



Introduction to Chemistry

Course Code			
Class Times	Mon/Wed/Thu B(13:00~16:00)	Classroom	Bldg 500-L???
Equivalent Year Level	1	Course Credit	3
Instructor	YounJoon Jung	Sessions	1-14
Office	Bldg 502-224	Email	yjjung@snu.ac.kr

□ Instructor's Profile

Name: YOUNJOON JUNG

Associate Professor, Department of Chemistry



YounJoon Jung graduated from Seoul National University *summa cum laude* with a Bachelor's degree in Chemistry in 1994, and received a Master's degree in 1997 from the same university. He obtained his Ph. D from Massachusetts Institute of Technology in 2002, where he worked under the guidance of Robert J. Silbey. His Ph. D. work focused on developing theoretical formulations of the single molecule spectroscopy and electron transfer reactions in condensed media. He was awarded with Miller Fellowship from the University of California, Berkeley, where he worked as a Miller Research Fellow with David Chandler from 2002 to 2005. After working as a research associate with George Schatz and Mark Ratner at Northwestern University, he joined the Seoul National University as a faculty member in 2006, where he is currently Associate Professor and Vice Chair of the Department. He was a visiting scholar at the University of California, Berkeley in 2012. He served as Vice Director of Center for Space-Time Molecular Dynamics from 2013 to 2016.

Education

Ph.D., Department of Chemistry, Massachusetts Institute of Technology (MIT), 2002

M.S., Department of Chemistry, Seoul National University, 1997

B.S., Department of Chemistry, Seoul National University, 1994

Expertise

Theoretical and Computational Chemistry; Statistical Mechanics; Molecular Dynamics Simulation; Quantum Chemistry

Most Recent Works

“Computer simulation study of differential capacitance and charging mechanism in graphene supercapacitors: Effects of cyano-group in ionic liquids,” Sungsik Jo, Sang-Won Park, Chanwoo Noh, YounJoon Jung, *Electrochimica Acta* 284, pp.577-586 (2018)

“The nature of hydrated protons on platinum surfaces”, Y. Kim, C. Noh, YounJoon Jung, and H. Kang, *Chemistry–A European J.* 23(69), pp.17566-17575 (2017).



□ Course Information

Course Description	In this course we seek to understand and interpret chemical events at the molecular level. We first introduce the relation of molecular structure to function and properties that requires the introduction of molecular structure. Then, we present various introductory topics in modern chemistry from a unified, molecular point of view. In particular, we pay a great attention on the electronic structure of molecules starting from quantum mechanics. Then, we gradually move on to discuss bulk properties of matter using thermodynamic principles.
Course Evaluation	Midterm exam 40% Final exam 40% Attendance & Class participation 20% Attendance will be important for keeping up with class. Good attendance and active participation will be reflected in grade.
Course Materials	Principles of Modern Chemistry, 7 th ed. or 8 th ed. Oxtoby, Gillis, Campion (7 th)/Oxtoby, Gillis, Butler (8 th)
Class Policy	<i>(Insert as necessary)</i>
Etc. <i>(e.g. Guidelines)</i>	Students are expected to read the chapters of the lecture.

□ Course Schedule (Schedule may change)

Session	Description	Etc
1	Introduction & Atoms in Modern Chemistry	June 26th
2	Atomic Shells	June 27th
3	Introduction to Quantum Mechanics	July 1st
4	Quantum Mechanics and Atomic Structure	July 3rd
5	Quantum Mechanics and Molecular Structure	July 4th
6	Chemical Bonds in Organic and Inorganic Chemistry	July 8th
7	Mid-term Exam	June 10th
8	The Gaseous State	July 11th
9	Solids, Liquids, and Phase Transitions	July 15th
10	Thermodynamics 1	July 17th
11	Thermodynamics 2	July 18th
12	Chemical Equilibrium	July 22nd
13	Chemical Kinetics	July 24th
14	Special Topics: Computational Chemistry	July 25th
15	Final Exam	July 26th