

**Name:** Feng-Yun Jimmy Huang

**Telephone:** 04-22391647 ext 3005

**Mail:** fyhuang@ctust.edu.tw

**Education :**

National Tsing Hua University, Taiwan (2008/9 – 2015/6)

Doctor of Philosophy, Department of Biomedical Engineering and Environmental Sciences

Mentors: Prof. Jem-Mau Lo and Chien-Wen Chang

Dissertation: Theranostic evaluation of  $^{188}\text{Re}$ -Labeled PEGylated nanoliposome in glioma bearing rat model

Central Taiwan University of Science and Technology, Taiwan (2005/9 – 2008/1)

Master of Science, Department of Medical Imaging and Radiological Science

Mentors: Prof. Bor-Tsung Hsieh, Ling-Kuen Huang and Chang-Shu Tsai

Thesis: Study of thermosensitive chitosan-based hydrogel for the delivery of therapeutic radio and chemo pharmaceuticals

Tzu Chi University of Science and Technology, Taiwan (2001/9 – 2005/6)

Bachelor of Science, Department of Medical Imaging and Radiological Science

**Career Experience :**

University of Texas Southwestern (UTSW) Medical Center, Dallas, TX, USA (2019/6 – 2020/10)

Postdoctoral Fellow

Mentor: Prof. Xiankai Sun

- CGMP Production of ANDA PET drugs ( $^{18}\text{F}$ -FDG and  $^{13}\text{N}$ - $\text{NH}_3$ ) and IND radiotracers ( $^{11}\text{C}$ -Acetate,  $^{18}\text{F}$ -FLT,  $^{18}\text{F}$ -AV1451,  $^{64}\text{Cu}$ - $\text{CuCl}_2$ ,  $^{68}\text{Ga}$ -PSMA-11,  $^{89}\text{Zr}$ -Atezolizumab) for clinical research
- Radiosynthesis of radiometal-based novel tracers for PET imaging of kidney cancer and neurodegenerative diseases and immune checkpoint blockade therapy – Namely,  $^{64}\text{Cu}$ ,  $^{68}\text{Ga}$ ,  $^{89}\text{Zr}$ -labeling of biomolecules such as oligonucleotides, peptides, and monoclonal antibodies via conjugation with bifunctional chelating agents
- Multimodality imaging evaluation (SPECT/CT, PET/CT and MRI) of the radiotracers in the corresponding animal models and quantitative data analysis

Nuclear Science and Technology Development Center, NTHU, Taiwan (2018/8 – 2019/6)

Assistant Researcher

- Development of radioanalytical technique for difficult-to-measure radionuclides from low-level radwaste such as  $^{14}\text{C}$  and  $^{63}\text{Ni}$
- Investigation of background radiation in the production area of hokutolite in Taiwan

Nuclear Science and Technology Development Center, NTHU, Taiwan (2016/11 – 2018/7)

Postdoctoral Fellow

Mentor: Dr. Jiunn-Hsing Chao

- Estimation of radiation dose from naturally occurring radionuclides in soil

- Environmental radiation monitoring including samples from water, air, plant and soil via  $\gamma$  radionuclide analysis (HPGe),  $\beta$  radionuclide analysis (LSC) and gross  $\alpha/\beta$  analysis (proportional counter)

#### Courses Taught :

- Radiopharmaceuticals
- Principle and Instrumentation of Nuclear Medicine
- Nuclear Medicine Technology and Techniques
- Molecular Imaging Pharmaceuticals
- Health Physics

#### Professional Fields :

Radiochemistry and nuclear medicine radiopharmaceuticals

- Operation of automated radiosynthesizers for clinical production of PET drugs including GE TRACERlab modules (FX-FN, FXM/FXMeI, FXC-PRO, FXN-PRO), GE FASTlab, and TRASIS modules (miniAIO and AllinOne)
- Production of metal radionuclides (e.g.,  $^{64}\text{Cu}$ ,  $^{68}\text{Ga}$ , and  $^{89}\text{Zr}$ ) via solid-target processing system (COMECER ALCEO) and their radiosynthesis for preparation of PET molecular imaging probes
- Preparation of SPECT tracers including  $^{99\text{m}}\text{Tc}$ ,  $^{125/131}\text{I}$ , and  $^{188}\text{Re}$ -labelled molecular imaging probes for research

Translational research

- Creating animal tumor models (xenograft, patient-derived xenograft, orthotopic) including glioma (GBM), hepatocellular carcinoma (HCC), breast carcinoma, renal cell carcinoma (RCC), colon cancer
- Conducting various animal experiments including anesthesia, surgery, drug administration (SC, IM, IC, IT, IV), biodistribution, metabolism, radiation dosimetry (MIRD), pharmacokinetic (PK), maximum tolerance dose (MTD), autoradiography, therapeutic efficacy (treatment)
- Operating non-invasive small animal imaging including PET/CT, SPECT/CT, MRI, Ultrasound and IVIS

Health physics

- Handling and maintaining TAF (ISO/IEC 17025) radioactivity measuring laboratory
- Radiation detection and measurement including  $\alpha$ ,  $\beta$  and  $\gamma$ -decay radionuclides
- Radioactive waste management and radioanalytical techniques
- Guidance of radiation protection and safety

Nanomedicine and drug delivery system

- Preparation of smart liposome as drug delivery system, as well as molecular imaging tracer
- Preparation of HSA-based nanoparticle as drug delivery system, as well as molecular imaging tracer
- Preparation of chitosan-based hydrogel as drug delivery system for internal radionuclide therapy

#### Research Interests :

- Theranostic Radiopharmaceuticals
- ImmunoSPECT/PET Imaging

- Nanopharmaceuticals
- Radioanalytical and Nuclear Chemistry
- Radiation Detection and Measurement

## Publications :

### Publications

1. Chao JH, Ting CY, **Huang FYJ**, Tsai TL, Liu CC, Liu WC, Kang LC, Chin CY, Lin CC. Background radiation in the production area of hokutolite in Taiwan. *Radiation Physics and Chemistry*. 2020; 172:108769. (SCI) (IF: 2.226; Ranking: 4/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
2. **Huang FYJ**, Hsu FY, Chen TY and Chao JH. Radiation Dose due to Naturally Occurring Radionuclides in Soil from Varying Geological Environment. *Health Phys*. 2019; 116:657-663. (SCI) (IF: 0.853; Ranking: 25/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
3. **Huang FYJ**, Hung CC, Chang CW, Chao JH and Hsieh BT. Evaluation of injectable chitosan-based co-cross-linking hydrogel for local delivery of <sup>188</sup>Re-LIPO-DOX to breast-tumor-bearing mouse model. *Anticancer Res*. 2018; 38: 4651-4659. (SCI) (IF: 1.994; Ranking: 203/244; Scope: ONCOLOGY)
4. **Huang FYJ**, Su TY, Tsai TL, Chao JH. "Analysis of <sup>63</sup>Ni in radwastes by extraction chromatography and radiometric techniques". *J Radioanal Nucl Chem* 2017; 314:879-886. (SCI) (IF: 1.137; Ranking: 21/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
5. Su TY, **Huang FYJ**, Chao JH. "Rapid determination of Ni-63 by automated solid phase extraction", *Taiwanese Journal of Applied Radiation and Isotopes* 2016; 12:1347-1352.
6. Chen WJ, **Huang FYJ**, Chang HY, Lee TW, Chang CW, Lo JM. "The novel preparation of <sup>99m</sup>Tc(I)-Labeled human serum albumin (HSA) nanoparticles as a SPECT imaging agent", *J. Radioanal. Nucl. Chem*. 2016; 307: 141-150. (SCI) (co-first author) (IF: 1.137; Ranking: 21/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
7. **Huang FYJ**, Lee TW, Chang CH, Chen LC, Hsu WH, Chang CW, Lo JM. "Evaluation of <sup>188</sup>Re-Labeled PEGylated nanoliposome as a radionuclide therapeutic agent in an orthotopic glioma-bearing rat model", *Int. J. Nanomed.*, 2015; 10:463-473. (SCI) (IF: 5.115; Ranking: 24/270; Scope: PHARMACOLOGY & PHARMACY)
8. Chung WJ, Cui Y, **Huang FYJ**, Tu TH, Yang TS, Lo JM, Chiang CS and Hsu IC. "<sup>99m</sup>Tc pyrene derivative complex causes double-strand breaks in dsDNA mainly through cluster-mediated indirect effect in aqueous solution", *PLoS ONE* 2014; 9(9): e108162. (SCI) (IF: 2.740; Ranking: 27/71; Scope: MULTIDISCIPLINARY SCIENCES)
9. **Huang FYJ**, Gan GY, Lin WY, Huang LK, Luo TY, Hong JJ, Hsieh BT. "Investigation of the local delivery of an intelligent chitosan-based <sup>188</sup>Re thermo-sensitive in situ-forming hydrogel in an orthotopic hepatoma-bearing rat model", *J. Radioanal. Nucl. Chem*. 2014; 299: 31-40. (SCI) (IF: 1.137; Ranking: 21/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
10. **Huang FYJ**, Chen WJ, Lee WY, Lo ST, Lee TW, Lo JM. "In vitro and in vivo evaluation of lactoferrin-conjugated liposomes as a novel carrier to improve the brain delivery", *Int. J. Mol. Sci*. 2013; 14: 2862-2874. (co-first author) (SCI) (IF: 4.556; Ranking: 74/297; Scope: BIOCHEMISTRY & MOLECULAR BIOLOGY)
11. **Huang FYJ**, Lee TW, Kao CHK, Chang CH, Zhang X, Lee WY, Chen WJ, Wang SC, Lo JM. "Imaging, autoradiography and biodistribution of <sup>188</sup>Re-Labeled PEGylated nanoliposome in orthotopic glioma bearing rat model", *Cancer Biother. Radiopharm*. 2011; 26: 717-725. (SCI) (IF: 2.314; Ranking: 58/120; Scope: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING)
12. **Huang FYJ**, Huang LK, Lin WY, Luo TY, Tsai CS, Hsieh BT. "Development of a thermo-sensitive hydrogel system for local delivery of <sup>188</sup>Re colloid drugs", *Appl. Radiat. Isot*. 2009; 67: 1405-1411. (SCI) (IF: 1.270; Ranking: 16/34; Scope: NUCLEAR SCIENCE & TECHNOLOGY)
13. **Huang FYJ**, Huang LK, Tsai CS, Hsieh BT. "In situ formed thermo-reversible hydrogels as drug delivery system". *Journal of Central Taiwan University of Science and Technology* 2006; 18: 107-132.

### Podium and Poster Presentations

1. Frankl J, Hao G, **Huang FYJ**, Oz O. Comparison of <sup>125</sup>I-BMIPP-SPECT/CT to <sup>18</sup>F-FDG-PET/CT for imaging brown fat in a preclinical model. *J Nucl Med*. May 1, 2020 vol. 61 no. supplement 1 48. **Poster**
2. **Huang FYJ** and Chao JH. Influence of extraction yield of <sup>14</sup>C from water sample by different parameters through wet oxidation-acid stripping method. 13th International Symposium on Nuclear and Environmental Radiochemical Analysis. Sep. 13-17, 2018, Cambridge, United Kingdom. **Poster**
3. **Huang FYJ**, Hsu FY, Chao JH. Effective Dose Rate from the Naturally Occurring Radionuclides in Soils. 9<sup>th</sup> International Conference on Isotope, Nov. 12-16, 2017, Doha, Qatar. **Poster**
4. **Huang FYJ**, Hung CC, Luo TY, Chao JH, Hsieh BT. Evaluation of Co-cross-linking Hydrogels for Local Delivery <sup>188</sup>Re-Dox-nanoliposome drugs in breast tumor bearing mice. 9<sup>th</sup> International Conference on Isotope, 2017, Doha, Qatar. **Poster**
5. **Huang FYJ**, Lee TW, Chang CW, Lo JM. "Therapeutic efficacy evaluation of <sup>188</sup>Re-Labeled PEGylated nanoliposome in orthotopic glioma bearing rat model", 2014 Annual Meeting of the Society of Nuclear Medicine, ROC (Taiwan) & the 5<sup>th</sup> Cross-strait Nuclear Medicine Conference, Taiwan, November 1, 2014. **Podium (Honorable Podium)**
6. **Huang FYJ**, Lee TW, Lo JM. "Dosimetry and maximum tolerated dose evaluation of <sup>188</sup>Re-Nanoliposome on glioma bearing- or normal Fischer344 rat model", 2013 Japan-Taiwan Symposium on Polyscale Technologies for Biomedical

- Engineering and Environmental Sciences. Tokyo University of Science, Oshamambe, Hokkaido, Japan, 2013. **Poster**
7. Hong JJ, **Huang FYJ**, Kan KY, Lin WY, Luo TY, Huang LK and Hsieh BT. "Evaluation of the hepatic tumor therapeutic efficacy of a C/GP/Dox/<sup>188</sup>Re-Sn colloid", J Nucl Med. 2013; 54 (Supplement 2):1396. **Poster**
  8. Hong JJ, **Huang FYJ**, Gan GY, Huang LK, Hsieh BT. "Evaluation of a novel C/GP/Dox/<sup>188</sup>Re-Tin colloid characteristic in hepatic tumor", 20th International Symposium on Radiopharmaceutical Sciences, Jeju Island, Korea, 2013. **Poster**
  9. Chen PY, **Huang FYJ**, Lee TW, Hsu MH, Lo JM. "Development of auto-assembly of nanotargeted complexes using <sup>131</sup>I-streptavidin and biotin-bearing liposomes for rapid tumor imaging: An In Vitro Study", International Symposium on Frontier Biomedical and Molecular Imaging, Taipei, Taiwan, Nov. 5-6, 2011. **Poster**
  10. Chen WY, **Huang FYJ**, Lee TW, Lo JM. "In vitro and ex vivo examination of <sup>188</sup>Re-E[c(RGDyK)]<sub>2</sub>-PEG-liposome as antitumor agent in C26 tumor-bearing mouse model", European Association of Nuclear Medicine, Birmingham, UK, 15-19 October, 2011. **Poster**
  11. Lee WY, Lo JM, **Huang FYJ**, Chen WJ. "Lactoferrin-modified liposome with improved brain drug delivery", World Molecular Imaging Congress, San Diego, California, 7-10 September, 2011. **Poster**
  12. **Huang FYJ**, Lee WY, Lee TW, Lo JM. "Biodistribution, pharmacokinetics and imaging of <sup>188</sup>Re-labeled PEGylated nanoliposome in rat orthotopic glioma model", Japan-Taiwan Symposium on Polyscale Technologies for Biomedical Engineering and Environmental Sciences with The 5<sup>th</sup> Polyscale Technology Workshop, Japan, 2011. **Poster (Best Poster)**
  13. **Huang FYJ**, Lee TW, Kao CHK, Chang CH, Lee WY, Chen WY, Lo JM. "Development of <sup>188</sup>Re-BMEDA encapsulated pegylated liposome as a diagnostic and therapeutic agent for glioma", International Symposium on technetium and other radiometals in chemistry and medicine. Bressanone (Bolzano) – Italy September 8-11, 2010. **Poster**
  14. **Huang FY**, Huang LK, Luo TY, Lin WY, Tsai CS, Hsieh BT. "Development of a thermosensitive hydrogel system for local delivery of radioactive and anticancer drugs", 6th International Conference on Isotope, 2008, Seoul, Korea. **Poster**
  15. **Huang FY**, Luo TY, Huang LK, Lin WY, Hsieh BT. "Re-188 thermogelling radiopharmaceuticals in vitro kinetic study", 3th International Conference on Medical Imaging and Radiological Sciences, Taiwan, 2007. **Poster (Second Place)**
  16. **Huang FY**, Huang LK, Tsai CS, Hsieh BT. "Feasibility study of chitosan-based hydrogel for controlled release of the therapeutic radio and chemo pharmaceuticals", Ann Nuci Med Sci. vol. 20 supplement (2007, Taipei, Taiwan). **Podium**
  17. Huang LK, **Huang FY**, Tsai CS, Hsieh BT. "Design of a chitosan-based hydrogel for the delivery of therapeutic radiopharmaceuticals", 14 ISRRT (2006, 1, 15 Taichung, Taiwan). **Poster**