

VOLUME 36  
NUMBER 3 / NUMÉRO 3  
MARCH / MARS

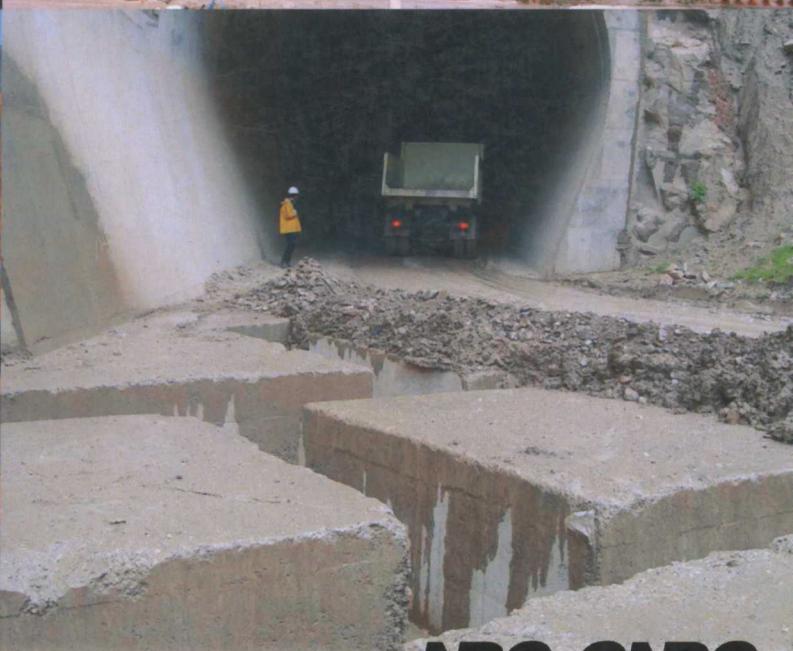
2009

An NRC Research Press  
**JOURNAL**  
Une REVUE des  
Presses scientifiques du CNRC



Canadian Journal of  
**CIVIL ENGINEERING**  
*cjce.nrc.ca*  
Including papers submitted to the  
**JOURNAL OF ENVIRONMENTAL ENGINEERING AND SCIENCE**

Revue canadienne de  
**GÉNIE CIVIL**  
*rcgc.cnrc.ca*  
Y compris les articles envoyés à  
**LA REVUE DU GÉNIE ET DE LA SCIENCE DE L'ENVIRONNEMENT**



Contents (concluded) / Table des matières (suite et fin)

TECHNICAL NOTE	NOTE TECHNIQUE
<b>Spyros Beltaos</b> <b>519-523</b>	River flow abstraction due to hydraulic storage at freezeup
DISCUSSIONS	
<b>Erik F.R. Bollaert, Pedro A. Manso, and Anton J. Schleiss</b> <b>524-526</b>	Discussion of "Effect of jet aeration on hydrodynamic forces on plunge pool floors"
<b>A.N. Pinheiro and J.F. Melo</b> <b>527</b>	Reply to discussion by A.N. Pinheiro and J.F. Melo on "Effect of jet aeration on hydrodynamic forces on plunge pool floors"
<b>Structural engineering</b>	
ARTICLES	
<b>Alexander Au, Clifford Lam, and Bala Tharmabala</b> <b>415-426</b>	Investigation of shear resistance of steel bridge girders by load testing and monitoring of load response data under highway traffic conditions
<b>Jung-Wook Choi, Malika Ali, and Scott D.B. Alexander</b> <b>463-472</b>	Behavior of slab-column connections with partially debonded reinforcement under lateral loading
<b>Transportation engineering</b>	
ARTICLES	
<b>Oldřich Kropáč and Peter Múčka</b> <b>389-401</b>	Alternative single-number indicator of longitudinal road unevenness
<b>Shy Bassan</b> <b>427-438</b>	A statistical practical methodology of statewide traffic pattern grouping and precision analysis
<b>Marc J. Richard, Guy Doré, Vladislav Vashev et Nicolas Fradette</b> <b>504-513</b>	Étude des conséquences de la détérioration de l'une des chaussées sur le comportement des véhicules et la sécurité des usagers de la route
NOTE	
<b>Jong-Suk Jung and Yoon-Ho Cho</b> <b>514-518</b>	Comparison between Nurse-Saul and Arrhenius equations
<b>Papers submitted to the Journal of Environmental Engineering and Science</b>	
ARTICLES	
<b>Patrick Drogui, Mélanie Asselin, Satinder K. Brar, Hamel Benmoussa, and Jean-François Blais</b> <b>529-539</b>	Electrochemical removal of organics and oil from sawmill and ship effluents
<b>Biplab Mukherjee and Brian A. Wrenn</b> <b>540-549</b>	Size distribution as a measure of dispersant performance
<b>M.I.H. Bhuiyan, D.S. Mavinic, and R.D. Beckie</b> <b>550-558</b>	Dissolution kinetics of struvite pellets grown in a pilot-scale crystallizer
NOTE	
<b>H.J.M. Hanley and T.E. Payne</b> <b>559-563</b>	Adsorption of a jet fuel on a model organic-clay soil: Application of small angle neutron scattering
<b>Ingénierie des structures</b>	
ARTICLES	
<b>Oldřich Kropáč and Peter Múčka</b> <b>389-401</b>	Alternative single-number indicator of longitudinal road unevenness
<b>Shy Bassan</b> <b>427-438</b>	A statistical practical methodology of statewide traffic pattern grouping and precision analysis
<b>Marc J. Richard, Guy Doré, Vladislav Vashev et Nicolas Fradette</b> <b>504-513</b>	Étude des conséquences de la détérioration de l'une des chaussées sur le comportement des véhicules et la sécurité des usagers de la route
NOTE	
<b>Jong-Suk Jung and Yoon-Ho Cho</b> <b>514-518</b>	Comparison between Nurse-Saul and Arrhenius equations
<b>Articles soumis à la Revue du génie et de la science de l'environnement</b>	
ARTICLES	
<b>Patrick Drogui, Mélanie Asselin, Satinder K. Brar, Hamel Benmoussa, and Jean-François Blais</b> <b>529-539</b>	Electrochemical removal of organics and oil from sawmill and ship effluents
<b>Biplab Mukherjee and Brian A. Wrenn</b> <b>540-549</b>	Size distribution as a measure of dispersant performance
<b>M.I.H. Bhuiyan, D.S. Mavinic, and R.D. Beckie</b> <b>550-558</b>	Dissolution kinetics of struvite pellets grown in a pilot-scale crystallizer
NOTE	
<b>H.J.M. Hanley and T.E. Payne</b> <b>559-563</b>	Adsorption of a jet fuel on a model organic-clay soil: Application of small angle neutron scattering



National Research  
Council Canada  
Ottawa, Canada  
K1A 0R6

Conseil national  
de recherches Canada  
Ottawa, Canada  
K1A 0R6

Postage paid at Ottawa  
Publications mail  
Registration No. 40062591  
USPS periodical postage paid at Plattsburgh, NY 12901, USA

Port payé à Ottawa  
Poste-publication  
Enregistrement n° 40062591

Canadian Journal of

# CIVIL ENGINEERING

Volume 36, Number 3, March 2009

Revue canadienne de

# GÉNIE CIVIL

Volume 36, numéro 3, mars 2009

## Construction engineering

### ARTICLES

- Jin-Lee Kim and Ralph D. Ellis Jr. 375-388

- Li-Ren Yang 402-414

- Yi Zou and Sang-Hoon Lee 439-448

- Ming Lu, Yang Zhang, Jianping Zhang, Zhenzhong Hu, and Jiulin Li 473-479

- Thomas Froese 480-491

## Engineering materials

### ARTICLE

- Cesar Juarez, Gerardo Fajardo et Pedro Valdez 449-462

## Hydrotechnical engineering

### ARTICLE

- K.L. Robinson, C. Valeo, M.C. Ryan, A. Chu, and M. Iwanyshyn 492-503

## Ingénierie de la construction

### ARTICLES

- Robust global and local search approach to resource-constrained project scheduling

- Impacts of automation technology on quality of project deliverables in the Taiwanese construction industry

- Implementation of project change management best practice in different project environments

- Intégration of four-dimensional computer-aided design modeling and three-dimensional animation of operations simulation for visualizing construction of the main stadium for the Beijing 2008 Olympic games

- Construction process technologies: a meta-analysis of Canadian research

## Matériaux d'ingénierie

### ARTICLE

- Caractérisation microstructurale des fibres naturelles pour des matériaux composites à base de ciment

## Hydraulique

### ARTICLE

- Modelling aquatic vegetation and dissolved oxygen after a flood event in the Bow River, Alberta, Canada

Continued on inside back cover / Suite au verso

Front cover: **top left**, stepped spillway in operation at Wilde Lake in Columbia, Maryland, on 23 March 2005 after a 1-year storm event (photo courtesy of Christopher Goodell; see Chanson in the August 2007 issue, pp. 946-951); **top right**, aerial photo (taken July 1999) of the Annacis Island Wastewater Treatment Plant showing the completed secondary treatment facilities designed to treat wastewater from about one million people, with an average dry weather flow of 480 million litres per day (photo courtesy of Colin Jewall, when under assignment to the Greater Vancouver Regional District); **bottom left**, oil tank damaged due to fire during the Kocaeli, Turkey, earthquake, 17 August 1999 (photo courtesy of Dr. Kenneth Elwood, The University of British Columbia); **bottom right**, diagonally divided concrete cubes placed as an erosion protection at diversion tunnel No. 1 of the Seymareh Dam in Iran (see Emami and Schleiss in the January 2006 issue, pp. 81-92).

Page couverture : **gauche supérieure**, passage de la crue dans l'évacuateur de crues en marches d'escalier au Wilde Lake, à Columbia (Maryland), le 23 mars 2005 après un événement pluvio-hydrologique d'un an (photo courtoisie de Christopher Goodell; voir Chanson, numéro de août 2007, p. 946-951); **droite supérieure**, photo aérienne (juillet 1999) de la station d'épuration des eaux usées de l'île Annacis qui montre les installations d'épuration secondaire conçues pour traiter les eaux usées d'environ un million de personnes, avec un débit moyen par temps sec de 48 millions de litres par jour (photo courtoisie de Colin Jewall, lors de son affectation au district régional du Grand Vancouver); **gauche inférieure**, réservoir d'huile endommagé par le feu durant le séisme de Kocaeli en Turquie, 17 août 1999 (photo courtoisie de Kenneth Elwood, The University of British Columbia); **droite inférieure**, cubes de béton séparés en diagonale et utilisés comme mesure de protection contre l'érosion à la sortie de la galerie de dérivation n° 1 du barrage de Seymareh en Iran (voir Emami and Schleiss, numéro de juin 2006, p. 81-92).

