

SYED EHTESHAM HUSSAIN

Concrete Durability Specialist | NACE Cathodic Protection Specialist

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WORK EXPERIENCE

More than 30 years of experience in condition assessment, repair/rehabilitation and cathodic protection of reinforced concrete structures and concrete durability including:

- Condition/health assessment (through NDT and corrosion testing)
- Residual life assessment
- Repair design (provision of scope of work, BOQ, specifications and IFC drawings for repair and protection)
- Rehabilitation/repair using various restoration and protection techniques
- Service life extension
- Protective coatings and linings
- Structural assessment (structural audit, load carrying capacity analysis, load testing)
- Structural strengthening (jacketing and carbon fiber reinforced polymer (CFRP) wrapping)
- Structural upgrading (for example addition of building floors)
- Seismic retrofitting
- Repair of fire damaged structures
- Cathodic protection of existing and new reinforced concrete structures (design, installation & commissioning and monitoring)
- Design for concrete durability for new structures at design stage (through proper material selection and construction practice)
- Review of contract documents (specifications, drawings and scope of work) to ensure durability for new construction

STRUCTURES WORKED ON

- Reinforced Concrete Buildings
- Bridges and Culverts (reinforced and prestressed concrete)
- Industrial Structures (equipment foundations, cooling towers, prestressed concrete cylinder pipes (PCCP), concrete cylinder pipes (CCP), reinforced concrete pipes (RCP), steel tanks, carbon steel and ductile iron pipelines and others)
- Concrete Storage Tanks
- Silos
- Jetties
- Berths
- Retaining Walls
- Other reinforced concrete structures

EDUCATION

- Ph. D. in Concrete Durability, 1991, King Fahd University of Petroleum and Minerals, Saudi Arabia
- M.E in Structural Engineering, 1984, Indian Institute of Science, Bangalore
- B.E in Civil Engineering, 1982, Osmania University, Hyderabad

CERTIFICATIONS & AWARDS

- Certified CP Specialist (CP-4) by National Association of Corrosion Engineers (NACE), Houston, USA (Certificate No. 69073, Issued in October 2017)
- Best paper award in the symposium of "RCC & Infrastructure" during CORCON 2011, 28 Sep.-01 Oct. 2011, Mumbai, India NACE Gateway India Section

EMPLOYMENT HISTORY

1. General Manager, CONTEC Engineering Consultancy, Khobar/Jubail, Saudi Arabia, 2004-2023
(CONTEC was a firm involved in assessment, repair and cathodic protection of concrete and steel structures and served oil & gas and petrochemical industry)
2. Manager, Concrete Repair & CP Division, Hamed Alghamdi Est., Ras Tanura, Saudi Arabia, 1998-2003
(Was involved in establishing and running concrete repair and CP projects for oil & gas and petrochemical industry)
3. Sr. Civil Engineer, Royal Commission for Jubail & Yanbu, Jubail, Saudi Arabia, 1991-1998
(Royal Commission is a government authority responsible for developing and managing Petrochemicals and Energy intensive industrial city of Jubail. I was responsible for implementing the corrosion control program which includes assessment, repair and CP of the industrial infrastructure in Jubail Industrial City)

TECHNICAL PUBLICATIONS

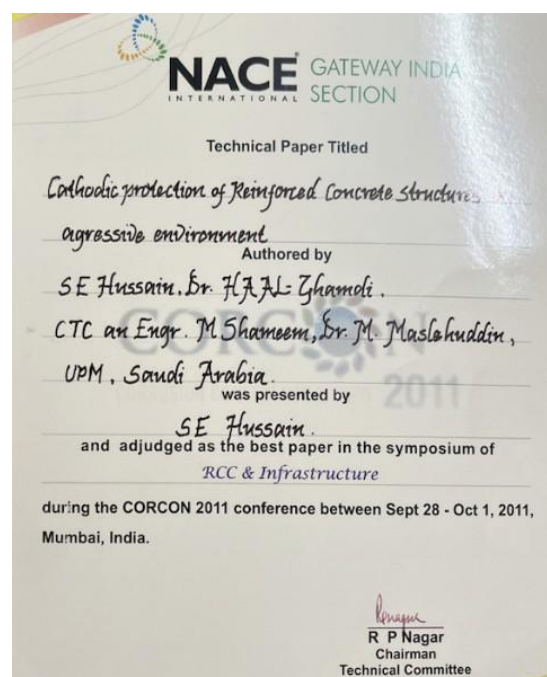
Published/ presented 27 technical papers in international journals and conferences.

SEMINARS

Delivered lectures in seminars and short courses conducted by American Concrete Institute and NACE-Saudi Arabian Chapters and King Fahd University of Petroleum and Minerals (KFUPM).

MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS

1. Indian Concrete Institute (ICI)
2. Institution of Engineers (IEI)
3. Association of Consulting Civil Engineers (ACCE)
4. Indian Society of Non-destructive Testing (ISNT)
5. Indian Roads Congress (IRC)



LIST OF TECHNICAL PAPERS IN INTERNATIONAL JOURNALS

1. Rasheeduzzafar, S. Ehtesham Hussain, and S. S. Al-Saadoun, "Effect of tricalcium aluminate content of cement on chloride binding and corrosion of reinforcing steel in concrete", **ACI Materials Journal**, Vol. 89, Issue 1, Jan. 1993, pages 3-12; *Cited by 135*
2. Syed Ehtesham Hussain and Rasheeduzzafar, "Corrosion resistance performance of fly ash blended cement concrete", **ACI Materials Journal**, Vol. 91, No. 3, 1994, pages 264-272; *Cited by 101*
3. Syed Ehtesham Hussain, Ahmad S. Al-Gahtani, and Rasheeduzzafar, "Chloride threshold for corrosion of reinforcement in concrete", **ACI Materials Journal**, Vol. 93, No. 6, 1996, pages 534-538; *Cited by 165*
4. S. E. Hussain, Rasheeduzzafar, "Influence of microsilica on protection from chloride-induced corrosion of reinforcing steel", **ASCE Journal of Materials in Civil Engineering**, Volume 5, Issue 2, 1993; *Cited by 11*
5. S.E. Hussain, Rasheeduzzafar, A. Al-Musallam, A.S. Al-Gahtani, "Factors Affecting Threshold Chloride for Reinforcement Corrosion in Concrete", **Cement and Concrete Research**, Volume 25, Issue 7, October 1995, Pages 1543-1555, *Cited by 254*
6. S. E. Hussain, AS Al-Gahtani, "Pore solution composition and reinforcement corrosion characteristics of microsilica blended cement concrete", **Cement and Concrete Research**, Vol. 21, Issue 6, Nov. 1991, Pages 1035-1048; *Cited by 41*
7. S. Ehtesham Hussain, Rasheeduzzafar, "Effect of temperature on pore solution composition in plain cements", **Cement and Concrete Research**, Volume 23, Issue 6, November 1993, Pages 1357-1368; *Cited by 41*
8. Rasheeduzzafar, S. Ehtesham Hussain, S.S. Al-Saadoun, "Effect of cement composition on chloride binding and corrosion of reinforcing steel in concrete", **Cement and Concrete Research**, Volume 21, Issue 5, September 1991, Pages 777-794; *Cited by 136*
9. Rasheeduzzafar, S. Ehtesham Hussain, "Effect of microsilica and blast furnace slag on pore solution composition and alkali-silica reaction", **Cement and Concrete Composites**, Volume 13, Issue 3, 1991, Pages 219-225; *Cited by 34*
10. S. Ehtesham Hussain, Rasheeduzzafar, Ahmed S. Al-Gahtani, "Influence of sulfates on chloride binding in cements", **Cement and Concrete Research**, Volume 24, Issue 1, 1994, Pages 8-24; *Cited by 62*
11. M. Saleem, M. Shameem, S. E. Hussain, M. Maslehuddin, "Effect of moisture, chloride and sulphate contamination on the electrical resistivity of Portland cement concrete", **Construction and Building Materials**, Volume 10, Issue 3, April 1996, Pages 209-214, *Cited by 259*
12. S. E. Hussain, H. M. Al-Ruthaiyea, O. A. Eid, "Concrete Repair, Rehabilitation and Protection-Performance of Structures in a Corrosive Environment", - **Arabian Journal for Science and Engineering**, Dhahran, Saudi Arabia, 1998.

LIST OF TECHNICAL PAPERS IN CONFERENCES

1. Syed Ehtesham Hussain, "Cathodic Protection of Reinforced Concrete Structures in Aggressive Environments, Symposium of RCC & Infrastructure", CORCON 2011, 28 Sep.-01 Oct. 2011, Mumbai, India NACE Gateway India Section
2. Syed Ehtesham Hussain, "Developments in Construction and Repair of Reinforced Concrete Structures Affected by Reinforcement Corrosion", World CORCON 2009, 29 Sep.-01 Oct. 2009, Mumbai, India NACE Gateway India Section
3. A.S. Al-Gahtani, Rasheeduzzafar, S. Ehtesham Hussain, "Effect of Alkali Content of Cement on Chloride Binding and Corrosion of Reinforcing Steel", Proceedings of International Conference on Corrosion and Corrosion Protection of Steel in Concrete, University of Sheffield, U.K., 24-29 July 1994, pp 461-471.
4. M. S. Bashenini, S. E. Hussain, I. S. Paul, "Deterioration of Concrete Structures in a Desalination Plant-A Case Study", Proceedings of International Conference on Corrosion and Corrosion Protection of Steel in Concrete, University of Sheffield, U.K., 24-29 July 1994, pp61-73
5. S. E. Hussain, M. S. Bashenini, I. S. Pul, "Lessons from Durable Concrete Structures in the Arabian Gulf Region", Proceedings, 2nd Asian Conference, Singapore, Sep. 1994
6. S. E. Hussain, I. S. Paul and M. S. Bashenini, "Design Considerations for Durable Structures in the Arabian Gulf Environment", Proceeding of 4th International Conference on Structural Failure, Durability and Retrofitting, 14-15 July 1993, Singapore. pp. 237-244
7. Hamoud M. Ruthaiyea, Syed E. Hussain, Iqbal S. Paul, "Corrosion Control Strategies and Performance of Concrete Repairs", Proceedings, 7th Middle East Corrosion Conference, NACE/Bahrain Society of Engineers, Manama, 1996
8. S. E. Hussain, I. S. Paul and H. M. Ruthaiyea, "Evaluation and Repair Strategies for Shallow Foundations", Proceeding of the 6th Middle East Corrosion Conference, Bahrain Society of Engineers, Manama, 1994, pp. 613-628
9. Rasheeduzzafar, S. E. Hussain, "Durability Mechanisms of Blended Cement Concretes", Proceedings, International Conference on Deterioration and Repair of Reinforced Concrete in the Arabian Gulf, Bahrain Society of Engineers, Manama, 1991, pp. 909-925
10. Rasheeduzzafar, Syed Ehtesham Hussain, S. S. Al-Saadoun, "Pore Solution Composition of Hydrated Cement Pastes with Reference to Corrosion Resisting Performance of Reinforcing Steel in Concrete", Proceedings, 5th Middle East Corrosion Conference, NACE/Bahrain Society of Engineers, Manama, 28-30 Oct. 1991
11. Syed Ehtesham Hussain, "Performance of an Impressed Current Cathodic Protection System for a Reinforced Concrete Tank", 1st NACE-Jubail Industrial Forum on Water Treatment & Cathodic Protection, 17-19 Oct. 2011
12. Syed Ehtesham Hussain, "Cathodic Protection of Reinforced Concrete Structures in Aggressive Environments", 5th Workshop on Concrete Deterioration and Its Prevention, KFUPM, Saudi Arabia 26 Oct. 2011
13. Syed Ehtesham Hussain, "Selection of Rehabilitation Strategies for Reinforced Concrete Structures", 3rd Workshop on Concrete Deterioration and Its Prevention, KFUPM, Saudi Arabia 11 Feb. 2009
14. Syed Ehtesham Hussain, "Repair and Protection of Concrete Structures", Workshop on Concrete Deterioration and Prevention, KFUPM, Saudi Arabia 28 Feb. 2007
15. Syed E. Hussain, "Performance and Protection of Concrete Structures – Royal Commission Experience", Symposium on Maintenance Systems and Applications of Materials in the Saudi Arabian Environment, 12-13 Nov. 1996, KFUPM, Saudi Arabia