

JOSEPH L. TEMPLETON

University of North Carolina at Chapel Hill
Department of Chemistry
Chapel Hill, NC 27599

Office: (919) 966-4575
FAX: (919) 962-2388
EMAIL: joetemp@unc.edu

EDUCATION

1967-1971 B.S. Chemistry, California Institute of Technology, Pasadena, CA
1971-1975 Ph.D. Chemistry, Iowa State University (Advisor: Robert McCarley)
1975-1976 NATO Postdoctoral Fellow, Imperial College, London (Advisor: Sir G. Wilkinson)

PROFESSIONAL POSITIONS (all at the University of North Carolina, Chapel Hill)

2002-present Venable Professor of Chemistry
1986-present Professor of Chemistry
1981-1986 Associate Professor of Chemistry
1976-1981 Assistant Professor of Chemistry

PROFESSIONAL AND UNIVERSITY APPOINTMENTS

Special Assistant to the Chancellor (2009- present)
Chair of the Faculty at UNC-Chapel Hill (2006-09)
NSF Program Officer for Inorganic Chemistry (Rotator) (2004-2007)
Director of Development, Department of Chemistry (2000-2004)
Resident Director, UNC Honors Program in London (1999)
Senior Associate Dean for Sciences, College of Arts and Sciences (1997-1998)
Associate Dean, College of Arts and Sciences (1995-1997)
Chairman, Department of Chemistry (1990-1995)

PROFESSIONAL SOCIETIES

American Chemical Society
American Association for the Advancement of Science
Sigma Xi

PROFESSIONAL ACTIVITIES

Research Triangle Foundation Board (2010 - present)
ACS-PRF Advisory Board (2009 - present)
Chair Organometallic Gordon Conference - 2004
Visiting Professor, University of Konstanz -1994
Australian National University Visiting Fellow - 1990
AWU - Los Alamos Faculty Participant - 1986
R. J. Reynolds Leave - Oxford University - 1985
ASEE - Navy Visiting Faculty Fellow - 1982

HONORS AND AWARDS

Iowa State Chemistry Department Distinguished Alumni Award 2009
NSF Creativity Extension Award – 1995

REFEREED PUBLICATIONS (2007 to 2013)

154. "Tungsten(II) Monocarbonyl bis(acetylacetonate): A Fourteen-Electron Docking Site for η^2 -Four-Electron Donor Ligands", A. B. Jackson, C. K. Schauer, P. S. White, and J. L. Templeton, J. Am. Chem. Soc., 129, 10628-10629 (2007).
155. "Facile Dehydrogenation of Ethers and Alkanes with a β -Diiminate Pt Fragment", N. M. West, P. S. White, and J. L. Templeton, J. Am. Chem. Soc., 129, 12372-12373 (2007).
156. "Coordination and Derivatization of 3, 4, and 6-Membered Nitrogen Heterocycles at a Chiral Tungsten(II) Center", A. D. Garrett, P. S. White and J. L. Templeton, Inorg. Chim. Acta, 361, 3135-3148 (2008).
157. "Reduction of π -Bound Nitriles to π -Bound Imines in a Tungsten(II) Bis(Acetylacetonate) Coordination Sphere", A. B. Jackson, Chetna Khosla, Helen E. Gaskins, P. S. White, and J. L. Templeton, Organometallics, 27, 1322-1327 (2008).
158. "Mechanisms of Water Oxidation from the Blue Dimer to Photosystem II", F. Liu, J. J. Concepcion, J. W. Jurss, T. Cardolaccia, J. L. Templeton, and T. J. Meyer, Inorg. Chem., 47, 1727-1752 (2008).
159. "The Patterning of Sub-500 nm Inorganic Oxide Structures", M. J. Hampton, S. S. Williams, Z. Zhou, J. Nunes, D-H. Ko, J. L. Templeton, E. T. Samulski, and J. M. DeSimone, Adv. Mater., 20, 2667-2673 (2008).
160. "Nanostructured Titania-Polymer Photovoltaic Devices Made Using PFPE-based Nano-molding Techniques", S. S. Williams, M. J. Hampton, V. Gowrishankar, I-K. Ding, J. L. Templeton, E. T. Samulski, J. M. DeSimone, and M. McGehee, Chem. Mater., 20, 5229-5234 (2008).
161. "Reduction of an η^2 -Iminoacyl Ligand to an η^2 -Iminium Enabled by Adjacent Carbon Monoxide Ligand Replacement with a Variable Electron Donor in a Cationic Tungsten(II) Bis(acetylacetonate) Complex", A. B. Jackson, C. Khosla, P. S. White, and J. L. Templeton, Inorg. Chem., 47, 8776-8787 (2008).
162. "Alkyne Insertion into the Pt-H bond of β -DiiminatePt(H)(1-pentene) Initiates a Reaction Cascade that Results in C-H Activation or C-C Coupling", N. M. West, P. S. White, and J. L. Templeton, Organometallics, 27, 5252-5262 (2008).
163. "Mediator-Assisted Water Oxidation by the Ruthenium "Blue Dimer" *cis,cis*-[(bpy)₂(H₂O)RuORu(OH₂)(bpy)₂]⁴⁺", J. J. Concepcion, J. W. Jurss, J. L. Templeton, and T. J. Meyer, Proc. Nat. Acad. Sci., 105, 17632-17635 (2008).
164. "One Site is Enough. Catalytic Water Oxidation by [Ru(tpy)(bpm)(OH₂)]²⁺ and [Ru(tpy)(bpz)(OH₂)]²⁺", J. J. Concepcion, J. W. Jurss, J. L. Templeton, and T. J. Meyer, J. Am. Chem. Soc., 130, 16462-16463 (2008).
165. "Approaches to alkane functionalization with Tp'Pt and (nacnac)Pt reagents", N. M. West and J. L. Templeton, Can. J. Chem., 87, 288-296 (2009).

166. "Cycloaddition Reactions of Terminal Alkynes and Phosphaalkynes with an Isolable 5-Coordinate β -Diimine Pt(IV) Dihydrosilyl Complex", N. M. West, P. S. White, J. L. Templeton and J. F. Nixon, Organometallics, **28**, 1425-1434 (2009).
167. "Combined Experimental and Computational Study of W(II), Ru(II), Pt(IV) and Cu(I) Amine and Amido Complexes Using ^{15}N NMR Spectroscopy", S. A. Delp, C. Munro-Leighton, C. Khosla, J. L. Templeton, N. M. Alsop, T. B. Gunnoe, and T. R. Cundari, J. Organomet. Chem., **694**, 1549-1556 (2009).
168. "Sequential Coordination and Oxidative Addition of Terminal Alkynes to the Tp'PtMe Fragment", K. L. Engelman, P. S. White and J. L. Templeton, Inorg. Chim. Acta, **362**, 4461-4467 (2009).
169. "Making Oxygen with Ruthenium Complexes", J. J. Concepcion, J. W. Jurss, M. K. Brennaman, P. G. Hoertz, A. O. de Toledo Patrocinio, N. Y. M. Iha, J. L. Templeton, T. J. Meyer, Accts. Chem. Res., **42**, 1954-1965 (2009).
170. "Catalytic Water Oxidation by Single-Site Ruthenium Catalysts", J. J. Concepcion, J. W. Jurss, M. R. Norris, Z. Chen, J. L. Templeton and T. J. Meyer, Inorg. Chem., **49**, 1277-1279 (2010).
171. "Direct Patterning of CdSe Quantum Dots into Sub-100 nm Structures", M. J. Hampton, J. L. Templeton, and J. M. DeSimone, Langmuir, **26**, 3012-3015 (2010).
172. "Surface Catalysis of Water Oxidation by the Blue Ruthenium Dimer", J. W. Jurss, J. J. Concepcion, M. R. Norris, J. L. Templeton, T. J. Meyer, Inorg. Chem., **49**, 3980-3982 (2010).
173. "Synthesis of Isonitrile, Iminoacyl and Aminocarbene Tp'Pt Complexes", K. L. Engelman, P. S. White, and J. L. Templeton, Organometallics, **29**, 4943-4949 (2010).
174. "Synthesis and Isocyanate Insertion Reactions of Tungsten(IV) Imido Complexes Formed From $\text{W}(\text{CO})(\text{acac})(\text{N}_3)(\text{PMe}_3)_3$ With Azide as the Oxidant", C. Khosla, A. B. Jackson, P. S. White and J. L. Templeton, Inorg. Chim. Acta, **369**, 19-31, (2011).
175. "C-H and C-C Bond Formation Promoted by Facile κ^3/κ^2 Interconversions in a Hemilabile "Click"-Triazole Scorpionate Platinum System", B. Frauhiger, P. S. White, and J. L. Templeton, Organometallics, **31**, 225-237 (2012).
176. "An Easy Conversion from Pt(II) Reagents to Pt(IV) Products: A κ^3 to κ^2 Coordination Mode Interconversion, Phenyl Migration, and ortho C-H Activation Cascade in a Hemilabile "Click"-Triazole Scorpionate Platinum System", B. Frauhiger, P. S. White, and J. L. Templeton, Organometallics, **31**, 2770-2784 (2012).
177. "Bis(acetylacetonate)Tungsten (IV) Complexes Containing a π -Basic Diazoalkane or Oxo Ligand" C. Khosla, A. B. Jackson, P. S. White, J. L. Templeton, Organometallics, **31**, 987-994 (2012).
178. "Electronic Structure of the Water Oxidation Catalyst, *cis,cis* $[(\text{bpy})_2(\text{H}_2\text{O})\text{Ru}^{\text{III}}\text{ORu}^{\text{III}}(\text{OH}_2)(\text{bpy})_2]^{4+}$, The Blue Dimer", J. W. Jurss, J. J. Concepcion, J. M. Butler, K. M. Omberg, L. M. Baraldo, D. Graff Thompson, E. L. Lebeau, B. Hornstein, J. R. Schoonover, H. Jude, J. D. Thompson, D. M. Dattelbaum, R. C. Rocha, J. L. Templeton, T. J. Meyer*, Inorg. Chem., **51**, 1345-1358 (2012).

179. "Seeking a Mechanistic Analogue of the Water-Gas Shift Reaction: Carboxamido Ligand Formation and Isocyanate Elimination from Complexes Containing the Tp'PtMe Fragment", B. Frauhiger, M. Ondisco, P. S. White, and J. L. Templeton, *J. Am. Chem. Soc.*, **134**, 8902–8910 (2012).
180. "An Amide-Linked Chromophore-Catalyst Assembly for Water Oxidation", D. Ashford, D. Stewart, C. Glasson, R. Binstead, M. R. Norris, J. J. Concepcion, JZ. Fang, J. L. Templeton and T. J. Meyer, *Inorg. Chem.*, **51**, 6428–6430 (2012).
181. "Synthesis and Oxidation of d⁶ Tungsten Pincer Complexes: A Complete Series of Tungsten(II) Hydridocarbonyl and Halocarbonyl Pincer Complexes", L. A. Wingard, P. S. White, and J. L. Templeton, *Dalton Trans.*, **41**, 11438-11448 (2012).
182. "Sensitized Photo-Decomposition of Organic Bis-Phosphonates By Singlet Oxygen", K. Hanson, D. Ashford, J. Concepcion, R. Binstead, S. Habibi, H. Luo, C. Glasson, J. L. Templeton, and T. J. Meyer, *J. Am. Chem. Soc.*, **134**, 16975–16978 (2012).
183. "Photoinduced Electron Transfer in a Chromophore-Catalyst Assembly Anchored to TiO₂", D. Ashford, W. Song, J. Concepcion, C. Glasson, M. Brenneman, M. Norris, Z. Fang, J. L. Templeton, and T. J. Meyer, *J. Am. Chem. Soc.*, **134**, 19189-19198 (2012).
184. "Synthesis, Structure, and Reactivity of Iridium(III) Complexes Containing a 4,6-Dimethyl-1,3-benzenediphenylimine Pincer Ligand", L. A. Wingard, M. C. Finnis, M. Norris, P. S. White, M. Brookhart and J. L. Templeton, *Inorg. Chem.*, **52**, 515–526 (2013).
185. "The Redox Mediator Effect on Water Oxidation in a Ruthenium Based Chromophore-Catalyst Assembly", M. Norris, J. Concepcion, D. Harrison, R. Binstead, D. Ashford, Z. Fang, J. L. Templeton, and T. J. Meyer, *J. Am. Chem. Soc.*, **135**, 2080–2083 (2013).
186. "Reductive Elimination from Aminotroponimate Dimethyl Platinum(IV) Complexes Promoted by Sterically Hindered Lewis Bases" E. Traversa, J. L. Templeton, H. Y. Cheng, M. Mohadjer Beromi, N. West, *Organometallics*, **32**, 1938-1950 (2013).
187. "Coordination Chemistry of Single-Site Catalyst Precursors in Reductively Electropolymerized Vinylbipyridine Films", D. P. Harrison, A. M. Lapides, R. A. Binstead, J. J. Concepcion, M. A. Méndez, D. A. Torelli, J. L. Templeton and T. J. Meyer, *Inorg. Chem.*, **52**, 4747–4749 (2013).
188. "Probing the Oxidation Chemistry of Half-Sandwich Iridium Complexes with Oxygen Atom Transfer Reagents", C. R. Turlington, D. P. Harrison, P. S. White, M. Brookhart and J. L. Templeton, *Inorg. Chem.*, **52**, 11351–11360 (2013).

TRAINING RECORD

Postdoctoral fellows, 8 total

Graduate students, 43 PhD students graduated, 5 current graduate students

Undergraduate research students, 23 total

CURRENT GRANT SUPPORT

Current Extramural Funding

"Chancellor's Science Scholars (A Partnership with UMBC and the Howard Hughes Medical Institute, HHMI), 2/01/13-08/31/14, \$250,000. Role: co-PI with Stephen Farmer, Director of Admissions

"Bond Activation and Bond Formation with Platinum Reagents," National Science Foundation (NSF-Chemistry), 09/01/11-08/31/14, \$516,030. Role: PI.