CV	
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Major Field:	Microfluidics, DNA Nanosensors, Single Cell Analysis
Brief Resume and Biography	Yi-Ping (Megan) Ho is currently an Associate Professor and the Vice Chairman (Research) in the Department of Biomedical Engineering at The Chinese University of Hong Kong. She received her B.S. and M.S. in Power Mechanical Engineering from National Tsing-Hua University, Taiwan. She received her Ph.D. in Mechanical Engineering from the Johns Hopkins University. After her postdoctoral training at the Department of Biomedical Engineering in Duke University, she received the Young Elite Researcher Award from the Danish Research Council and started her independent career in the Interdisciplinary Nanoscience Centre and the Department of Molecular Biology and Genetics at Aarhus University in Denmark. She has published 83 peer-reviewed journal articles, 7 book chapters, 83 conference papers, edited 1 book and holds 4 granted patents. The results that she presented have been recognized internationally by the American Society of Gene Therapy and Controlled Release Society. Her research is focused on developing nanosensors and microfluidics as diagnostic tools for single cell analysis that may potentially expand the capacity of disease detection and treatment evaluation.

Abstract	
Title	Bead-Templated Droplet Digital Polymerase Chain Reaction (bdPCR) as for the Detection of Rare Nucleic Acid Targets
Abstract	Droplet digital polymerase chain reaction (ddPCR) has been widely applied for the detection of rare targeted nucleic acids, for the minimized co-occurrence of PCR inhibitors and targeted nucleic acids in the micron-sized water-in-oil (W/O) droplets. The success of existing ddPCR relies on the controlled production of W/O microdroplets, typically through droplet microfluidics, which are often criticized by the associated high test-costs and complex processing steps. Motivated by the lingering technical challenges in ddPCR, the low cost and convenient hydrogel beads-templated emulsification is developed, as an alternative approach to produce monodispersed hydrogel-based microreactors within minutes *via* vortexing. The developed novel and facile beads-templated digital PCR (bdPCR) allows an *in situ* amplification of targeted nucleic acids with a similar limit of detection compared to ddPCR. This presentation will highlight our recent advancement of bdPCR and an integration with a customized detection platform. The bdPCR platform is shown promising for the detection of targeted nucleic acids without the demand of a microfluidic chip and accessories. We have also extended the platform for the assessment of enzymatic activities. Taken together, the developed hydrogel based platform is expected to serve as an accessible tool for the analysis of rare targeted species.