

Professor Edward R.T. Tiekink

Position: Distinguished Professor & Head of the Centre for Crystalline Materials
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Education:

D.Sc. (2006), The University of Melbourne, Australia

Ph.D. (1985), The University of Melbourne, Australia

B.Sc.(Hons) (1982), The University of Melbourne, Australia

Brief Employment History:

Universiti Malaya: Professor

University of Texas at San Antonio: Professor

National University of Singapore: Associate Professor

The University of Adelaide: Senior Lecturer

Research Interests:

Solid-State Chemistry/Crystal Engineering: evaluating *i)* the factors dictating supramolecular aggregation in compounds of the main group elements, *ii)* aurophilic associations versus hydrogen-bonding – relationship to luminescence characteristics, *iii)* the utility of synthetic precursors for metal organic chemical vapour deposition, *iv)* non-directional intermolecular forces, structural systematics designed to rationalise the influence of crystal structure upon molecular structure, *v)* metal-organic framework structures as new materials for luminescence and gas storage applications, *vi)* co-crystal formation with active pharmaceutical ingredients (API's), and, *vii)* emerging intermolecular interactions involving pi-systems as supramolecular synthons.

Metal-Based Drugs: evaluating the potential and unravelling mechanisms of action of *i)* gold-based pharmaceuticals with anti-arthritis, anti-microbial and anti-tumour activity; *ii)* bismuth thiolates as anti-tumour agents; and *iii)* main group elements as novel pharmaceutical agents.

Selected Publications:

1. E. R. T. Tiekink, Molecular Crystals by Design? *Chemical Communications*, Royal Society of Chemistry, 50, 11079, 2014
2. A. M. Akhmad Aznan, A. P. Safwan, Z. Abdullah, T. Kaulgud, H. D. Arman, M. Mahindaratne, L. E. McNeil and E. R. T. Tiekink, Postsynthetic Metathesis in An All Organic Two-Dimensional Array Mediated by Hydrogen Bonding. *Crystal Growth & Design*, American Chemical Society, 14, 5794, 2014
3. E. R. T. Tiekink, Supramolecular Assembly of Molecular Gold(I) Compounds: An Evaluation of the Competition and Complementarity between Au...Au and Conventional Hydrogen Bonding Interactions. *Coordination Chemistry Reviews*, Elsevier, 275, 130, 2014
4. I. Caracelli, I. Haiduc, J. Zukerman-Schpector and E. R. T. Tiekink, M... π (arene) Interactions for M = Gallium, Indium and Thallium: Influence Upon Supramolecular Self-Assembly and Prevalence in Some Proteins. *Coordination Chemistry Reviews*, Elsevier, 281, 50, 2014
5. S. K. Seth, V. S. Lee, J. Yana, S. M. Zain, A. C. Cunha, V. F. Ferreira, A. K. Jordão, M. C. B. V. de Souza, S. M. S. V. Wardell, J. L. Wardell and E. R. T. Tiekink, A Crystallographic and Computational Study of 1-(arylamino)-1,2,3-triazole-4-Carbohydrazides. *CrystEngComm*, Royal Society of Chemistry, 17, 225, 2015
6. C. I. Yeo, C.-H. Khoo, W.-C. Chu, B.-J. Chen, P.-L. Chu, J.-H. Sim, Y.-K. Cheah, J. Ahmad, S. N. A. Halim, H.-L. Seng, S. Ng, A. Otero-de-la-Roza and E. R. T. Tiekink, The Importance of Au... π (aryl) Interactions in the Formation of Spherical Aggregates in Binuclear Phosphanegold(I) Complexes of a Bipodal Thiocarbamate Dianion: A Combined Crystallographic and Computational Study, and Anti-Microbial Activity. *RSC Advances*, Royal Society of Chemistry, 5, 41401, 2015
7. Y. S. Tan, K. K. Ooi, K. P. Ang, A. Md Akim, Y.-K. Cheah, S. N. A. Halim, H.-L. Seng and E. R. T. Tiekink, Molecular Mechanisms of Apoptosis and Cell Selectivity of Zinc Dithiocarbamates Functionalized with Hydroxyethyl substituents. *Journal of Inorganic Biochemistry*, Elsevier, 150, 48, 2015
8. K. K. Ooi, C. I. Yeo, K.-P. Ang, A. Md Akim, Y.-K. Cheah, S. N. A. Halim, H.-L. Seng and E. R. T. Tiekink, Phosphanegold(I) thiolates, $\text{Ph}_3\text{PAu}[\text{SC}(\text{OR})=\text{NC}_6\text{H}_4\text{Me}-4]$ for R = Me, Et and iPr, Induce Apoptosis, Cell Cycle Arrest and Inhibit Cell Invasion of HT-29 Colon Cancer Cells Through Modulation of The Nuclear Factor- κB Activation Pathway and Ubiquitination. *Journal of Biological Inorganic Chemistry*, Springer, 20, 855, 2015