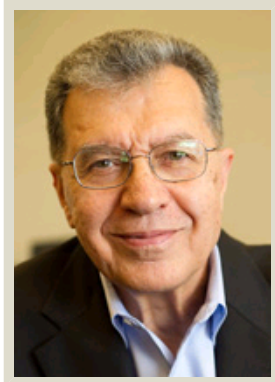


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Education

- Ph.D. 1970, Cornell University
- M.S. 1969, Cornell University
- M.S.C.E. 1963, Istanbul Technical University, Istanbul, Turkey

Research Interests

Professor Buyukozturk's research focuses on mechanics and design of structures and innovative materials. His work includes behavior and design of concrete structures, integrity assessment of reinforced/prestressed nuclear containment systems, durability of materials, earthquake engineering, interface fracture mechanics, fiber-reinforced polymer (FRP) composites in structural rehabilitation, structural health monitoring (SHM), and nondestructive testing (NDT). His recent research focus also includes multi-scale analysis of multi-layer material systems using molecular dynamics (MD).

Teaching Interests

- Mechanics and Design of Concrete Structures (1.541/1.054)
- Structural and Geotechnical Engineering Design (1.036)
- Structural Mechanics in Nuclear Power Technology (1.56J)
- Colossal Failures in Engineering (21W.781/ESD.032J)

Selected Publications

1. Lau, D., Buyukozturk, O. and Buehler, M.J., "Characterization of the adhesive strength between epoxy and silica using a free energy approach", *Journal of Materials Research*, accepted for publication.
2. Gunes, O. and Buyukozturk, O., "Simulation-based microwave imaging of plain and reinforced concrete for nondestructive evaluation", *International Journal of Physical Sciences*, Vol.7, No.3, pp.383-393, 2012.

3. Tuakta, C. and Buyukozturk, O., "Conceptual model for prediction of FRP/concrete bond strength under moisture cycles", *Journal of Composites for Construction*, Vol.15, No.5, pp.743-756, 2011.
4. Tuakta, C. and Buyukozturk, O., "Deterioration of FRP/concrete bond system under variable moisture conditions quantified by fracture mechanic", *Composite Part B: Engineering*, Vol.42, No.2, pp.145-154, 2011.
5. Buyukozturk, O., Buehler, M.J., Lau, D. and Tuakta, C., "Structural solution using molecular dynamics: fundamentals and a case study of epoxy-silica interface", *International Journal of Solids and Structures*, Vol.48, No.14-15, pp.2131-2140, 2011.
6. Ozkaynak, H. Yuksel, E., Buyukozturk, O., Yalcin, C. and A.A. Dindar, "Quasi-static and pseudo-dynamic testing of infilled RC frames retrofitted with CFRP material", *Composite Part B: Engineering*, Vol.42, No.2, pp.238-263, 2011.
7. Lau, D. and Buyukozturk, O., "Fracture characterization of concrete/epoxy interface affected by moisture", *Mechanics of Materials*, Vol.42, No.12, pp.1031-1042, 2010.
8. Yuksel, E., Ozkaynak, H., Buyukozturk, O., Yalcin, C., Dindar, A.A., Surmeli, M., and Tastan, D., "Performance of alternative CFRP retrofitting schemes used in infilled RC frames", *Construction and Building Materials*, Vol.24, No.4, pp.596-609, 2010.
9. Gunes, O., Buyukozturk, O., and Karaca, E., " A Fracture-based model for FRP Debonding in Strengthened Beams" , *Engineering Fracture Mechanics*, Vol.76, No.12, pp.1897-1909, 2009.
10. Buyukozturk, O. and Yu, T.-Y., " Far-field radar NDT technique for detecting GFRP debonding from concrete" , *International Journal of Construction and Building Materials*, Vol.23, pp.1678-1689, 2009.
11. Yu, T.-Y. and Buyukozturk, O., "A far-field airborne radar NDT technique for detecting debonding in GFRP-retrofitted concrete structures." *NDT&E International*, Vol.41, pp.10-24, 2008.
12. Au, C. and Buyukozturk, O., " Debonding of FRP plated concrete: a tri-layer fracture treatment" , *International Journal of Engineering Fracture Mechanics*, Vol.73, pp.348-365, 2006.
13. Au, C. and Buyukozturk, O., " Peel and shear fracture characterization of debonding in FRP plated concrete affected by moisture" , *ASCE Journal of Composites for Construction*, Vol.10, No.1, pp. 35-47, 2006.
14. Buyukozturk, O., Yu, T.-Y., and Ortega, J.A., " A methodology for determining complex permittivity of construction materials based on transmission-only coherent, wide-bandwidth free-space measurements" , *Cement and Concrete Composites*, Vol.28, No.4, pp.349-359, 2006.
15. Au, C. and Buyukozturk, O., " Effect of fiber orientation and ply mix on fiber reinforced polymer-confined concrete", *Journal of Composites for Construction, ASCE*, Vol.9, No.5, pp. 397-407, 2005.

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