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By F.-J. Ulm, Z.P. Bazant, F.H. Wittman

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The increasing need for evaluation of the durability performance of concrete structures has led recently to the development of advanced material models and numerical approaches founded on applied mechanics and computational mechanics. At the same time, the recent and rapid development of new cement-based materials with properties far exceeding conventional concrete standards has been accompanied, in materials science, with new experimental techniques that allowed novel insight into the microstructure of cement-based materials. There is now a need to bridge the gaps between materials science and advanced computational modeling and innovative concrete engineering on the multiple fronts of engineering mechanics, industrial applications, and advanced engineering education. This is the unifying theme of the papers presented at the *Sixth International Conference on Creep, Shrinkage and Durability Mechanics of Concrete and other Quasi-Brittle Materials (CONCREEP-6@MIT)*. The papers are subdivided into four parts: I. Micromechanisms and Micromechanics of Creep and Shrinkage; II. Creep, Shrinkage and Fracture Couplings; III. Durability Mechanics of Concrete Structures; IV. From New Concrete Materials to the Design of High Performance Structures.

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