

## Sodio Chih-Neng Hsu

**Professor / Vice President for General Affairs**

*Bioinorganic & Organometallic Chemistry*

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**B.S.** Chemistry, Tamkang University. (1992)

**M.S.** Chemistry, National Sun Yat-Sen University. (1994)

**Ph.D.** Chemistry, National Sun Yat-Sen University (1998)

**Postdoctoral Fellow** Institute of Chemistry, Academia Sinica, Taiwan (2000)

**Postdoctoral Fellow** University of Illinois-Champaign/Urbana, USA (2000-2002)

**Assistant Professor** Department of Medicinal and Applied Chemistry, Kaohsiung Medical University (2002-2009)

**Associate Professor** Department of Medicinal and Applied Chemistry, Kaohsiung Medical University (2009-2013)

**Professor** Department of Medicinal and Applied Chemistry, Kaohsiung Medical University (2013-present)

### **Awards**

- (1) Reward Special Outstanding Talents (2010~2015) / Ministry of Science and Technology, Taiwan
- (2) 2010 "University multidisciplinary Talents Development Project" Poster Competition Award / Ministry of Education, Taiwan
- (3) 2011 Excellent Paper Award in Kaohsiung Medical University
- (4) 2013 Research Project Excellence Award in Kaohsiung Medical University
- (5) 2018 excellent paper award in Kaohsiung Medical University
- (6) TBICS Young Investigator Award 2019

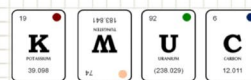
### **Research interests:**

Bio-mimic and structural study of bio-inspired coordination complexes.

Design nano-scale metallo-supramolecular and molecular recognitions.

Catalytic and structural study of organometallics compounds.

## Core Instruments for research facilities



Instrument		Instrument	
600MHz NMR	1	Ultraviolet-Visible Spectroscopy	5
400MHz NMR	3	Fourier-Transform Infrared Spectroscopy	2
200MHz NMR	2	High Performance Liquid Chromatography	5
Single-Crystal X-Ray Diffractometer	1	Nano/Zeta Sizer	1
Scanning Electron Microscope	1	Gel Permeation Chromatography	1
Transmission Electron Microscopy	1	Atomic Absorption Spectroscopy	1
Gas Chromatography	3	Fluorescence Spectrometry	2
LC Mass Spectrometry	2	Solvent System	2
MALDI-TOF Mass Spectrometry	1	Flow Cytometer	1
LC-Q-TOF Mass Spectrometry	1	Confocal Microscope	2
Real time PCR	2		



Sodio Lab try to examine the role of metals in biology includes the synthesis and study of bio-inspired metal complexes (also model complexes) to understand the biological reaction by chemical point of view. Those achievement could apply in medicine and catalyst design. The study of inorganic models or mimics could imitate the behavior of metalloproteins.

Sodio lab also have a range of well-studied structural and functional building blocks which are able to use to build up larger functional architectures. Biological systems are often the inspiration for supramolecular research.

### Selected Publications:

- Huang, Y. C.; Chen, H.-Y.; Chang, Y.-L.; Vasanthakumar, P.; Chen, S.-Y.; Kao, C.-L.; Wu, C. H.-Y.; Hsu, S. C. N.\* "Synthesis of Triisocyanomesitylene  $\beta$ -diketiminato Copper(I) Complexes and Evaluation of Isocyanide  $\pi$ -back Bonding" *Polyhedron* **2020**, *192*, 114828
- Huang, Y.-C.; Lan, W.-Y.; Ching, W.-M.; Tsai, M.-L.; Hsu, S. C. N.\* "Formation of Iron(III)-Thiolate Metallocyclophane Using a Ferrocene-Based Bis-Isocyanide" *New J. Chem.*, **2020**, *44*, 18242-18249
- Narwane, M.; Chang, Y.-L.; Ching, W.-M.; Tsai, M.-L.; Hsu, S. C. N.\* "Investigation on the Coordination Behaviors of Tris(2-pyridyl)pyrazolyl Borates Iron(II) Complexes" *Inorganica Chim. Acta* **2019**, *495*, 118966.
- Huang, Y.-T.; Haribabu, J; Chien, C.-M.; Sabapathi, G; Chou, C.-K.; Karvembu, R.; Venuvanalingam, P.; Ching, W.-M.; Tsai, M.-L.; Hsu, S. C. N.\*

- “Half-sandwich Ru( $\eta^6$ -*p*-cymene) complexes featuring pyrazole appended ligands: Synthesis, DNA binding and *in vitro* cytotoxicity” *J. Inorg. Biochem.* **2019**, *194*, 74-84.
- Chuang, W.-J.; Narwane, M.; Chen, H.-Y.; Kao, C.-L.; Huang, B.; Hsu, K.-M.; Wang, Y.-M.\*; Hsu, S. C. N.\* “Nitric Oxide Release Study of a Bio-inspired Copper(I)-nitrito Complex on Chemical and Biological Conditions” *Dalton Transactions*, **2018**, *47*, 13151-13157.
  - Chang, Y.-L.; Lin, Y.-F.; Chuang, W.-J. Kao, C.-L.; Narwane, M.; Chen, H.-Y.; Chiang, M. Y.; Hsu, S. C. N.\* “Structure and Nitrite Reduction Reactivity Study of Bio-inspired Copper(I)-nitro Complexes in Steric and Electronic Considerations of Tridentate Nitrogen Ligand” *Dalton Transactions*, **2018**, *47*, 5335-5341.
  - Chand, K.; Tsai, C.-L.; Chen, H.-Y.; Ching, W.-M.; Hsu, S.-P.\*; Carey, J. R.\*; Hsu, S. C. N.\* “Improved Synthesis of Unsymmetrical N-aryl-N'-alkylpyridyl  $\beta$ -Diketiminates using Molecular Sieves and their Lithium Complexes” *Eur. J. Inorg. Chem.* **2018**, 1093-1098. **This article was selected as a very important paper (VIP).**
  - Kosuru, S. R.; Sun, T.-H.; Wang, L.-F.; Vandavasi, J. K.; Lu, W.-Y.; Lai, Y.-C.; Hsu, S. C. N.\*; Chiang, M. Y.\*; Chen, H.-Y.\* “Enhanced Catalytic Activity of Aluminum Complexes for the Ring-Opening Polymerization of  $\epsilon$ -Caprolactone” *Inorg. Chem.*, **2017**, *56*, 7998-8006
  - Chuang, W.-J.; Hsu, S.-P.; Chand, K.; Yu, F.-L.; Tsai, C.-L.; Tseng, Y.-H.; Lu, Y.-H.; Kuo, J.-Y.; Carey, J. R. Chen, H.-Y.; Chen, H.-Y.; Chiang, M. Y.; Hsu, S. C. N.\* “Reactivity study of unsymmetrical  $\beta$ -diketiminato copper(I) complexes: effect of the chelating ring” *Inorg. Chem.* **2017**, *56*, 2722-2735
  - Huang, Y.-T.; Chen, H.-Y.; Cheng, C.-Y.; Tsai, Y.-L.; Chiang, M. Y.; Hsu, S. C. N.\* “Stepwise and self-assembly synthesis of tetranuclear iron-thiolate-diisocyanide metallocyclophane complexes” *J. Chin. Chem. Soc.* **2017**, *64*, 94-102
  - Chuang, W.-J.; Chen, H.-Y.; Chen, W. T.; Chang, H.-Y.; Chiang, M. Y.; Chen, H.-Y.\*; Hsu, S. C. N.\* “Steric and chelating ring concerns on the L-lactide polymerization by asymmetric  $\beta$ -diketiminato zinc complexes” *RSC Adv.*, **2016**, *6*, 36705-36714.
  - Chuang, W.-J.; Huang, Y.-T.; Chen, Y.-H.; Lin, Y.-S.; Lu, W.-Y.; Lai, Y.-C.; Chiang, M. Y.\*; Hsu, S. C. N.\*; Chen, H.-Y.\* “Synthesis, characterization, and catalytic activity of sodium ketiminato complexes toward the ring opening polymerization of L-lactide” *RSC Adv.*, **2016**, *6*, 33014-33021.
  - Chen, Y.-H.; Chen, Y.-J.; Tseng, H.-C.; Lian, C.-J.; Tsai, H.-Y.; Lai, Y.-C. Hsu, S.

- C. N.\*; Chiang, M. Y.\*; Chen, H.-Y.\* “Comparing L-lactide and 3-caprolactone polymerization by using aluminum complexes bearing ketiminate ligands: steric, electronic, and chelating effects” *RSC Adv.*, **2015**, *5*, 100272-100280
14. Chen, Y.-H.; Lin, T. T. Y.; Chen, H.-Y.; Kao, C.-L.; Chen, H.-Y.; Hsu, S. C. N.\*; Carey, J. R.; Chiang, M. Y. “A simple competition assay to probe pentacopper(I)-thiolato cluster ligand exchange” *J. Inorg. Biochem.* **2013**, *120*, 24-31.
15. Hsu, S. C. N.\*; Chang, Y.-L.; Chuang, W.-J.; Chen, H.-Y.; Lin, I. J.; Chiang, M. Y.; Kao, C.-L.; Chen, H.-Y. “Copper(I) Nitro Complex with an Anionic [HB(3,5-Me2Pz)3]– Ligand: A Synthetic Model for the Copper Nitrite Reductase Active Site” *Inorg. Chem.* **2012**, *51*, 9297-9308.
16. Su, C.-J.; Tang, Y.-H.; Yu, F.-L.; Wu, R.-R.; Hsu, S. C. N.\*; Kao, C.-L.\*; Huang, H.-Y.; Chen, P.-Y.\* “Extraction of Cupric Ions with Ionic Liquids Containing Polypyridine-type Small Molecules or Peripherally Pyridine-modified Dendrimers” *Chemistry – An Asian Journal* **2012**, *7*, 2438-2445.
17. Lin, P.-C.; Chen, H.-Y.; Chen, P.-Y.; Chiang, M.-H.; Chiang, M. Y.; Kuo, T.-S.; Hsu, S. C. N.\* “Self-Assembly and Redox Modulation of the Cavity Size of an Unusual Rectangular Iron Thiolate Aryldiisocyanide Metallocyclophane” *Inorg. Chem.* **2011**, *50*, 10825-10834.
- “This work provides a nice illustration of how the size of a self-assembled redox-active system can be controlled thanks to a redox stimulus, opening therefore interesting perspectives in terms of electrochemical-triggering of guest binding.”** Comment by a feature article at *Chem. Commun.*, **2015**, *51*, 7275-7289.
18. Chuang, W.-J.; Lin, I.-J.; Chen, H. Y.; Chang, Y.-L.; Hsu, S. C. N.\* “Characterization of A New Copper(I)-nitrito Complex That Evolves Nitric Oxide” *Inorg. Chem.* **2010**, *49*, 5377-5384.