

Publications and Presentations

Peer Reviewed Publications

1. Mueller, D., Ashur, S., Bi, Z., Moor, S., **Ray, I.**, (2017) "Use of CAD software to solve Trigonometry and Vector Problems.", Transactions on Techniques on STEM Education, Vol. 2, No.2, pp 93-100
2. Kar, A., **Ray, I.** Halabe, U B., and Unnikrishnan, A. (2016) "Physicochemical and Microstructural Characterizations of Alkali-Activated Binder Systems," International Journal of Structural and Civil Engineering Research, Vol 5, No.2 , pp 119-129
3. Kar, A., **Ray, I.** Unnikrishnan, A, Halabe, U B. (2016) "Prediction Models for Compressive Strength of Concrete with Alkali-Activated Binder," Computers and Concrete, Vol 17, No 4, pp 523-540
4. Kar, A., Halabe, U B, **Ray, I.** Unnikrishnan, A, (2015) Comparisons of Linear Regression Models for Properties of Alkali Activated Binder Concretes," European Scientific Journal, Vol.11, No.27, ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431, pp 1-17
5. Kar, A., **Ray, I.**, Halabe, U.B., Unnikrishnan, A., and Dawson-Andoh, N. (2014) "Characterizations and Quantitative Estimation of Alkali-Activated Binder Paste from Microstructures," *International Journal of Concrete Structures and Materials (Springer)*, Vol.8, Issue 3, pp 213-228
6. Kar, A., **Ray, I.**, Halabe, U.B., Unnikrishnan, A., and Dawson-Andoh, N. (2014) "Characterizations and Quantitative Estimation of Alkali-Activated Binder Paste from Microstructures," *International Journal of Concrete Structures and Materials (Springer)*, Vol.8, Issue 3, pp 213-228
7. Roy, M., **Ray, I.**, Davalos, J.F., (2014) "High-performance Fiber Reinforced concrete: Development and Evaluations as Repairing Materials," *ASCE Journal of Materials in Civil Engineering*, Vol. 26, Issue 10, pp. 04014074-1-04014074-2
8. Kar, A., Halabe, U B., **Ray, I.**, and Unnikrishnan, A. (2013) "Nondestructive Characterizations of Alkali-activated Fly ash and/or Slag Concrete," European Scientific Journal, Vol.9, No.24 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431, pp 53-74
9. Kar, A., **Ray, I.**, Unnikrishnan, A., Davalos, J.F. (2013) "Composite Modeling to Predict Shrinkage from C-S-H for Concretes Containing Supplementary Cementitious Materials," *Construction and Building Materials*. Vol 43, pp 139-155
10. **Ray, I.**, Fan, D., Davalos, J.F., and Kar, A., (2013) "Durability Evaluations of Bridge deck High-performance Concrete" *International Journal of Structural Engineering (IJStruc.E)*, Vol. 4, Nos ½, pp 35-62
11. Davalos, J.F., Parish, G., Chen, A. and **Ray, I.** (2013) "Effect of Anchoring Schemes for Beams Aged by Accelerated Corrosion and Strengthened with Carbon Fiber Reinforced Polymer," *Structure and Infrastructure Engineering*, Vol. 9, Issue 3, pp 229-241
12. Kar, A., **Ray, I.**, Unnikrishnan, A., Davalos J.F., (2012) "Estimation of C-S-H and Calcium Hydroxide for Cement Pastes Containing Slag and Silica Fume." *Construction and Building Materials*, Vol. 30, pp 505-515
13. **Ray, I.**, Gong, Z., Davalos, J.F., and Kar, A., (2012) "Shrinkage and Cracking Studies of High-performance Concrete Bridge deck," *Construction and Building Materials*, Vol. 28, pp 244-254
14. Davalos J. F., Chen Y., and **Ray, I.**, (2012) "Long-term Durability Prediction Model for GFRP Bars in Concrete Environment," *Journal of Composite Materials*, Vol. 45, pp 1899-1914

15. Kar, A., **Ray, I.**, Unnikrishnan, A., Davalos J.F. , (2012) "Microanalysis and optimization-based estimation of C-S-H contents of cementitious systems containing fly ash and silica fume," *Cement and Concrete Composites*, Vol. 34, pp 419-429
16. Davalos, J.F., Chen, A., **Ray, I.**, Levan, J. (2011) "A Comprehensive Study on Using Externally Bonded FRP Composites for the Rehabilitation of Reinforced Concrete T-beam Bridges," *Journal of Infrastructure Systems*, ASCE, Vol. 18 (2), pp 89-102
17. **Ray, I.**, Parish, G., Davalos, J.F., and Chen, A. (2011) "Effect of Concrete Substrate Repair Methods for Beams Aged by Accelerated Corrosion and Strengthened with CFRP," *Journal of Aerospace Engineering*, ASCE , Vol. 24, No. 2, pp 227-239
18. Zou, B., Davalos, J.F., Chen, A., and **Ray, I.** (2011) "Evaluation of Load Distribution Factor by Series Solution for Orthotropic Bridge Decks," *Journal of Aerospace Engineering*, ASCE, Vol. 24, No. 2, pp 240-248
19. Mahmoud, A.M., Ammar, H., Mukdadi, O.M., **Ray, I.**, Imani, F.S., Chen, A., and Davalos, J. F. (2010) "Non-Destructive Ultrasonic Evaluation of CFRP-Concrete Specimens Subjected to Accelerated Aging Conditions," *NDE & T International*, Vol.43, No. 7, pp 635-641
20. **Ray, I.**, Davalos, J. F., and Sun, Z. (2010) "Design of Experiment and Statistical Analysis of Bond Strength Test of Bi-layer Concrete", *International Journal of Materials and Product Technology*, Vol. 39, No.3/4, pp. 333-347
21. Uchoa, S. B., **Ray, I.**, Davalos, J. F., and Tonholo, J., (2009) "Comparative Studies of Chloride Permeability, Conductivity, Salt-ponding Tests of Concrete Containing Different Admixtures," *International Journal of Modelling, Identification and Control*, Vol. 7, No. 2, pp 160-170.
22. Davalos, J. F., Kodakani, S., **Ray, I.**, and Lin, C., (2008) "Fracture Evaluation for GFRP-Concrete Interfaces for Freeze-thaw and Wet-dry cycling," *Journal of Composite Materials*, Vol. 42, No. 14, pp 1439-1466
23. Davalos, J. F., Chen, Y., and **Ray, I.**, (2008) "Effect of FRP Bar Degradation on Interface Bond with High-Strength Concrete", *Cement and Concrete Composites*, Vol. 30, No. 8, pp 722-730
24. Bhattacharya, A., **Ray, I.**, and Davalos, J. F., (2008) "Effects of Aggregate Grading and Admixture/Filler on Self-Consolidating Concrete", *The Open Construction and Building Technology Journal, Bentham*, Vol. 2, pp 89-95
25. Boyajian, D. M., **Ray, I.**, and Davalos, J. F., (2007) "Freeze-thaw Cycling under a Calcium Chloride Environment: Effects on CFRP Strengthened Concrete Structures", *International Journal of Materials and Product Technology*, Vol. 28, No. 1/2, pp 89-102
26. Chen, Y., Davalos, J. F., **Ray, I.**, and Kim, H. Y., (2007) "Accelerated Aging Tests for Evaluations of Durability Performance of FRP Reinforcing Bars for Concrete Structures", *Composite Structures* , Vol. 78, No. 1, pp 101-111
27. Chen, Y., Davalos, J. F., and **Ray, I.**, (2006) "Durability Prediction for GFRP Reinforcing Bars Using Short-term Data of Accelerated Aging Tests", *Journal of Composites for Construction*, ASCE, Vol. 10, No. 4, pp 279-286
28. Davalos, J. F., Kodkani, S., and **Ray, I.**, (2006) "Fracture Mechanics Methods for Mode-I Interface Evaluations of FRP Bonded to Concrete Substrate", *Journal of Materials for Civil Engineering*, ASCE, Vol. 18, No. 5, pp 732-742
29. Davalos, J. F., Kodkani, S., **Ray, I.** and Boyajian, D., (2005) "A fracture mechanics approach for interface durability of surface bonded FRP to concrete", *7th International Symposium on Fiber Reinforced Polymer Reinforcement for Reinforced Concrete Structures (FRPRCS7)*, ACI- SP 230, Paper # D-08, Kansas City, MO, ACI Special Publication

30. **Ray, I.**, Davalos, J. F., Gong, Z. and Chatterjee, A., (2005) “Mechanical properties of high-performance concrete made for bridge decks using West Virginia aggregates”, *7th International Symposium on the Utilization of High-Strength/High-Performance Concrete*, ACI- SP-228-56, ACI, Washington DC, ACI Special Publication
31. Davalos, J. F., **Ray, I.**, Sun, Z. and Hong, T., (2005) “Interface bond characterization of high-performance concrete overlays and substrate”, *7th International Symposium on the Utilization of High-Strength/High-Performance Concrete*, ACI- SP-228-57, ACI, Washington DC, ACI Special Publication
32. **Ray, I.**, Julio F. Davalos, J. F., and Luo, S., (2005) “Interface Evaluations of Overlay Concrete Bi-layer Composites by a Direct Shear Test”, *Cement and Concrete Composites*, Vol. 27, pp 339-347
33. Boyajian, D. M., Davalos, J. F., and **Ray, I.**, (2005) “Appraisal of the Novel Single Contoured-cantilever Beam”, *Journal Materials and Structures*, RILEM, France, Vol. 38, pp 11-16
34. Chakraborty, A. K., Dutta, S. and **Ray, I.**, (2000) “Variation in Effect of Acrylic Latex with Change in Water to Cement Ratio of Silica Fume Modified Superplasticised Concrete or Mortar”, *Journal of Institution of Engineers*, Civil Engineering Division, India, Vol. 80, No. 4, pp 186 -190
35. Chakraborty, A. K., Dutta, S., Sen, P., and **Ray, I.**, (2000) “Improved Performance of Silica Fume Modified Mortar due to Addition of Polymer Emulsions”, *Journal of Polymer Materials*, Vol. 17, No.1, pp 53-62
36. Chakraborty, A. K., Dutta, S., and **Ray, I.**, (1999) “Effect of Acrylic Latex on Silica Fume Modified Superplasticised Mortar in Various Water to Cement Ratio Ranges”, *Indian Concrete Institute Journal*, Vol. 69, No. 2, pp 29-31
37. **Ray, I.**, Gupta, A. P., and Biswas, M., (1996) “Physicochemical Studies on Single and Combined Effect of Latex and Superplasticiser on Portland Cement Mortar”, *Cement and Concrete Composites*, Vol. 18, pp 343-355
38. **Ray, I.**, Gupta, A. P., and Biswas, M., (1996) “Cementitious Systems Modified with Binary Admixture – Areas of Needed Research”, *Civil Engineering*, ASCE (India), pp 8-12
39. **Ray, I.**, Gupta, A. P., and Biswas, M., (1995) “Effect of Latex and Superplasticiser on Portland Cement Mortar in the Hardened State”, *Cement and Concrete Composites*, Vol. 17, No.1, pp 9-21
40. **Ray, I.**, Gupta, A. P., and Biswas, M., (1994) “Effect of Latex and Superplasticiser on Portland Cement Mortar in the Fresh State”, *Cement and Concrete Composites*, Vol. 16, pp 309-316
41. Kar, A., **Ray, I.**, Halabe, U.B., Unnikrishnan, A., and Dawson-Andoh, B. (2015) “Microstructural Characterizations of Alkali-Activated Fly ash and/or Slag Binder System” UK-India Education Research Initiative Concrete Congress, Concrete Research Driving Profit and Sustainability, Jalandhar, Punjab, India, November 2-5, 2015 (accepted)
42. Mueller, D.W, Ashur, S., Bi, Z., Moor S.S, **Ray, I.** (2015) “Use of CAD software to Solve Trigonometry and Vector Problems” American Society of Engineering Education, Indiana- Illinois Section Conference 2015, IPFW, Fort Wayne, IN 46805, March 27-28, 2015
43. Imani F.S., **Ray, I.**, Chen, A., and Davalos J.F. (2013) “Evaluations of CFRP-Concrete Interface Subjected to Accelerated Ageing Test” Proceedings American Society for Composites, 28th Technical Conference, State College, Pennsylvania, Edited by Charles Bakis, DEStech Publications, Inc., ISBN 978-1-60595-107-2, Sep 9-11, 2013
44. Imani F.S., Chen, A., Davalos, J.F., and **Ray, I.** (2013) “An Exploratory Study on Mode II Fracture Evaluation of CFRP-Concrete Interface using Novel Displacement-based Approach” Proceedings American Society for Composites, 28th Technical Conference, State College, Pennsylvania, Edited by Charles Bakis, DEStech Publications, Inc., ISBN 978-1-60595-107-2, Sep 9-11, 2013
45. Kar, A., **Ray, I.**, Unnikrishnan, A., Davalos, J.F., and Chen, A. (2012) “Prediction of Shrinkage of Concrete Containing Fly ash and/or Silica fume using Composite Modeling”, 13th ASCE

- Aerospace Division Conference on Engineering, Construction, and Operations in Challenging Environments, ASCE Earth and Space 2012 conference, Pasadena, California
46. McGraw, B., Chen, A., Davalos, J.F., and **Ray, I.** (2012) "Evaluation of Wood Composite I- Joist with Sinusoidal Web", 13th ASCE Aerospace Division Conference on Engineering, Construction, and Operations in Challenging Environments, ASCE Earth and Space 2012 conference, Pasadena, California
 47. Jiao, P., McGraw, B., Chen, A., Davalos, J.F., and **Ray, I.** (2012) "Flexural-torsional Buckling of Cantilever Composite Wood I-Joist with Sinusoidal Web Geometry", 13th ASCE Aerospace Division Conference on Engineering, Construction, and Operations in Challenging Environments, ASCE Earth and Space 2012 conference, Pasadena, California
 48. Zahabi, M., Chen, A., Davalos, J.F., and **Ray, I.** (2012) "A Unified Mode-II Long-term Traction-Separation Law for Carbon FRP-Concrete Interface", 13th ASCE Aerospace Division Conference on Engineering, Construction, and Operations in Challenging Environments, ASCE Earth and Space 2012 conference, Pasadena, California
 49. Mahmoud, A.M., Ammar, H., Mukdadi, O.M., **Ray, I.**, Imani, F.S., Chen, A., and Davalos, J. F. (2011). "Ultrasonic Evaluation of CFRP-Concrete Interface for Specimens under Temperature and Water-Immersion Aging Effects", *Proceedings of the 5th International Conference on FRP Composites in Civil Engineering-CICE 2010*, Beijing, China, September 27-29, Advances in FRP Composites in Civil Engineering
 50. Imani, F. S., Chen, A., Davalos, J.F., and **Ray, I.**, (2011). "Temperature and Moisture Effects on Mode II Fracture Behavior of CFRP-Concrete Interface", *Proceedings of the 5th International Conference on FRP Composites in Civil Engineering*, Beijing-CICE 2010, China, September 27-29, Advances in FRP Composites in Civil Engineering
 51. Anderson, M., **Ray, I.**, Davalos, J.F., Chen, A. (2011). "A Study on the Applicability of ECE Technique on Chloride Contaminated Concrete Beams Retrofitted with FRP Strips", *Proceedings of the 5th International Conference on FRP Composites in Civil Engineering-CICE 2010*, Beijing, China, September 27-29, Advances in FRP Composites in Civil Engineering
 52. Davalos, J.F, Vantaram, A., Chen, A., **Ray, I.**, and Plunkett, J.D. (2011). "Honeycomb Fiber-Reinforced Polymer Sandwich Panels for Fish Culture Tanks", *Proceedings of the 5th International Conference on FRP Composites in Civil Engineering-CICE 2010*, Beijing, China, September 27-29, Advances in FRP Composites in Civil Engineering
 53. Davalos, J.F., Chen, A., and **Ray, I.** (2011) "A Sustainable Rehabilitation System of Reinforced Concrete T-Beam Structures Using Externally Bonded FRP Composites," Joint Structural Division Annual Seminar, 2011 Joint Structural Division Annual Seminar 2011: Meeting the Challenge of Low Carbon Emission, 14 June 2011, Sponsored by The Hong Kong Institute of Engineers,, **Invited Paper**
 54. Uchoa, S. B., Tonholo, J., **Ray, I.**, and Davalos, J. F. (2010) "Effect of Temperature on Rapid Chloride Permeability Test- ASTM C 1202", *Anais do 52nd Congresso Brasileiro do Concreto CBC*, IBRACON, pp 1-15
 55. Davalos, J. F., Chen, A., **Ray, I.**, and Levan, J. (2010). "A Systematic Study of Rehabilitation of Reinforced Concrete T-beam Structures using Externally Bonded FRP Composites", *Proceedings of the 5th International Conference on FRP Composites in Civil Engineering-CICE 2010*, Beijing, China, September 27-29
 56. Bhattacharya, A., **Ray, I.**, Davalos, J. F., and Chen A. (2010). "Restrained Shrinkage Cracking of Self-Consolidating Concrete", Short Paper, *Proceeding of 16th US National Congress of Theoretical and Applied Mechanics (USNCTAM 2010)*, State College, PA
 57. Mahmoud, A.M., Ammar, H., Mukdadi, O.M., **Ray, I.**, Imani, F.S., Chen, A., and Davalos, J.F. (2010). "Ultrasonic Evaluation of CFRP-Concrete Interface for Specimens under Temperature and

- Water Immersion Aging Effects", Short Paper, *Proceeding of 16th US National Congress of Theoretical and Applied Mechanics (USNCTAM 2010)*, State College, PA.
58. Imani, F.S., Chen, A., Davalos, J.F., and **Ray, I.**, (2010) "Characterization of Mode II Fracture Behavior of CFRP-Concrete Interface Using J-integral method", Short Paper, *Proceeding of 16th US National Congress of Theoretical and Applied Mechanics (USNCTAM 2010)*, State College, PA.
 59. Davalos, J.F., Chen, A., **Ray, I.**, and Levan, J. (2010) "Rehabilitation of Reinforced Concrete T-beam Structures using Externally Bonded FRP Composites", *12th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments*, Honolulu, Hawaii
 60. Imani, A.S., Chen, A., Davalos, J.F., and **Ray, I.**, (2010) "Temperature and Moisture Effects on Mode II Fracture Behavior of CFRP-Concrete Interface", *Proceedings of 12th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments, Earth and Space*, Honolulu, Hawaii
 61. Konduru, S., **Ray, I.**, Davalos, J.F., Chen, A. (2010) "Evaluations of Latex Modified Concrete Overlay Bonded to Normal Concrete Deck", *Proceedings of 12th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments, Earth and Space*, Honolulu, Hawaii
 62. Anderson, M., **Ray, I.**, Davalos, J.F., Chen, A. (2010) "Exploratory Study on ECE Technique for Chloride Removal from Concrete Beams Retrofitted with FRP Strips", *Proceedings of 12th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments, Earth and Space*, Honolulu, Hawaii
 63. Imani, F., Chen, A., Davalos, J., and **Ray, I.** (2010), "Model II Fracture Evaluation of CFRP-Concrete Interface Using Accelerated Aging Test," *Proceedings of 12th ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments, Earth and Space*, Honolulu, Hawaii
 64. Levan, J. R., Chen, A., **Ray, I.**, Justice, A., Anderson, M., Parish, G., and Sasher, W., (2009) "Externally Bonded FRP Composites for the Rehabilitation of Reinforced Concrete T-beam Bridges", *Proceedings of the 26th Annual International Bridge Conference (IBC 2009)*, Pittsburgh, PA
 65. **Ray, I.**, (2009) "PCI Participates in WVU Research Project.", *Potomac Construction Industry Business Website*, (<http://www.pci-potomac.com/hlwvu.shtml>), **Invited Article**
 66. Parish, G., Davalos, J. F., **Ray, I.**, (2009) "CFRP Repair of Concrete Beams Aged by Accelerated Corrosion", *Proceedings of the 9th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures (FRPRCS-9)*, Sydney, Australia
 67. Davalos, J. F., Chen, Y., and **Ray, I.**, (2009) "Durability Predictions of GFRP Bars in Concrete," *Proceedings of the 9th International Symposium on fiber-Reinforced Polymer Reinforcement for Concrete Structures (FRPRCS-9)*, Sydney, Australia
 68. Uchoa, S. B., Ribeiro, A. S., Tonholo, J., Amorim, T. F. D., **Ray, I.**, (2009) "Concrete electrical resistivity as a simple and rapid method to assess concrete resistance to chloride penetration", *Proceedings 11th international Conference on Advanced Materials*, ICAM, Rio de Janeiro, Brazil
 69. Davalos, J. F., Chen, Y., and **Ray, I.**, (2008) "Design of Concrete Structures Reinforced with FRP Bars: A Critical Reviews of Codes and Standards", *Proceedings of the 5th International Conference on Advanced Composites Materials in Bridges and Structures*, Winnipeg, Manitoba, Canada
 70. Davalos, J. F., Lin, C., **Ray, I.**, Sasher, W., Parish, G. and Barth, K. E., (2008) "Performance evaluations and FRP Repair of Concrete T-beam Bridges", *Proceedings of The 5th*

- International Conference on Advanced Composites Materials in Bridges and Structures*, Winnipeg, Manitoba, Canada
71. Bhattacharya, A., **Ray, I.**, and Davalos, J.F., (2008) “Comparative evaluations of self-consolidating concrete using West Virginia aggregates”, *Third North American Conference on Design and Use of Self-consolidating Concrete*, ACBM, Chicago, USA
 72. Davalos, J. F., Chen, Y., and **Ray, I.**, (2008) “Numerical Modeling of Interface Bond Between Concrete and FRP Bars”, *Advanced Materials, Structures and Mechanics –11th International Conference on Engineering, Science, Construction, and Operations in Challenging Environments*, Aerospace Division of ASCE, Earth and Space Conference, Long Beach, California, USA, March 3-5, 2008
 73. **Ray, I.**, Davalos, J. F., and Hong, T., (2008) “Characterization of Interface Properties of High-Performance Concrete Overlays and Normal Concrete Substrate”, *Advanced Materials, Structures and Mechanics -11th International Conference on Engineering, Science, Construction, and Operations in Challenging Environments*, Aerospace Division of ASCE, Earth and Space Conference, Long Beach, California, USA, March 3-5, 2008
 74. Davalos, J. F., Lin, C., **Ray, I.**, Sasher, W., Parish, G. and Barth, K. E., (2008) “Performance Evaluations and FRP Repair of Concrete T-beam Bridges”, *Proceedings of the 5th International Conference on Advanced Composites Materials in Bridges and Structures (ACMBS-V)*, Winnipeg, Manitoba, Canada
 75. **Ray, I.**, Davalos, J. F., and Morris, J., (2007) “Shrinkage and Cracking Evaluations of High-performance Concrete for Bridge Decks in West Virginia”, *International Conference on Civil Engineering in the New Millennium, Opportunities and Challenges*, India, Vol. 2, pp 1091-1098
Invited Paper
 76. Chen, Y., Davalos, J. F., and **Ray, I.**, (2007)“Durability of GFRP Reinforcing Bars in Concrete Environment”, *International Conference on Civil Engineering in the New Millennium, Opportunities and Challenges*, India, Vol. 2, pp 782-796, **Invited Paper**
 77. **Ray, I.**, Davalos, J. F., and Fan, D., (2007) “Combined Freeze-thaw and Deicing Salt Tests for High-performance Concrete”, *Proceedings of the First International Conference on Recent Advances in Concrete Technology*, Washington D.C., pp 241-252
 78. Davalos, J. F., **Ray, I.**, Sothen, J. E., Baiely, G. L., and Shook, J. D., (2007)“Overview of Advanced Concrete Materials Development for Bridge Decks of West Virginia”, *Proceedings of the First International Conference on Recent Advances in Concrete Technology*, Washington D.C., pp 583-597
 79. Davalos, J. F., Lin, C., **Ray, I.**, Sasher, W., Parish, G. and Barth, K. E., (2007) “A comprehensive program for repair with external FRP of concrete T-beam bridges in Pennsylvania DOT-USA”, *Proceedings of the 8th International Symposium on Fiber Reinforced Polymer Reinforcement for Reinforced Concrete Structures (FRPRCS8)*, University of Patras, Greece
 80. Chen, Y., Davalos, J. F., and **Ray, I.**, (2007) “Life-cycle durability prediction models for GFRP bars in concrete under sustained loading and environmental exposure”, *Proceedings of the 8th International Symposium on Fiber Reinforced Polymer Reinforcement for Reinforced Concrete Structures (FRPRCS8)*, University of Patras, Greece
 81. Davalos, J. F., Lin, C. and **Ray, I.**, (2006) “An Overview of Rehabilitation of Concrete Structures with Externally Applied FRP Composites”, *Proceedings of the 7th International Conference on Durability of Composite Systems*, Blacksburg, VA
 82. Davalos, J. F., Lin, C. and **Ray, I.**, and Brayack, D.A., (2005) “Applications of externally bonded composites for concrete repair and rehabilitation”, *ASC, 20th Technical Conference*, Drexel University, PA

83. Chen, Y., Davalos, J. F., and **Ray, I.**, and Kim, H. Y., (2005) "Critical short-term data on durability of FRP reinforcing bars for long-term prediction models", *ASC, 20th Technical Conference*, Drexel University, PA
84. Davalos, J. F., Kodkani, S., **Ray, I.**, (2004) "Durability of GFRP-Concrete interface subjected to Alternate Wetting and Drying", *Advanced Composite Materials in Bridges and Structures*, Calgary, Alberta
85. Boyajian, D. M., **Ray, I** and Davalos, J. F., (2003) "Freezing and thawing effects on the fracture toughness of concrete-CFRP- interfaces", *14th International Conference on Composite Materials (ICCM-14)*, San Diego, CA
86. Davalos, J. F., Boyajian, D. M., Kodkani, S., **Ray, I** and Qiao, P., (2004) "Interface Fracture and durability of GFRP- and CFRP- concrete subject to freeze-thaw and wet-dry cycle", *IMTCR-04 Conference*, Lecce, Italy
87. **Ray, I.**, Davalos, J. F. and Morris, J., (2004) "Strength and shrinkage of high-Performance concrete for bridge deck applications, *IMTCR-04 Conference*, Lecce, Italy
88. Davalos, J. F., **Ray, I** and Luo, S., (2004) "Performance evaluations of bond between special and normal concrete using modified shear tool, *IMTCR-04 Conference*, Lecce, Italy,
89. Davalos, J. F., Boyajian, D. M., Kodkani, S., and **Ray, I.**, (2003) "Freeze-thaw durability of interface for externally bonded GFRP to normal and high-performance concrete", *18th Annual Technical Conference*, American Society for Composites , Gainesville, FL
90. **Ray, I.**, Davalos, J. F., Luo, S. and El-Amin, R., (2002) "Interface characterization of overlay-substrate cementitious composites by direct shear test", *International SAMPE Technical Conference*, Baltimore, MD, pp 644-654
91. Davalos, J. F., Kodkani, S., **Ray, I** and Boyajian, D., (2002) "The CFRP-Concrete interface subjected to sodium-sulfate and -hydroxide attack", *17th Annual Technical Conference*, American Society for Composites , West Lafayette, IN
92. Davalos, J. F., Boyajian, D. M., **Ray, I** and Qiao, P., (2002) "Evaluation of interface fracture of concrete externally reinforced with FRP", *2nd International Conference on Durability of Fiber Reinforce Polymer (FRP) composites for construction (CDCC)*, Montreal, Quebec, Canada, pp 309-320
93. Chakraborty, A. K., **Ray, I** and Sengupta, B., (2001) "Mechanical and physico-chemical properties of Silica Fume Modified High-Slump Concrete", *Seventh CANMET/ ACI International Conference of Fly Ash, Silica Fume, Slag and Natural Pozzolans in Concrete*, Madras, India
94. Bhanja, S., **Ray, I** and Sengupta, B., (2001) "Influence of silica fume on high strength concrete", *World Congress in sustainable development, World Congress in sustainable development* Institution of Engineers (India) and World Federation of Engineering organization, Vol. 1, pp 547-550
95. **Ray, I.**, Gupta, A. P. and Biswas, M., (2000) Physicochemical properties of polymer modified mortar- A characterization through XRD, TG/DSC and IR", *World Congress in sustainable development*, Institution of Engineers (India) and World Federation of Engineering organization, Vol. 1, pp 511-517
96. **Ray, I** and Chattopadhyay R., (1999) "Effect of silica fume on latex-superplasticiser concrete", *International Congress 'Creating with Concrete*, Modern concrete materials: binders, additions and admixtures (Thomas Telford) Dundee, Scotland, UK, pp 457-465
97. **Ray, I.**, De, A., and Chakraborty, A. K., (1999) "Influence of silica fume on high slump concrete", *International conference on concrete technology for developing countries*, Fifth International Conference on Concrete Technology for Developing Countries, National Council for Cement and Building Materials, New Delhi, India, Nov 17-19, 1999, pp. II 86- II 93
98. **Ray, I.**, (1998) "Structure Property Relationship of Portland Cement Mortar or Concrete", *Futurio, Journal of State Service Engineers*, Autumn, pp 13-18 **Invited Paper**

99. **Ray, I.,** Gupta, A. P. (1998) "Combined effect of latex and superplasticiser on Portland cement concrete", *Proceedings National seminar on Performance Enhancement of Cements and Concretes by Use of Fly ash, Slag, Silica fume and chemical admixtures*, National Council of Cement and Building Materials, New Delhi, Jan 15-17, 1998, pp II 303-II 313
100. **Ray, I.,**(1988) "Chemical admixtures: Present status of Indian Code and suggested improvement," *Futurio, Journal of State Service Engineers*, Autumn, pp 7-12 **Invited Paper**

Other Conference Papers

101. Davalos, J. F., Parish, G., Chen, A., and **Ray, I.,** (2009) "Repair of Concrete Beams Aged by Accelerated Corrosion using Externally Bonded CFRP Fabrics", In Abstract, *2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials*, Blacksburg, VA
102. Hong, T., Davalos, J. F., and **Ray, I** (2007) "Early age curling and delamination behavior of overlays", *1^{8th} Engineering Mechanics Division Conference of ASCE*, Virginia Tech, Blacksburg, Virginia, USA
103. **Ray, I.,** Davalos, J. F., Gong, Z., (2007) "Evaluations of fracture mechanics properties of high-performance concrete", *18th Engineering Mechanics Division Conference of ASCE*, Virginia Tech, Blacksburg, Virginia, USA
104. Uchoa, S. B., Tonholo, J., Davalos, J. F., and **Ray, I.,** (2007) "Effect of corrosion inhibitors in concrete with mineral admixtures", *6th Brazilian MRS Meeting*, SBP Mat
105. Davalos, J. F., Lin, C. and **Ray, I.,**(2006) "An Overview of Rehabilitation of Concrete Structures with Externally Applied FRP Composites", *7th International Conference on Durability of Composite Systems*, Blacksburg, VA
106. Davalos, J. F., Chen, Y. and **Ray, I.,** (2006) "Durability Predictions for GFRP Reinforcing Bars in Concrete Environment", *7th International Conference on Durability of Composite Systems*, Blacksburg, VA
107. Chakraborty, A. K., **Ray, I.** and Sengupta, B., (2001) "Properties of silica fume modified high slump concrete using OPC and slag cement", *International Symposium on Sustainable Development and Concrete Technology*, San Francisco, CA
108. Chakraborty, A. K., **Ray, I.** and Sengupta, B., (2001) "High performance concrete for containment structures", *16th International conference on structural Mechanics in Research Technology*, Washington DC
109. Sen S. B. and **Ray, I.** (2000) "Assessing the impact of fire on structural element of RCC construction and effect of admixtures on concrete for restoration purpose", *National Seminar on Fire Safety in Buildings by Loss and Prevention Society of India*
110. **Ray, I.,** and Chakraborty, A. K., (1998) "Specialty admixtures: A State of the Art Report", *All India Seminar on Construction chemicals: Present status and scope for Improvement*, Institution of Engineers (India), pp 23-28
111. **Ray, I.,** (1998) "Present status of Indian specification for chemical admixtures for concrete and scope for improvements", *All India Seminar on Construction chemicals: Present status and scope for Improvement*, Institution of Engineers (India), pp 31-35
112. Chattopadhyay, R. and **Ray, I.,** (1998) "High Performance Concrete containing Indian OPC, silica fume and ASTM Type F&G superplasticiser", *Proceedings International Seminar on A Quest for Materials in 21st century*, ASCE, Calcutta, India
113. Chakraborty, A. K., Dutta, S., Sen, P., and **Ray, I.,** (1998) "Mortar modified with ternary admixture systems : A high performance repairing materials", *International Symposium on Innovative world of concrete*, Calcutta, India, Vol. 2, pp 4.91-4.98

114. **Ray, I.**, Gupta, A. P. and Biswas, M., (1995) “Physicochemical and microstructural characteristics of polymer modified mortar”, *Seminar on Advances in special concrete*, BE College (DU), Howrah India (1995)
115. **Ray, I.** and Sengupta, B., (1995) “Utilization of High-carbon fly ash for the preparation of concrete”, *Seminar on Advances in special concrete*, BE College (DU), Howrah India
116. **Ray, I.** and Gupta, A. P., (1994) “Portland cement mortar matrix modified with polymeric latex and superplasticizer – A laboratory study”, *National seminar on composite materials*, IGIT and Ministry of Human Resources Dev., India
117. **Ray, I.**, (1994) “Deterioration of industrial concrete structures by corrosive chemicals and its necessary protection”, *All India seminar on Environment and Civil Engineering Structures*, Institutions of Engineers (India)
118. **Ray, I.** and Gupta, A. P., (1994) “Chemical Deterioration of Marine Concrete and its Prevention: A brief Review”, *Seminar on: Our environment: its challenges to development project*, ASCE(India section), India
119. Singh, S. P., **Ray, I.** and Gupta, A. P., (1992) “Laboratory development of construction materials”, *All India Seminar on New Materials in construction*, Institution of Engineers (India)
120. Basak, G. and **Ray, I.**, (1990) “High strength concrete for bridge using superplasticiser”, *All India seminar on “Future bridges: Steel or concrete*, Institution of Engineers (India
121. **Ray, I.**, Mukherjee, S. and Gangopadhyay, A., (1989) “Interactive Evaluation technique for rural water supply”, *5th National Convention of Civil Engineers*, Institution of Engineers (India)
122. **Ray, I.**, Sengupta, B., and Chattopadhyay, B., (1989) “Utilization of local aggregates for the production of quality concrete”, *National Seminar on Quality assurance in concrete*, Indian Concrete Institute
123. **Ray, I.**, (1989) “Shortcomings in the IS codes for the production of controlled concrete using admixtures”, *National Seminar on concrete Design and Construction practices*, Indian Concrete Institute
124. **Ray, I.**, (1989) “Classification and proper specification for chemical admixtures in construction Industry”, *5th National Convention of Civil Engineers*, Institution of Engineers (India)
125. **Ray, I.**, and Mukherjee, S., (1988) “Maintenance of Buildings versus strict supervision and alertness during design and construction”, *All India seminar on Maintenance of Civil Engineering structures and systems*, Institution of Engineers (India)
126. **Ray, I.**, (1988) “Identification of Chemical deterioration of concrete in marine structures and its possible remedies”, *All India Seminar on Durability of Concrete in coastal area*, Institution of Engineers (India)

Technical Reports

1. **Ray, I.** (2012) "Center for Transportation Security and Infrastructure Innovations- Trans-I², Final report, WV Experimental Program to Stimulate Competitive Research (EPSCoR), Project 10010251, Award 1003916R
2. Chen, A., **Ray, I.**, Wattick, J.A., and Pertl, E. (2012), “Energy Efficient and Seismic/Blast Resistance Buildings with Concrete Filled FRP Sandwich Wall Panels,” Final Report, WVU Program to Stimulate Competitive Research (PSCoR), Project 10008736, Award NT10055R
3. Davalos, J.F., **Ray, I.**, Gong, Z., Velez, S, Bhattacharya, A., Uchoa, S., and Kar, A., (2011) “ High-Performance Concrete Mixes for Cast-in-place Bridge Decks in West Virginia (Phase-II), RP-209, Draft Final Report, West Virginia Department of Transportation, Division of Highways, Charleston, West Virginia

4. Davalos, J.F., **Ray, I.**, Konduru, S., Hong, T., Meadway, J., Kar, A., (2011) “ Concrete Overlays for Bridge Decks in West Virginia (Phase-II), RP-209, Draft Final Report, West Virginia Department of Transportation, Division of Highways, Charleston, West Virginia
5. Davalos, J. F., Chen, A., **Ray, I.**, Justice, A., and Anderson, M., (2010) “District 3-0 Investigation of Fiber-wrap Technology for Bridge Repair and Rehabilitation (Phase III)”, **Monograph**, Final Report, Commonwealth of Pennsylvania, Department of Transportation, Contract No 510401, Report No FHWA-PA-2010-002-510401-014, Sponsored by Pennsylvania Department of Transportation, Bureau of Planning and Research, Harrisburg, PA 17120 and US Department of Transportation, Research and Innovative Technology Administration, 1200 New Jersey Ave, SE, Washington, DC 20590
7. Davalos, J. F., Chen, A., **Ray, I.**, Justice, A., and Anderson, M. (2009) “Interim Report: Task 4- Testing of Repaired Structure, District 3-0 Investigation of Fiber-wrap Technology for Bridge Repair and Rehabilitation (Phase III)”, Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120, PennDOT-MAUTC Partnership
8. Davalos, J. F., **Ray, I.**, Justice, A., Sascher, W. and Parish, G., (2008) “Task 2 Assisting with QC and Field Performance Tests of Repair and Task 3 Evaluating FRP, Concrete and FRP-Concrete in-situ Materials”, Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120, PennDOT-MAUTC Partnership
9. Davalos, J. F., Barth, K. E., **Ray, I.**, Justice, A., Parish, G. and Sascher, W., (2008) “Task 1 Report: Planning Activities for Field Work and Research”, Submitted to Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120, PennDOT-MAUTC Partnership
10. Davalos, J. F., Barth, K. E., **Ray, I.**, Lin, C., Parish, G. and Sascher, W., (2007) “Final Report on Project Titled: District 3-0 Investigation of Fiber-wrap Technology for Bridge Repair and Rehabilitation (Phase-II)”, Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120
11. Davalos, J. F., Barth, K. E., **Ray, I.**, Lin, C., Parish, G. and Sascher, W., (2006) “Interim Report on Project Titled: District 3-0 Investigation of Fiber-wrap Technology for Bridge Repair and Rehabilitation (Phase-II)”, Submitted to Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120, PennDOT-MAUTC Partnership
12. Davalos, J. F., **Ray, I.**, Hong, T. and Sun, Z., (2006) “Draft Final Report on Advanced Materials Program, Task B: Concrete Overlays for Bridge Deck Repair and New Construction in West Virginia, Project no. T 699-AMP-1.00”, West Virginia Department of Transportation, Division of Highways
13. Davalos, J. F., **Ray, I.**, Gong, Z., Chatterjee, A. and Fan, D., (2006) “Draft Final Report on Advanced Materials Program, Task A: High-Performance Concrete Mixes for Cast-in-place Bridge Decks in West Virginia, Project no. T 699-AMP-1.00”, West Virginia Department of Transportation, Division of Highways
14. Davalos, J. F., Barth, K. E., **Ray, I.**, Lin, C., Brayack, D. A., Matzzie, D. and Tysl, S. R., (2005) “District 3-0 Investigation of Fiber-Wrap Technology for Bridge Repair and Rehabilitation (Phase-I), Pennsylvania Department of Transportation/Bureau of Planning and Research, Harrisburg, PA 17120, PennDOT-MAUTC Partnership
15. Davalos, J. F., **Ray, I.** and Barth, K. E., (2005) “Final Report on Exploratory Study on High-performance Concrete for Bridge Decks in West Virginia”, West Virginia Department of Transportation, Division of Highways
16. Davalos, J. F., **Ray, I.**, Gong, Z., Chatterjee, A. and Fan, D., (2005) “Second Interim Report on Advanced Materials Program, Task A: High-Performance Concrete (HPC Deck) Mixes for Cast-in-place Bridge Decks in West Virginia”, Project no. T 699-AMP-1.00, West Virginia Department of Transportation, Division of Highways
17. Davalos, J. F., **Ray, I.**, Hong, T. and Sun, Z., (2005) “Second Interim Report on Advanced Materials Program, Task B: Concrete Overlays for Bridge Deck Repair and New Construction in West Virginia, Project no. T 699-AMP-1.00”, West Virginia Department of Transportation, Division of Highways

18. Davalos, J. F., **Ray, I.** and Chen, Y., (2005) “Final Report on Evaluations of FRP-Concrete Interactions through Accelerated and Long-term Tests for Performance Requirements (Phase-I)”, Korean Institute of Construction Technology, Republic of Korea)
19. Davalos, J. F. and **Ray, I.**, (2004) “First Interim Report on Advanced Materials Program, Task A: High-Performance Concrete Mixes for Cast-in-place Bridge Decks in West Virginia, Project no. T 699-AMP-1.00”, West Virginia Department of Transportation, Division of Highways,
20. Davalos, J. F., and **Ray, I.**, (2004) “First Interim Report on Advanced Materials Program, Task B: Concrete Overlays for Bridge Deck Repair and New Construction in West Virginia, Project no. T 699-AMP-1.00”, West Virginia Department of Transportation, Division of Highways
21. Davalos, J. F., **Ray, I.**, and Chen, Y., (2004) “Interim Report on Evaluations of FRP-Concrete Interactions through Accelerated and Long-term Tests for Performance Requirements (Phase-I)”, Korean Institute of Construction Technology, Republic of Korea
22. Davalos, J. F., **Ray, I.**, and Chen, Y., (2004) “Mid-term Report on Evaluations of FRP-Concrete Interactions through Accelerated and Long-term Tests for Performance Requirements (Phase-I)”, Korean Institute of Construction Technology, Republic of Korea, February 27 (2004)

Technical Presentations (Invited and Others)

- **Technical Presentations - Invited (Selected few)**

1. Invited Faculty for Global Initiative of Academic Network to Conduct 1 week Course on Design and Application of FRP for Concrete Rehabilitations at NIT, Warangal, India, August , 2017
2. Invited speaker in North Eastern ASCE Chapter at Fort Wayne, IN- Cracking Studies of Bridge Decks and Fracture Evaluations, February 11, 2015, Fort Wayne, IN
3. Invited speaker in First International Collaboration Congress (ICC-1)- Advanced Materials for Construction and Rehabilitation of Civil Infrastructure, August12 - August 24, 2010, Guyanajuato, Mexico (2010)
4. Session Chair of 16th U.S. National Congress of Theoretical and Applied Mechanics, June 27 to July 2, 2010, State College, Pennsylvania, Session: Mechanics of Advanced Infrastructure Materials—II (2010)
5. Presented topics on Cracking of HPC at 19th ACBM/ NIST workshop at NIST, Gaithersburg, Maryland on 18th June (2008)
6. Chaired in session of ‘Advanced Materials, Structures and Mechanics – New Advances in the 21stCentury’ of Earth and Space Conference 2008-ASCE Division, Long Beach, CA, March (2008)
7. Invited to chair the session of 18th Engineering Mechanics Division Conference (EMD-2007) at Virginia Tech (2007)
8. Presented invited papers in International conference on “Civil Engineering in the New Millennium: Opportunities and Challenges”, B E College, India (2007)
9. Invited member of International panel of advisers in International conference on Civil Engineering in the New Millennium: Opportunities and Challenges”, B E College, India (2007)
10. Invited member of International panel of advisers in International conference on Civil Engineering in the New Millennium: Opportunities and Challenges”, B E College, India, January (2007)
11. Chaired in session of “Interface Mechanics” at 18th ASCE Engineering Mechanics Division Conference (EMD-2007), Blacksburg, VA, June (2007)

- **Technical Presentations (others)**

1. "Microanalysis and Optimizations to Estimate C-S-H and CH for Cement Modified with Supplementary Cementitious Materials." Presentation Only, *Presented at the 21 NIST Computer Modeling Workshop*, Gaithersburg, 2010
2. "Restrained Shrinkage Cracking of Self-Consolidating Concrete", Short Paper, *Proceeding of 16th US National Congress of Theoretical and Applied Mechanics (USNCTAM 2010)*, State College, PA, 2010
3. "Repair of Concrete Beams Aged by Accelerated Corrosion using Externally Bonded CFRP Fabrics", In Abstract, *2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials*, Blacksburg, VA, 2009
4. "Some cracking studies for high-performance concrete for bridge decks", Presentation Only, Presented at the 19th NIST Computer Modeling Workshop, Gaithersburg
5. "Comparative evaluations of self-consolidating concrete using West Virginia aggregates", *Third North American Conference on Design and Use of Self-consolidating Concrete*, ACBM, Chicago, USA
6. "Characterization of Interface Properties of High-Performance Concrete Overlays and Normal Concrete Substrate", *Advanced Materials, Structures and Mechanics -11th International Conference on Engineering, Science, Construction, and Operations in Challenging Environments, Aerospace Division of ASCE, Earth and Space Conference*, Long Beach, California, USA, March 3-5, 2008
7. "Combined Freeze-thaw and Deicing Salt Tests for High-performance Concrete", *The First International Conference on Recent Advances in Concrete Technology*, Washington D.C., pp 241-252
8. "Overview of Advanced Concrete Materials Development for Bridge Decks of West Virginia", *The First International Conference on Recent Advances in Concrete Technology*, Washington D.C., pp 583-597
9. "Early age curling and delamination behavior of overlays" *18th Engineering Mechanics Division Conference of ASCE*, Virginia Tech, Blacksburg, Virginia, USA, 2007
10. "Evaluations of fracture mechanics properties of high-performance concrete", *18th Engineering Mechanics Division Conference of ASCE*, Virginia Tech, Blacksburg, Virginia, USA, 2007
11. "An Overview of Rehabilitation of Concrete Structures with Externally Applied FRP Composites", *7th International Conference on Durability of Composite Systems*, Blacksburg, VA, 2006
12. "An Overview of Rehabilitation of Concrete Structures with Externally Applied FRP Composites", *7th International Conference on Durability of Composite Systems*, Blacksburg, VA, 2006
13. "Durability Predictions for GFRP Reinforcing Bars in Concrete Environment", *7th International Conference on Durability of Composite Systems*, Blacksburg, VA, 2006

Professional Development Certifications and Webinars Attended

1. Webinar meeting for ASTM Committee Training on "Developing and Revisiting an ASTM Standard" (Registration ID# 860821 and Session number 791 222124), May 7, 2015
2. Webinar meeting on "ACI 237- Self Consolidating Concrete Committee Meeting" February 24, 2015
3. Certificate of completion on "Designing High-performance Parking Structures" Precast/Prestressed Concrete Institute, Chicago, IL 60606, June 17, 2014
4. Certificate of completion on "Resiliency: Surviving the Storm," Precast/Prestressed Concrete Institute, Chicago, IL 60606, March 27, 2014
5. Attended ACI 237 (Self consolidating concrete) committee webinar meeting, American Concrete Institute, April 23, 2014

6. Certificate of completion on “Discover High-Performance Precast,” Precast/Prestressed Concrete Institute, Chicago, IL 60606, March 21, 2014
7. Certificate of completion on “Back to the Future: Relearning Passive Fire-Resistant Design,” Precast/Prestressed Concrete Institute, Chicago, IL 60606, August 23, 2013
8. Certificate of completion on “It’s the Law, High-Performance through Envelope Code Requirements,” Precast/Prestressed Concrete Institute, Chicago, IL 60606, July 23, 2013
9. Certificate of completion “Driving Profitability through High-performance Parking Structures, Precast/Prestressed Concrete Institute, Chicago, IL 60606, June 25, 2013
10. Attended ACI 237 (Self consolidating concrete) committee webinar meeting, American Concrete Institute, June 21, 2013
11. Certificate of completion on "Designing for Seismic Success with Precast Concrete", Precast/Prestressed Concrete Institute, Chicago, IL 60606, Obtained: April 26, 2012
12. Certificate of completion on “ Perspective Gained from the Earthquakes of Japan, Chile, and New Zealand” by Precast/Prestressed Concrete Institute, Chicago, IL 60606, March 13, 2012
13. Certificate of completion on “ Functional Resilience: A Critical Component of Sustainability” organized by Precast/Prestressed Concrete Institute, Chicago, IL 60606, February 23, 201
14. Webinar attended on “USGBC membership Webcast” by U.S. Green Building Council, December 7, 2011, 2PM-2-30 PM, Presented by: Sarah Karle, Manager of Membership and Robert Tufts, Membership Associate
15. Certificate of Completion on “Sustainability through Durability, Adaptability and Deconstructability” organized by Precast/Prestressed Concrete Institute, Chicago, IL 60606, Obtained: Nov 17, 2011
16. Webinar attended on “Multiphysics Simulations of Porous Media” organized by ASME, Mechanical Engineering, Webinar Series, Date: November 9, 2011
17. Certificate of Completion on “Building Green with Concrete” organized by National Ready Mix Concrete Association, Sept 16, 2011
18. Webinar attended on “The International Green Construction Code- A Preview (ET)” (Webinar ID# 804-907-899) organized by Precast/Prestressed Concrete Institute, Chicago IL 60606, March 31, 2011
19. Webinar attended on “Fitting with MATLAB: Statistics, Optimization, and Curve Fitting” by Cisco WebEx Event Center, MATLAB, Registration ID# 607455, March 24, 2011