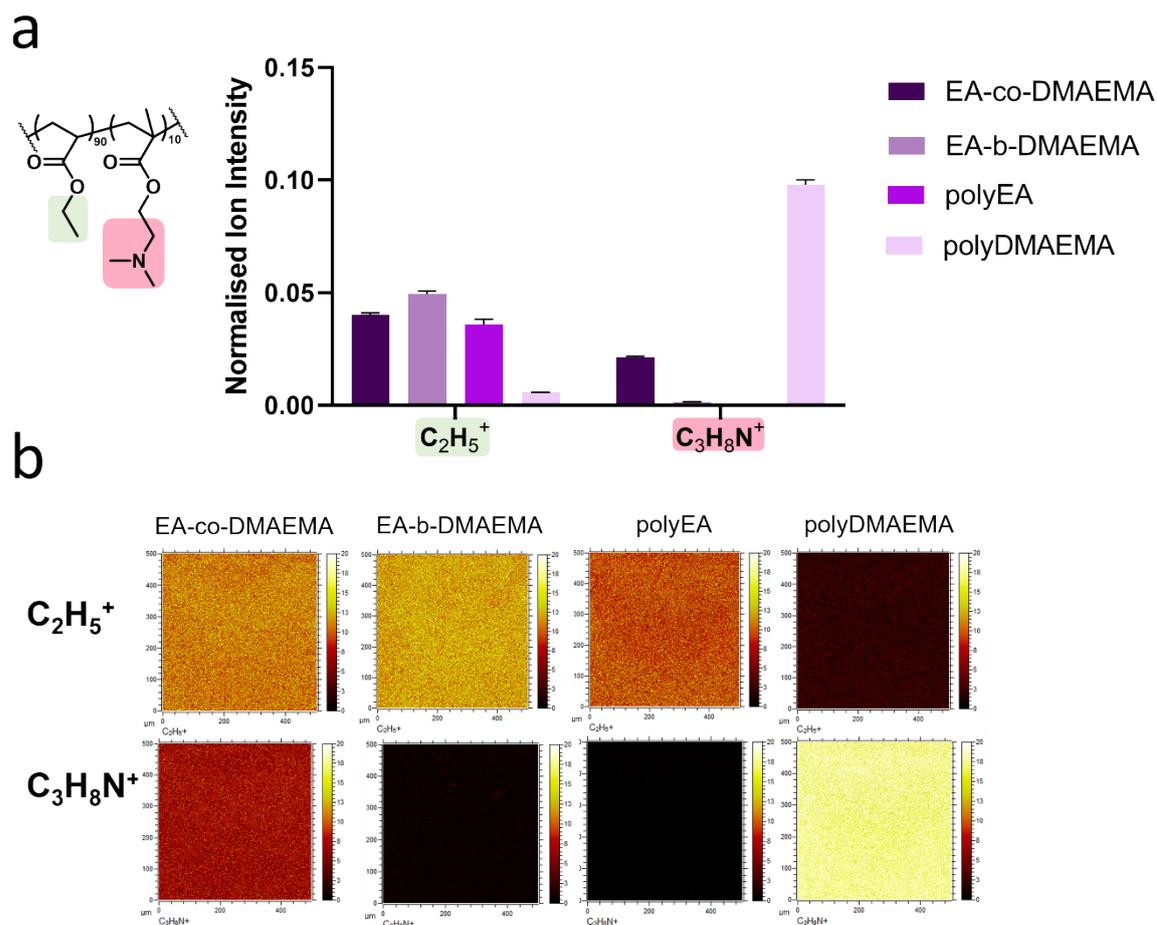


Figure S2: ToF-SIMS data showing (a) intensities and the (b) related images of the key ions associated to EA:DMAEMA comonomers within the surfactant structure when coated onto 2D coverslips compared to the intensity of the same ions present in the homopolymers polyEA and polyDMAEMA spectra ($N=1$, $n=3$; error bars represent SD).