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- 國立台灣大學 學士，民國六十七年
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- B.S. National Taiwan University, ROC, 1978
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## 主要研究領域

### ■ 幹細胞培養及應用

體外培養增殖幹細胞為最新科技平台，造血幹細胞之培養及軟骨細胞分化為目前之重點。

### ■ 奈米微粒及水膠釋藥系統

抗癌藥物、生長因子及細胞之微粒劑型及溫度敏感性水膠系統，特別是製備程序及釋放行為方面。

### ■ 聚酸酐及聚胺基酸材料之應用

生物可分解性材料聚酸酐系列之合成及應用，特別在組織工程及藥物釋放上之性質為研究重點。

### ■ 軟硬骨組織工程

針對軟骨與硬骨組織修復之各項專題做探討。

## Main Research Interests

### ■ Stem cell expansion and applications

Ex vivo expansion of stem cells provides many applications in tissue engineering, cell therapy and gene therapy. We are studying hematopoietic stem cell cultivation, in terms of medium design and cellular growth on patterned surfaces.

### ■ Nanoparticle/hydrogel drug delivery systems

Nanoparticle and thermal sensitive hydrogel delivery systems for drugs or cells are developed. Process conditions and the drug release behavior are studied.

### ■ Biomedical application of poly(anhydride) and poly (amino acids)

Bioabsorbable materials are useful in tissue engineering and in drug delivery. Various poly(anhydride) and poly(amino acids) copolymers are synthesized, characterized and tested for the degradation/drug releasing behavior, in terms of the composition and other polymer physics parameters.

### ■ Tissue engineering of cartilage and bone

Repair of cartilage or bone defects are studied in various different aspects.

## 代表作 (Selected Publications)

- Peng, S., Liu, H.X., Ko, C.Y., Yang, S.R., Hung, W.L., **Chu, I.M.**, "Photo-crosslinked PLA-PEG-PLA / PCL-PEG-PCL dual-component hydrogel with tunable degradation and cell-carrying ability", *J. Tissue. Eng. Regen. Med.* 11, 669-678 (2017)
- Ku, K.L., Grøndahl, L., Dao, H., Du, Ke, Puttick, S., Lai, P.L., Peng, H., **Chu, I.M.**, Whittaker, A.K. "In vitro degradation study of polyanhydride copolymers / surface grafted hydroxyapatite composites for bone tissue application", *Polym. Degrad. Stab.*, 140, 136-146 (2017)
- Peng, S., Lai, Z.T., Hong, D.W., **Chu, I.M.**, Lai, P.L. "Controlled release of through neutralization reaction within a methoxy(polyethylene glycol)- polyester hydrogel", *J. Appl. Biomater. Funct. Mater.*, 15, e162-e169 (2017)
- Lin, J.Y., Lai, P.L., Lin, Y.K., Peng, S., Chen, J.N., **Chu, I.M.**, "A poloxamer-polypeptide thermosensitive hydrogel as a cell scaffold and sustained release depot", *Polym. Chem.*, 7, 2976-2985 (2016)
- Peng, S., Lin, J.-Y., Cheng, M.-H., Wu, C.-W., and **Chu, I. M.**, "A cell-compatible PEO-PPO-PEO (Pluronic®)-based hydrogel stabilized through secondary structures", *Mater. Sci. Eng. C*, 69, 421-428 (2016)
- Ko, C.Y., Ku, K.L., Yang, S.R., Lin, T.Y., Peng, S., Peng, Y.S., Cheng, M.H., **Chu, I.M.**, "In vitro and in vivo co-culture of chondrocytes and bone marrow stem cells in photo-crosslinked PCL-PEG-PCL hydrogels enhances cartilage formation", *J. Tissue. Eng. Regen. Med.* 10, E485-E496 (2016)