

## UC SAN DIEGO NANOENGINEERING SEMINAR

Wednesday, June 5, 2019

Seminar Presentation: 11:00am - 12:00pm

**SME 248**

### “Chemical Design of Functional Protein Materials”



**Akif Tezcan**

*Professor*

*Department of Chemistry and Biochemistry*

*Materials Science and Engineering*

*University of California, San Diego*

**Abstract:** "Proteins represent the most versatile building blocks available to living organisms or the laboratory scientist for constructing functional materials and molecular devices. Underlying this versatility is an immense structural and chemical heterogeneity that renders the programmable self-assembly of proteins an extremely challenging design task. To circumvent the challenge of designing extensive non-covalent interfaces for controlling protein self-assembly, we have endeavoured to use chemical bonding strategies based on fundamental principles of inorganic and supramolecular chemistry. These strategies have resulted in discrete or infinite, 1-, 2- and 3D protein architectures that display high structural order over large length scales (yet are dynamic/adaptive and stimuli-responsive) and possess new emergent chemical/physical properties. In this talk, I will present some of the recent protein-based materials constructed in our laboratory.

**Biosketch:** Akif Tezcan was born and raised in Istanbul, Turkey, and completed his Abitur in the German High School there. He received his undergraduate degree in Chemistry and Biology at Macalester College (St. Paul, Minnesota) and his Ph.D. in Inorganic Chemistry at Caltech (Pasadena, California) under Prof. Harry Gray, followed by postdoctoral work with Prof. Doug Rees in the same institution. He started his independent career in the Department of Chemistry and Biochemistry at UC San Diego in 2005, where he is currently Professor and Leslie Orgel Faculty Scholar. His group's research interests center on developing chemical tools for building functional protein assemblies and new biological materials, and on understanding and expanding the roles of metals in biology.