



CHEM 580
Current Topics in Inorganic Chemistry & Nanoscience

Units: 2

Term—Day—Time:

Spring—Tu—12:30 (**Seminar**)

Spring—Tu—16:30 (**Discussion, Zoom**)

Spring—TBD—TBD (**Journal Club**)

Seminar Location: SSL 202

Discussion Location: OCW 214

Start date: August 27, 2024

End date: December 06, 2024

Instructor: Prof. Michael S. Inkpen

Office: Zoom (normally LJS 250)

Office Hours: By appointment.

Contact Info: inkpen@usc.edu, +1 (213) 821-1910. Please expect a response to emails/calls within 2 working days.

Teaching Assistant: N/A

IT Help: N/A.

Catalogue Description: Introduction to emerging research areas in Inorganic Chemistry & Nanoscience through a discussion of seminal research articles and presentations of current research topics.

Course Description

CHEM 580 is a **2-unit** graduate level course in modern Inorganic Chemistry & Nanoscience. The intent of this course is to provide you with a broad-based sampling of the latest developments in Inorganic Chemistry & Nanoscience. The course consists of two main components:

- (i) **External Speaker Seminar** - you will attend departmental Inorganic seminars and meet for a discussion (question and answer) session with the speaker later that day;
- (ii) **Journal Club** – you will attend *Inorganic Journal Club* (IJC), where USC graduate students and postdocs formally present recent articles from the scientific literature.

Attendance is mandatory unless previous arrangements have been made with the instructor.

Learning Objectives

By the end of this course you should be able to:

- Identify the core components of good scientific writing.
- Engage with research topics outside of your immediate area.
- Evaluate the significance of recently published research in Inorganic Chemistry & Nanoscience.

By demonstrating that you can:

- Correctly format scientific articles in different styles.
- Prepare for discussions with visiting scientists on their latest research.
- Describe new concepts, theories, and methodologies in a clear and concise written form.
- Consider new scientific results, data, and advances in a broader context.

Please note that these lists are not comprehensive and subject to change.

Prerequisite(s): N/A

Co-Requisite(s): N/A

Concurrent Enrollment: N/A

Recommended Preparation: N/A

Course Notes

Letter Grades will be assigned based on the assignments described below.

Technological Proficiency and Hardware/Software Required

N/A

Required Readings and Supplementary Materials

Required Texts: Online access to journals.

Supplementary Reading on Scientific Writing (optional):

Whitesides, G. M. "Whitesides' Group: Writing a Paper." *Adv. Mater.* 2004, **16**, 1375.

Strunk, W. and White, E. B. "The Elements of Style." Pearson, 4th Ed., 1999.

Description and Assessment of Assignments

Research Synopses

You will prepare a 1-page research synopsis (Times New Roman 12-pt font, single spaced, 1 inch margins) for each of the visiting speakers. The specific content is left up to you – you could focus on a single research paper from their group, an overview of their group's work, or a specific technique that they utilize. Please feel free to get creative, and try different approaches as we go through the semester. You can find the information you need to prepare this synopsis from the speaker's faculty website and recent publications from that person (from the last 1-2 years). Do not simply copy information off the web or from their publications (that is plagiarism). You must distill information from these sources into your own words. Include

references in ACS format (in the style of *J. Am. Chem. Soc.*, <https://pubs.acs.org/doi/pdf/10.1021/bk-2006-STYG.ch014>). Feel free to include figures where appropriate.

Your research synopsis should include 2 (sophisticated) scientific questions that will help to facilitate your discussions with the speaker when you meet with them.

This synopsis is due before 12:30 pm the day of the seminar via email (inkpen@usc.edu) as a pdf document. Feedback will be given to help improve your scientific writing, which you should attempt to incorporate in subsequent synopses and your “News & Views” article.

News & Views Article

You will write an article in the style of a *Nature/Nature Chemistry* News & Views on a paper from one of this semester’s seminar speakers. This assignment involves writing an extended Research Synopsis, building upon the writing practice and instructor feedback you have received throughout the semester.

News & Views articles are short (usually 800–900 words), and have as much in common with journalistic news reports as the formal scientific literature. They should therefore make clear the advance being discussed, and communicate a sense of excitement, yet provide a critical evaluation of the research concerned.

(from “Guidelines for Nature News & Views articles” by Ana Lopes, *Nature*)

They inform readers about the latest advances in chemistry, as reported in recently published papers (in Nature Chemistry or elsewhere).

(from <https://www.nature.com/nchem/content>)

Step-by-step guidelines:

- Read at least two published News & Views articles to provide context and inspiration for your assignment. Find previous examples of News & Views by browsing recent articles in *Nature Chemistry* at: <https://www.nature.com/nchem/articles?type=news-and-views>.
- Select a speaker from the Fall seminar series, email your choice to inkpen@usc.edu by **November 1**.
- Choose a high impact paper from that seminar speaker (e.g., from *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Chem. Sci.*, *Nature Chem./Cat./Nanotechnol./Commun./etc*).
- **Titles.** These should be short and contain no punctuation marks or abbreviations. News & Views articles also carry a ‘subject strapline’ of one or two words to define the general subject area of the article, and a ‘standfirst’, a short item in larger type that precedes the main text and is intended to entice readers to read on.
- **How to write it.** The “news” part should be highlighted in a brief opening paragraph to attract the attention of those who are not experts in the field. This paragraph should explicitly refer to the paper under discussion and touch on the general significance of the work. More detail, background and explanation should follow, including your own “views”. The text is often best rounded off with comment on the limitations and implications of the new work, and on future research directions. Remember to:
 - Place this work in the context of the larger field and past work.
 - Explain what this paper is bringing to the community that is new and innovative? Why is it important/a big deal?
 - Write your article in a formal scientific writing style.
- **Diagrams.** These are used to explain the new points made or the background science. Captions should be succinct but self-contained; readers like the main message of an article to be repeated briefly in the caption.
- **Notes on jargon.** Surveys of readers show that they struggle with unfamiliar jargon or concepts, even in disciplines close to their own. Overuse of abbreviations or acronyms is a particular problem in some subjects. All News & Views authors want to ensure that their article is technically correct and thought-provoking for those concerned. But the surveys also show that when care is taken to

identify difficult terms or concepts, and then to avoid or explain them as appropriate, articles can meet these aims yet appeal to a much wider audience.

- **Format:** Once you have written your News & Views article, you must insert it into the template provided. It is up to you to figure out how to use the template and format your News & Views so it looks perfect. Limit the length of your article to 600-900 words (note a lower word limit than required by *Nature/Nature Chemistry*).
 - **References.** Include no more than 15 references in ACS format.
- (adapted from “Guidelines for Nature News & Views articles” by Ana Lopes, *Nature*)

Your News & Views article is due **December 6** before 5 pm via email (inkpen@usc.edu) as a pdf document.

Grading Breakdown

Assessment Tool (assignments)	Due	% of Grade
Participation		
- 7 seminars (Tuesdays only)	Day of Seminar, 12:30 pm	12
- 7 meetings with speakers* (Tuesdays only)	Day of Seminar, 4:30 pm	12
- IJCs	Day of IJC (date/time TBC)	6
Synopses of Visiting Speaker's Research	Day of Seminar, 12:30 pm	30
News & Views Article	December 6, 5 pm	40
TOTAL		100

* Where speaker is unavailable to meet with students/postdocs, participation grade for the meeting will be added to that of the seminar.

Assignment Submission Policy

Assignments should be submitted through email by the specified time and date.

Grading Timeline

Grading and feedback for all assessments will be provided within one week of submission.

Additional Policies

There will be absolutely no make ups, extra time, or special arrangements given for any assignments. Students are expected to attend all events and participate in discussions, unless an pre-arranged agreement has been made due to unusual circumstances (e.g., course conflict).

Inorganic Seminar Schedule:

September 10	Simon Humphrey , UT Austin
September 17	Timothy Su , UC-Riverside
September 24	Ryan Hadt , Caltech
September 27*	Selvan Demir , Michigan State [Phys-Inorg seminar, Friday 12-1 pm]
October 1	Courtney Roberts , University of Minnesota
October 15	Raúl Hernandez Sanchez , Rice University
October 29	Jillian Dempsey , UNC Chapel Hill
November 19	Nathaniel Rosi , University of Pittsburgh

All Tuesday 12:30-1:20 pm unless stated.

* Optional due to potential scheduling conflicts.

IJC Schedule:

TBC

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

Campus Support & Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.