

CONTENTS

SECTION 1 - DIFFUSION AND CONVECTION PROBLEMS

INVITED PAPER

On the use of Time-Dependent Fundamental Solutions for the Boundary Element Formulation of Diffusion Problems

L.C. Wrobel

Application of the B.E.M. to the Resolution of an Unsteady Diffusion Problem

D. Morvan

A New Software for the Modelization of Transient and Non Linear Thermal Diffusion

R. Pasquetti and A. Caruso

Boundary Element Method Applied to Neutron Diffusion Problems

M. Itagaki and C.A. Brebbia*

INVITED PAPER

Time Dependent Three-Dimensional Laminar Isochoric Viscous Fluid Flow by the Boundary Element Method

P. Skerget, A. Alujevic, I. Zagar,

C.A. Brebbia and G. Kuhn

Control Volume Boundary Element Formulation for Salt-Water Wedge Diffusion

M. Kanoh, T. Kuroki, G. Aramaki, K. Fujino and T. Ueda

INVITED PAPER

Mathematical and Computational Aspects of Laplace Transform - BEM for Time Dependent Problems

J. Brilla

SECTION 2 - POTENTIAL PROBLEMS

INVITED PAPER

Progress in the Analysis of Poisson-Type Problems by Boundary Elements

G.S. Gipson

INVITED PAPER

Application of the BEM to the Steady and Unsteady Two Dimensional Phreatic Groundwater Flow 115
E. Bruch

An Alternative Iteration Algorithm for Moving Boundary Free Flow using Boundary Elements 129
Z-x. Feng

A Boundary Element Technique for Conformal Mapping 143
C. Detournay

Dual Reciprocity Boundary Element Formulation for Potential Problems in Infinite Domains 155
C.F. Loeffler and W.J. Mansur

Singular Point Theory in Laplace Field 165
M. Defourny

C(1) Continuous, Quadrilateral Boundary Elements Applied to Three Dimensional Problems in Potential Theory 181
W.S. Hall and T.T. Hibbs

SECTION 3 - HEAT TRANSFER

INVITED PAPER

Solving Nonlinear Heat Transfer Problems by BEM 195
R. Bialecki

Modelling Radiation Effects in BEM using Non-linear Conditions 223
D.B. DeFigueiredo and C.A. Brebbia

Temperature Fields in Domains with Heat Sources using Boundary-Only Formulation 233
A.J. Nowak

Radiative Heat Transfer in Cavities. BEM Solution 247
R. Bialecki

SECTION 4 - FLUID MECHANICS

- A Low Order Panel Method for the Calculation of Vortex Sheet Roll-Up and Wing-Vortex Interaction 259
R. Behr and S. Wagner
- Application of Orthogonal Collocation Method to Velocity and Temperature Distributions of Laminar Flow in Circular Tube 275
K. Kanemaru, N. Kawae, T. Shigechi and T. Yamada
- Stratified Tropical Ocean Dynamics: Effects of Coastal Geometry on the Linear Response to Wind by Boundary Integral Equation Formulation: Part I - Formal Results 289
M.L. Vianna
- Boundary Element Approximation of Stokes Equation with Slip Boundary Condition 301
J. Zhu and C. Jin
- Unsteady Flow through Prosthetic Heart Valves: An Integral Approach Coupled with a Vortex Method 309
F. Cassot, D. Morvan and G. Tonietto

SECTION 5 - FLUID DYNAMICS

INVITED PAPER

- A Boundary Element Analysis of Natural Convection Problems by Penalty Function Formulation 323
K. Kitagawa, C.A. Brebbia, M. Tanaka and L.C. Wrobel
- Prediction of Aerodynamic Characteristics of High Lift Multi-Element Airfoils 343
C. de Nicola, D. Coiro and V. Losito
- Unsteady Transonic Airfoil Computation using the Integral Solution of Full-Potential Equation 357
O.A. Kandil and H. Hu
- On Lagrangean and Boundary Element Methods for Some Unsteady Isothermal Navier Stokes Flows 373
F.K. Hebeker

SECTION 6 - ELECTRO AND ELECTROSTATICS

INVITED PAPER

Boundary Element Applications in Electrostatics 383
G.T. Symm

INVITED PAPER

The Boundary Element Method for Semiconductor Device Analysis 399
G. de Mey and F. Cuypers

Capacitance and Electrostatic Field Calculations for Hybrid Circuits 417
S. Demurie and G. De Mey

A Boundary Element Analysis of the Space Charge Effect on Corona Induced Vibration 429
A. Gakwaya and M. Farzaneh

Application of the Thin Cavity Method to Shield Calculations in Electroplating 441
L.J. Gray and G.E. Giles

INVITED PAPER

Boundary Element Simulation of Galvanic Corrosion - The Story of a Major Success for Boundary Elements 453
R.A. Adey and S.M. Niku

Application of BEM in Analysis of Field Emission Instruments 483
G.S. Gipson, J.C. Ortiz and C.V. Camp

Calculation of Current Field in Large Aluminum Reduction Cells using the BEM 493
J. Lu and W. Chang

Applied Electrochemical Cell Design 505
J. Deconinck

Calculation of Eddy Currents in a Body of Revolution by the Boundary Element Method 517
A. Kost and M. Viz

Variational Methods for Eddy Current Problems 535
D. Hudak and R.C. MacCamy

INVITED PAPER

The Effect of Die-Bond Voids on the Thermal Performance Degradation of Solid-State Devices 543
A.L. Palisoc, J. Min and C.C. Lee

