

# Table of Contents

## BMC-5

Interface properties in extruded FRC-materials

Henrik STANG, *Denmark*

Basic interfacial characteristic of polyethylene fiber/cement composites and its modification by plazma

Hwai-Chung WU, Victor C. LI, *USA*

A micromechanical model of multiple cracking

Jyrki KULLAA, *Finland*

Fibre bridging model based on a Dugdale-like shear-slip relation

Rune BRINCKER, John SIMONSEN, *Denmark*

Influence of the shear-slip relation on the fibre bridging curve in FRC

John SIMONSEN, Rune BRINCKER, *Denmark*

Contact zone between cement paste and fibre and its influence on the water permeability of fibre reinforced concrete

Jacek SLIWINSKI, Teresa ZYCH, *Poland*

Fiber pull-out tests and microstructure of fiber/mortar interface in fiber reinforced mortars

Carl REDON, Jean-Louis CHERMANT, Jean-Louis QUENEC'H, *France*

Early formation of the interfacial zone in FRC with PAN fibers

Waldemar PICHOR, Jerzy DYCZEK, *Poland*

Material characteristics affecting performance of contact layer between «old» concrete and «new» SFRC

Wojciech RADOMSKI, *Poland*, Miami SLIMAN, *Syria*

Matrix modification to improve the durability of glass fiber reinforced cement composites

Shashidhara MARIKUNTE, Corina M. ALDEA, Surendra P.SHAH, *USA*

The influence of pozzolanic materials on the durability of glass fibre reinforced cement composites

Krystyna RAJCZYK, Elzbieta GIERGICZNY, Michat A. GLINICKI, *Poland*

The influence of fly ash on rheological and mechanical properties of cement mortars reinforced with pitch-based carbon fibres

Leokadia KUCHARSKA, Dominik LOGON, *Poland*

Failure mode in compression of fibre reinforced concrete cylinders with spiral steel reinforcement

Giuseppe CAMPIONE, *Italy*, Sidney MINDESS, *Canada*, Gaetano ZINGONE, *Italy*

Optimized design of fiber reinforced thin bonded overlays

Helene CHAUSSON, Jean-Louis GRANJU, *France*

Bridging behaviour and crack growth in fibre reinforced concrete under fatigue loading

Jun ZHANG, Henrik STANG, *Denmark*

- Material variability in fiber reinforced concrete: nature and consequences  
Denys BREYSSE, *France*, Ahmed ATTAR, *Algeria*
- Strains of steel fibre reinforced concrete under a long-term load  
Marian ABRAMOWICZ, *Poland*, Jiri KRATKY, Karel TRTIK, Jan VODICKA, *Czech Republic*
- The FRCs reinforced by combination of steel and polypropylene fibres  
Karel TRTIK, Jan VODICKA, *Czech Republic*
- Properties of concrete reinforced with recycled carpet waste fibers  
Youjiang WANG, *USA*
- Mechanical response of angle ply cement based composites  
Andrew PIVACEK, Garrett J. HAUPT, Barzin MOBASHER, *USA*
- Influence of microstructure and fracture on the transport properties in cement-based materials  
Sanjay S. JAISWAL, Takeru IGUSA, Trish STYER, Alan KARR, Surendra P. SHAH, *USA*
- Damage evolution due to stress release in cement-based building materials  
Piet STROEVEN, *The Netherlands*
- Fracture mechanical and fractological investigations on normal and high-strength concrete  
Viktor MECHTCHERINE, Harald S. MUELLER, *Germany*
- The role of crack deflection in toughening of cement-based materials  
Anne B. ABELL, David A. LANGE, *USA*
- Aggregate shape and fracture energy of concrete  
Jerzy M. BRZEZICKI, Janusz KASPERKIEWICZ, *Poland*
- Global characterization of damage evolution in cementitious composites in direct compression  
Dik H. DALHUISEN, Piet STROEVEN, *The Netherlands*, Andrzej T. MOCZKO, *Poland*
- Influence of the aggregate content on mechanical properties of sandcrete  
Alain DENIS, Denys BREYSSE, *France*
- Tensile testing and modelling of concrete under high loading rates  
Ahmed BRARA, *Algeria*, Janusz R. KLEPACZKO, *France*, Leopold KRUSZKA, *Poland*
- Characterization of the macro-porosity of concrete using an automatic image analysis  
Carl REDON, Liliane CHERMANT, Jean-Louis CHERMANT, Jean-Louis QUENEC'H, *France*
- Fracture mechanics of aggregate-paste interface  
Vlastimil BILEK, Zbynek KERSNER, Pavel SCHMID, *Czech Republic*
- Computer-simulation approach to the ITZ effect of fine particle additions  
Martijn STROEVEN, Piet STROEVEN, *The Netherlands*
- Structure and performance of porous concrete  
Anne BEELDENS, Dionys Van GEMERT, Etienne De VINNE, Benny De BLAERE, Chris CAESTECKER, Marc Van MESSEM, *Belgium*

Concrete behaviour under uniaxial tension: effect of casting and drying conditions Marcel R.A. Van VLIET,  
Jan G.M. Van MIER, *The Netherlands*

Modelling of concrete cracking induced by steel corrosion  
Christopher K.Y. LEUNG, *USA*.

Strength development of high performance concrete in massive structure  
Maria KASZYNSKA, *Poland*

Development of microcracks in hardened cement paste  
Marek PETRI, *Poland*

A direct tension test for obtaining tension softening curves of unnotched concrete specimens  
Hideo KOIDE, Hiroshi AKITA, Masanao TOMON, *Japan*

On fracture of brittle matrix composites: compression along parallel interracial cracks  
Igor A. GUZ, *Ukraine*

Regularities of fracture of elastomeric inclusions in a paniculate filled brittle matrix composite  
Klaus P. HERRMANN, *Germany*, Victor G. OSHMYAN, *Russia*

Brittle fracture of compressed short composite bars  
Zbigniew KOWAL, Leszek TRABSKI, *Poland*

Modelling and analysis of varying correlation between properties of brittle matrix composites  
Tatiana V. LYASHENKO, Vitaly A. VOZNESENSKY, *Ukraine*

Strength properties of polymer-modified mortars with garnet sand  
Atsushi SHIRAI, Yoshihiko OHAMA, *Japan*

Properties of EVA-modified mortars after long-term outdoor exposure  
Yoshihiko OHAMA, Katsunori DEMURA, Takeshi UCHIYAMA, *Japan*

Measurement of the in-plane shear strength of unidirectional composites: a review  
Fabrice PIERRON, Alain VAUTRIN, *France*

An experimental study on the triaxial compressive properties of cement and asphalt-emulsion  
compositions  
Mitsuru UEDA, Shingo SASAKI, Hidekazu MURATA, Sumio HAMADA, *Japan*

The influence of the PVA fibre reinforcement on the properties of HAC matrix subjected to internal  
stresses  
Wieslaw KURDOWSKI, Sylwester DUSZAK, Jerzy DYCZEK, Waldemar PICHOR, *Poland*

Ceramic matrix composites: creep characteristics  
Jean-Louis CHERMANT, *France*

Recent advances in fibrous ceramic composites  
Brian COX, Frank ZOK, *USA*

Time-dependent failure in ceramic composites by fiber degradation and interface creep  
N. IYENGAR, William A. CURTIN, *USA*

Creep characterization of C-SiC composites: experimental device and results  
G. BOITIER, Jean-Louis CHERMANT, J. VICENS, *France*

Observation and investigation of cracks on alumina ceramic grinding wheels  
Abdenour ALLICHE, Eric LE BOURHIS, *France*

Statistical parameters of fibres for endless-fibre reinforced ceramic matrix composites evaluated by the fibre-bundle tension test  
Dieter LOIDL, Herwig PETERLIK, Karl KROMP, *Austria*

A continuum damage constitutive model for fibrous ceramic matrix composites  
Gerald M. CAMUS, *France* .....537

Numerical evaluation of the longitudinally split beam specimen for determination of the  $G_{IIIc}$   
Piotr CZARNOCKI, *Poland*

Modelling of ceramic materials under dynamic loading  
Tomasz SADOWSKI, *Poland*

Fracture process of monolithic polycrystalline ceramics ( $Al_2O_3$  and MgO) under quasistatic and dynamic loading  
Toroasz SADOWSKI, Marek BONIECKJ, Zdzislaw LIBRANT, *Poland*, Carlos RUIZ, *UK*

Use of BMC for ductile structural members  
Petr KABELE, *Japan*, Victor C. LI, *USA*, Hideyuki HORII, Tetsushi KANDA, Shinya TAKEUCHI, *Japan*

Bond properties and cracking response of fibre reinforced concrete members with main reinforcement  
Frede A. CHRISTENSEN, Rune BRINCKER, *Denmark*

Experimental investigation of the specimens reinforced by coated reinforcement  
Petr BOUSKA, Daniel MAKOVICKA, Martin NOVAK, *Czech Republic*

Evaluation on deterioration of concrete structures in situ based on reliability theory Manabu  
MATSUSHIMA, Tomoaki TSUTSUMI, Kunihiro MATSUI, Hiroshi SEKI, *Japan*