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Editorial Board

Journal of Visualized Experiments (JoVE) Bioengineering

One Alewife Center, Suite 200

Cambridge, Massachusettes 02140

Dear JoVE Bioengineering Editorial Board,

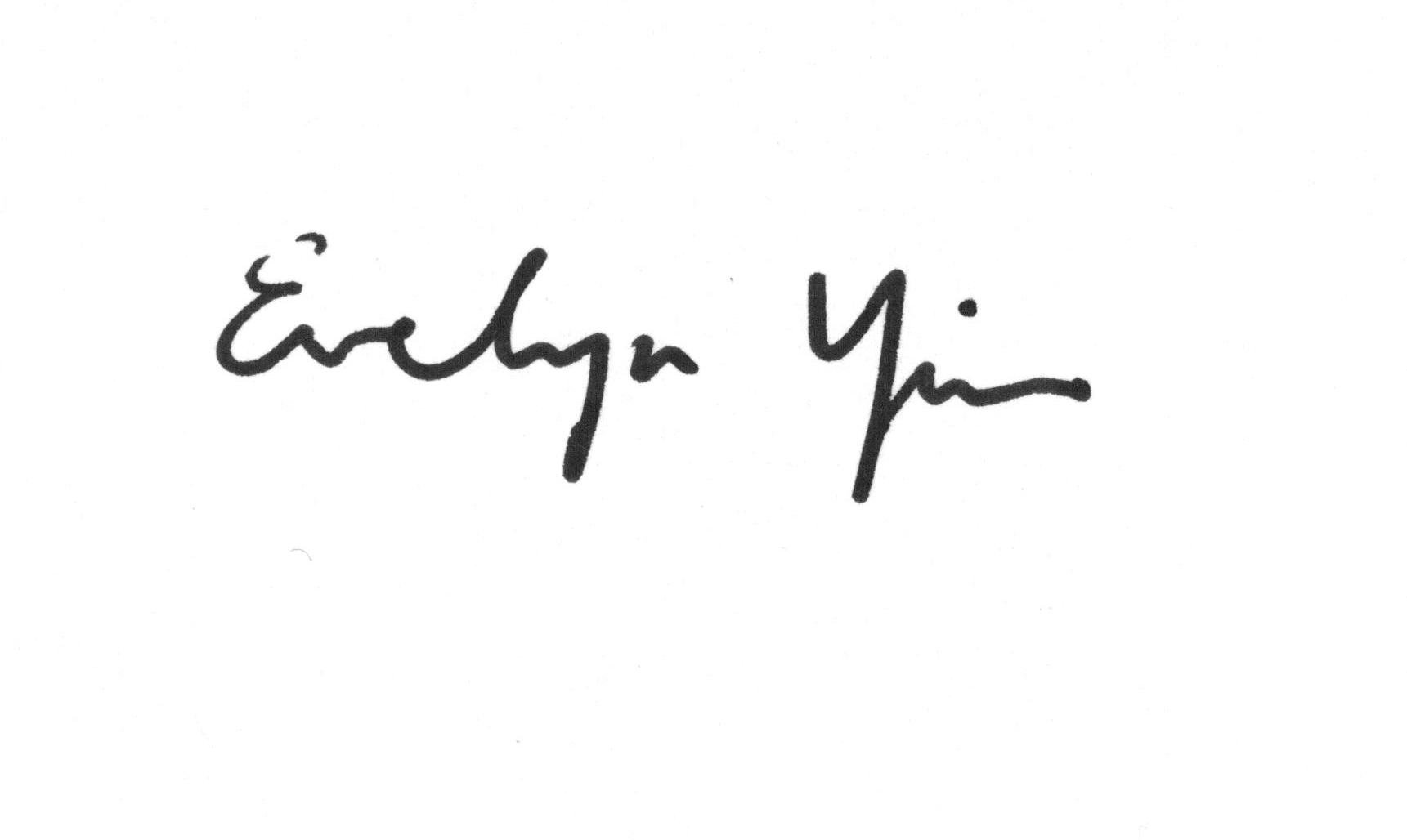
  We are pleased to submit our original research article titled “Composite scaffolds of interfacial polyelectrolyte fibers for temporally controlled release of biomolecules” for publishing in Journal of Visualized Experiments. We thank Dr. Eric Veien for his kind invitation to submit our work for consideration in JoVE.

In tissue engineering and regenerative medicine, the ultimate aim is to provide a proper structural and biological environment that mimics the natural physiological milieu. While numerous scaffolds have shown the structural capacity to sustain adherent cell growth, they lack a controlled biochemical microenvironment that can stimulate sustained delivery of protein-based growth factors. Methodologies for protein delivery waste expensive growth factors due to lack of encapsulation efficiency and deterioration of bioactivity after release. Interfacial polyelectrolyte complexation (IPC) fibers represent a simple and efficient way to deliver biomolecules such as growth factors. Through occurrence in aqueous and ambient conditions, IPC fibers also help to retain biomolecule activity. IPC fibers can be combined with hydrophilic and hydrophobic polymeric systems to create scaffolds with sustained growth factor delivery. Using this simple and flexible methodology, we show how to create different composite scaffolds by embedding IPC fibers in polysaccharide hydrogel and hydrophobic polycaprolactone scaffold. Using this method, sustained release of two bioactive factors, vascular endothelial growth factor and nerve growth factor, can be achieved. These composite scaffolds of polycaprolactone and IPC fibers can also contain both topography and sustained biochemical release to create a synergistic cellular environment.

We believe that this versatile and simple methodology of creating holistic scaffolds that recapitulate the cellular microenvironment would be more beneficial to the scientific community when shown in the visual format of JoVE.

If further information is needed during the review, I would prefer to be contacted by email ([eyim@nus.edu.sg](mailto:eyim@nus.edu.sg)). Thank you for your consideration.

Yours sincerely,



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