

REFERENCES

- ACI Committee 363 (1992), "State-of-the-art report on high strength concrete", *ACI Manual of Concrete Practice*, ACI, Detroit.
- Aitcin, P.C. (1998), *High-Performance Concrete*, E&FN Spon, London.
- Aitcin, P.C., Jolicoeur, C. and Maegregor, J.G. (1994), "Superplasticizers: How they work and why they occasionally don't", *Conc. Int.*, **16**(5), 45-52.
- Bazant, Z.P. and Oh, B.H. (1983), "Crack band theory for fracture of concrete", *Mater. Struct.*, **16**, 155-177.
- Bazant, Z.P. and Planas, J. (1998), *Fracture and Size Effect in Concrete and Other Quasibrittle Materials*, CRC Press, Boca Raton.
- Bazant, Z.P., Tabbara, M.R., Kazemi, M.T. and Pijauder-Cabot, G. (1990), "Random particle model for fracture of aggregate or fiber composites", *J. Eng. Mech.*, **116**, 1686-1705.
- Bhandari, S. (1997), *Engineering Rock Blasting Operation*, A.A. Balkema, Rotterdam.
- Broch, E. and Franklin, J.A. (1972), "The point-load strength test", *Int. J. Rock Mech. Min. Sci.*, **9**, 669-697.
- Burnett, I.D. (1994), "High-strength concrete in western Pacific Rim countries", *Proc. of ACI Int. Conf. on High-Performance Concrete*, Supplementary Papers, Singapore, 75-106.
- Cadorat, G. and Richard, P. (1992), "Full scale use of high performance concrete in building and public works", *High Performance Concrete: From Material to Structure* (ed. Y. Malier), E&FN Spon, London, 379-411.
- CEB-FIP (1990), *State of the Art Report*, Bulletin d'Information No. 197, FIP, London.

Chakpaisan, W. (1996), *Effects of Fly Ash in Pozzolanic Reaction on Compressive Strength of High Performance Concrete*, Master Degree Thesis, Chulalongkorn University, Thailand.
(in Thai)

Cook, J.E. (1989), "10,000 psi concrete", *Conc. Int.*, **34**(10), 67-75.

Davies, R.D. (1951), "Some experiments on the compaction of concrete by vibration", *Mag. Conc. Res.*, **3**(8), 71-78.

Duyou, L., Zhongzi, X. and Mingshu, T. (1995), "Effect of curing conditions on the strength and microstructure of compacted cement", *New Development in Concrete Science and Technology* (eds W. Zhongwei et al), Southeast University, China, 191-196.

Farmer, I. (1983), *Engineering Behavior of Rocks*, Chapman and Hall, London.

Fiorato, A.E. (1989), "PCA research on high-strength concrete", *Conc. Int.*, **11**(4), 44-50.

Fordham, C.J. and Smalley, I.J. (1985), "A simple thermogravimetric study of hydrated cement", *Cem. Conc. Res.*, **15**, 141-144.

Goldman, A. and Bentur, A. (1989), "Bond effects in high strength silica fume concrete", *ACI Mater. J.*, **86**, 440-447.

Granju, J.L. and Maso, L.C. (1984b), "Hardened Portland cement pastes, modelisation of the microstructure and evolution laws of mechanical properties I – Basic results", *Cem. Conc. Res.*, **14**, 303-310.

Granju, J.L. and Maso, L.C. (1984b), "Hardened Portland cement pastes, modelisation of the microstructure and evolution laws of mechanical properties II – Compressive strength Law", *Cem. Conc. Res.*, **14**, 303-310.

Hillerborg, A., Modeer, M. and Petersson, P.E. (1976), "Analysis of crack formation and crack growth in concrete by means of fracture mechanics and finite elements", *Cem. Conc. Res.*, **6**, 773-782.

Howard, N.L. and Leatham, D.M. (1989), "The production and delivery of high-strength concrete", *Conc. Int.*, **11**(4), 26-30.

ISRM (1985), "Suggested method for determining point load strength", *Int. J. Rock Mech. Min Sci. & Geomech. Abstr.*, **22**, 51-60.

ISRM (1988), "Suggested methods for determining the fracture toughness of rock", *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, **25**, 73-96.

Jennings, H.M. (2000), "A model for the microstructure of calcium silicate hydrate in cement paste", *Cem. Conc. Res.*, **30**, 101-116.

Jenq, Y.S. and Shah, S.P. (1985), "A two parameter fracture model for concrete", *J. Eng. Mech.*, **111**, 1227-1241.

Kitticharoenkiat, P. (1998), *A Slump Prediction Model Based on Water Retainability and Free Water Concepts*, Master Degree Thesis, Sirindhorn International Institute of Technology, Thailand.

Kolias, S. (1994), "Investigation of the possibility of estimating concrete strength by porosity measurements", *Mater. Struct.*, **27**, 265-272.

de Larrard, F. (1989), "Ultrafine particles for the making of very high strength concretes", *Conc. Cem. Res.*, **19**, 161-172.

de Larrard, F. (1994), "High-performance concrete from the laboratory to practical utilization", *Concrete Technology: New Trends, Industrial Applications* (eds A. Aguadao, R. Gettu, and S.P. Shah), RILEM, E&FN Spon, London, 177-196.

de Larrard, F. (1999), *Concrete Mixture Proportioning*, E&FN Spon, London.

de Larrard, F. and Belloc, A. (1997), "The influence of aggregate on the compressive strength of normal and high-strength concrete", *ACI Mater. J.*, **94**, 417-426.

Leevanichakit, N. (1995), *Effects of Aggregate Gradation on Hardened State of High Performance Concrete*, Master Degree Thesis, Chulalongkorn University, Thailand. (in Thai)

Loudon, A.G. (1953), "Computation of permeability from simple soil tests", *Geotechnique*, **3**, 165-183.

Mehta, P.K. (1996), *Concrete: Structure, Properties, and Materials*, Prentice-Hall, New Jersey.

- Mehta, P.K. and Aitcin, P.C. (1990), "Microstructural basis of selection of materials and mix proportions for high strength concrete", *Proc. of the 2nd Symp. on High Strength Concrete*, California, 265-286.
- Mihashi, H. and Izumi, M. (1977), "Stochastic theory for concrete fracture", *Cem. Conc. Res.*, 7, 411-422.
- Mikhail, R.S., Abo-El-Enein, S.A., Mousa, A.M. and Maric, M.S. (1981), "Polymer impregnation of hardened cement paste of various porosities", *Proc. of the 3rd Int. Congress on Polymers in Concrete*, 2, Japan, 729-741.
- Mindess, S. (1994), "Materials selection, proportioning and quality control", *High Performance Concretes and Applications* (eds S.P. Shah and S.H. Ahmad), Edward Arnold, London, 1-25.
- Mindess, S., Young, J.F. and Darwin, D. (1996), *Concrete*, Prentice Hall, New Jersey.
- Morino, K. and Iwatsuki, E. (1995), "Influence of properties of aggregates on strength of high-strength concrete", *New Development in Concrete Science and Technology* (eds W. Zhongwei et al), Southeast University, China, 37-42.
- Nagahama, H. and Yoshii, K. (1993), "Fractal dimension and fracture of brittle rocks", *Int. J. Rock Mech. Min. Sci. & Geomech. Abstr.*, 30(2), 173-175.
- Neville, A.M. (1995), *Properties of Concrete*, Addison Wesley Longman, London, 4th edition.
- Neville, A.M. (1997), "Aggregate bond and modulus of elasticity of concrete", *ACI Mater. J.*, 94, 71-74.
- Olson, R.A. and Jennings, H.M. (2001), "Estimation of CSH content in a blended cement paste using water adsorption", *Cem. Conc. Res.*, 31, 351-356.
- Pirsson, L.V. and Knopf, A. (1952), *Rocks and Rock Minerals*, John Wiley & Sons, New York.
- Ramachandran, V.S. (1979), "Differential thermal method of estimate calcium hydroxide in calcium silicate and cement pastes", *Cem. Conc. Res.*, 9, 677-684.
- RLEM (1985), "Determination of the fracture energy of mortar and concrete by means of three-point bend tests on notched beam", *Mater. Struct.*, 18, 285-290.

Ronneburg, H. and Sanvik, M. (1990), "High strength concrete for the North Sea platforms", *Conc. Int.*, **12**(1), 29-34.

de Schutter, G. and Taerwe, L. (1993), "Random particle model for concrete based on Delaunay triangulation", *Mater. Struct.*, **26**, 67-73.

Sedran, T. and de Larrard, F. (1996), "Rene-LCPC: A software to optimize the mix-design of high-performance concrete", *Proc. of the 4th Int. Symp. on Utilization of High-Strength/High-Performance Concrete*, **1** (eds F. de Larrard and R. Lacroix), Paris, 167-178.

Stitmannaitham, B. (1992), *Effect of Mixing Intensity on Fresh Properties of Fresh Concrete Mixed by Pan Type Mixer*, Ph.D. Dissertation, University of Tokyo, Japan.

Suwankawin, S. (1996), *Effects of Silica Fume in Pozzolanic Reaction on Compressive Strength of High Performance Concrete*, Master Degree Thesis, Chulalongkorn University, Thailand. (in Thai)

Tanpao, K. (1995), *Effects of Aggregate Gradation on Fresh State of High Performance Concrete*, Master Degree Thesis, Chulalongkorn University, Thailand. (in Thai)

Taylor, H.F.W. (1997), *Cement Chemistry*, 2nd edition, Thomas Telford, London.

Tennis and Jennings (2000), "A model for two types of calcium silicate hydrate in the microstructure of Portland cement pastes", *Cem. Conc. Res.*, **30**, 855-863.

Yudenhfreund, M., Odler, I. and Brunauer, S. (1972), "Hardened Portland cement pastes of low porosity I. Materials and experimental methods", *Cem. Conc. Res.*, **2**, 313-330.

Yudenhfreund, M., Skalny, J., Mikhail, R. Sh. and Brunauer, S. (1972), "Hardened Portland cement pastes of low porosity II. Exploratory studies", *Cem. Conc. Res.*, **2**, 331-348.

BIOGRAPHY

Puttipong Haleerattanawattana was born in Bangkok on June 2, 1978. After studying at Suankularb Wittayalai during his high school period, he entered Chulalongkorn University in the Faculty of Engineering in 1994. Four years later, he obtained the Bachelor Degree in Civil Engineering (2nd class honours) and began his Ph.D. study also at Chulalongkorn University. He was granted the Royal Golden Jubilee Ph.D. scholarship from Thailand Research Fund, and spent six months in the University of Innsbruck, Austria. His co-research there was a part of his Ph.D dissertation. During his Ph.D. study, he authored many papers with Prof. Dr. Ekasit Limsuwan, his advisor, and presented both in National conferences and International symposiums. He received the Ph.D. in Civil Engineering in 2005 when he was 27.

List of published papers:

- Haleerattanawattana, P. and Limsuwan, E. (2002), "Prediction of concrete uni-axial compressive strength", *Proc. of the 15th KKCNN Symp.*, Singapore, S91-S96.
- Haleerattanawattana, P., Saxer, A. and Limsuwan, E. (2003), "Effect of microstructure on mechanical properties of hardened cement paste", *Proc. of the 1st National Concrete Conf.*, Kanchanaburi, 294-299. (in Thai)
- Haleerattanawattana, P. and Limsuwan, E. (2003), "Strength-based gradation of coarse aggregates for high strength concrete", *Proc. of the 16th KKCNN Symp.*, Korea, 155-160.
- Haleerattanawattana, P. and Limsuwan, E. (2004), "Physical and mechanical properties of coarse aggregates with different sizes", *Proc. of the 9th National Conf. on Civil Engineering*, 1, Petchburi, MAT119-MAT124. (in Thai)
- Haleerattanawattana, P. and Limsuwan, E. (2004), "Strength-based gradation of coarse aggregates for ultra-high strength concrete", *Proc. of the Int. Symp. on UHPC*, Germany, 239-249.
- Haleerattanawattana, P., Senjuntichat, T. and Limsuwan, E. (2004), "Micro-mechanical modeling for compressive behavior of concrete material", *Struct. Eng. & Mech.*, 18(5), 691-707.