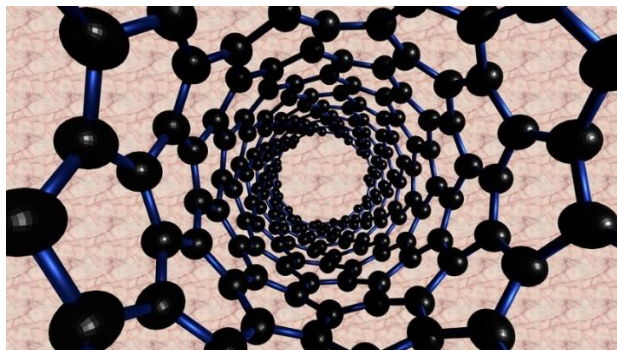


Novel Materials and Technologies



Fulbright Guest Professor: Vivian Feng,
Augsburg University, Minneapolis, Minnesota, USA

Course Introduction:

Materials chemistry is a highly interdisciplinary field of study that draws from physics, biology, engineering, and math. This topic course aims to provide students with an introduction to a variety of emerging materials and their applications. It is designed to provide a fundamental understanding of how material structures can determine their properties, and how applications of materials provide feedback loops for material redesign. It emphasizes how significant advances in chemical knowledge are impacting the development of new classes of materials. We will survey a variety of novel materials and applications through primary literature, such as polymeric biomaterials, 2-D materials, and energy materials.

Course objectives:

We will introduce various classes of materials based on their chemical natures, and conduct discussions on selected representatives of each class of material follow the path of “**Make → Characterize → Use → Societal impact / End-of-life**”.

By the end of the semester, students will develop an understanding in the following areas:

- Structure–property relationships, including electrical, magnetic, and optical properties of materials
- Material characterization techniques
- Material surface properties and their implications in nanotechnology
- Societal impacts of development of new materials

Online -Course – Schedule: To be determined