



## Dr. Serkan Ünal

### “High Performance Coatings, Adhesives, and Structural Composites from Functional Macromolecules and Nanomaterials”

Sabancı University - Nanotechnology  
Research and Application Center

Host: Tim Long



**Abstract:** The tailored design and synthesis of functional macromolecules for coating, adhesive or membrane applications is a critical step for desired property and performance improvements beyond the state-of-the-art. Similarly, the chemical functionality of nanoparticles plays a critical role in preparing truly functional nanocomposite structures. Water solubility or miscibility is another key aspect for some polymers and nanoparticles utilized in these applications to meet process requirements and address environmental concerns. This presentation will highlight recent research efforts in our group on the development of (i) functional waterborne polyurethanes for industrial coatings and adhesives, (ii) functional polysulfones and hybrid inorganic nanomaterials for water purification membranes and systems, and (iii) functional carbon nanomaterials for fiber-reinforced polymeric composite applications

Sabancı University  
Nanotechnology Research and  
Application Center

Phone: +90 216 483 9996

E-mail: [Serkanunal@sabanciuniv.edu](mailto:Serkanunal@sabanciuniv.edu)

**Bio:** Dr. Ünal received his B.S. degree in Chemistry from Koc University, Istanbul, Turkey, in 2001 and completed his Ph.D. in Polymer Chemistry at Virginia Tech in 2005. He worked as a research scientist at Bayer MaterialScience LLC, Pittsburgh PA between 2005 and 2012 focusing on the development and various industrial applications of polyurethane dispersions, composites and the first industrial scale carbon nanotube product line. He joined Sabancı University, Istanbul, Turkey in 2012, where he currently serves as a research faculty member at the Nanotechnology Research and Application Center (SUNUM) and Composite Technologies Center of Excellence (SU-CTC). He is also the founder and chairman of Punova R&D Chemicals Industry and Trade Inc., located in Istanbul.

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