

SCIENTIFIC PROGRAM

SUNDAY, MAY 29, 2005

09:30 - 10:30 OPENING SESSION

(HALL 1)

Chair: E. Sher

09:30 - 09:50 Greetings

09:50 - 10:30

Plenary lecture:

The Technologicistic Challenge in Dynamic Changeable Environment

Major General Udi Adam

Chief of Technology & Logistics Branch, IDF

10:30 - 11:00

COFFEE BREAK AND POSTER SESSIONS

(FOYER)

11:00 - 12:30 PARALLEL SESSIONS A

11:00 - 12:30 SESSION A1 - CFD

(HALL 1)

Chair: B. Greenberg

Numerical Simulation of Store Separation Using Advanced CFD Application

Y. Levy¹, M. Adar²

¹Faculty of Aerospace Engineering, Technion-Israel Institute of Technology

²Israeli Air-force

Hemodynamic Aspects of Artificial Heart Devices: Use of CFD in Bio-Engineering

M. Rosenfeld¹, I. Avrahami², S. Einav³

¹School of Mechanical Engineering, Faculty of Engineering, Tel-Aviv University

²Department of Biomedical Engineering, Faculty of Engineering, Tel-Aviv University

Numerical Study of Combustion Processes with Vaporizers

Y. Levy¹, Y. Banzger²

¹Faculty of Aerospace Engineering, Technion-Israel Institute of Technology

²IEC

Development of A Lagrangian-Eulerian two-Phase Flow Solver Based on Full Navier-Stokes Equations for Solid Rocket Motors

S. Yaniv, H. Wirzberger

Rocket System Division, IMI Ltd.

(Sunday, May 29, 2005 - Parallel Sessions A- cont.)

11:00 - 12:30 **SESSION A2 - HEAT AND MASS TRANSFER** (HALL 2)

Chair: Y. Taitel

Evaporation in Parallel Horizontal Pipes - Flow Rate Distribution

U. Minzer, D. Barnea, Y. Taitel

Department of Fluid Mechanics and Heat Transfer, School of Mechanical Engineering, Tel-Aviv University

Performance of PCM-Based Air Conditioner PCM - ביצועי מזגן

G. Ziskind, V. Dubovsky, S. Mozhevelov, R. Letan

Heat Transfer Laboratory, Department of Mechanical Engineering, Ben-Gurion University of the Negev

Laminar Two-Phase Separated Flows: Analytical and Mechanistic Model

A. Goldstein, A. Ullmann, N. Brauner

Department of Fluid Mechanics and Heat Transfer, School of Mechanical Engineering, Tel-Aviv University

Sensible Heat Storage in Solar Concentrating Systems

G. Mittelman, A. Kribus, A. Dayan

Department of Fluid Mechanics and Heat Transfer, School of Mechanical Engineering, Tel-Aviv University

11:00 - 12:30 **SESSION A3 - NON-CONVENTIONAL ENERGY I** (HALL 3)

Chair: U. Fisher

Direct and External Costs of Electrical Power Production – Comparing Fossil-Fuels with Renewable Resources

C. Sugarmen

Ormat Systems Ltd.

Miniature Internal Combustion Engines: Miniaturization Limitations and Challenges

D. Levinzon¹, I. Sher², E. Sher¹

¹*The Pearlstone Center for Aeronautical Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Department of Mechanical Engineering, Technion-Israel Institute of Technology*

Solar-Assisted Induced Ventilation in Real-Size Structures

G. Ziskind, U. Drori

Heat Transfer Laboratory, Department of Mechanical Engineering, Ben-Gurion University of the Negev

11:00 - 12:30 **SESSION A4 - PROTECTIVE STRUCTURES I** (HALL 4)

Chair: I. Anteby

Full Scale Field Tests of Concrete Slabs Subjected to Blast Loads

**A. Schenker¹, I. Anteby¹, Y. Kivity¹, E. Gal², O. Sadot¹, E. Basusa¹,
R. Michaelis¹, O. Levintant¹, G. Ben Dor¹**

¹*Department of Mechanical Engineering, ²Department of Structural Engineering Faculty of Engineering Sciences, Ben-Gurion University of the Negev*

Assesment of the Residual Stability of a Building that was Severly Damaged in Blast

V. Yagust, D. Yankelevsky, A. Dancygier, S. Schwarz, Y. Karinski

National Building Research Institute, Technion-Israel Institute of Technology

Resistance of Normal Strength and High Strength Concrete to Projectile Impact

A. Dancygier, D. Yankelevsky

National Building Research Institute, Technion-Israel Institute of Technology

Towards Improved Response Reinforced Concrete Apartment Buildings to Accidental Blast

D.Z. Yankelevsky, S. Schwarz, Y. Karinski

National Building Research Institute, Technion-Israel Institute of Technology

(Sunday, May 29, 2005 - Parallel Sessions A- cont.)

11:00 - 12:30 **SESSION A5 - SOLID MECHANICS I**

(HALL 5)

Chair: K. Schulgasser

Page

On Generalized Stress Concentration Factors

R. Segev

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Shakedown Fatigue Limits for Materials with Minute Porosity

J. Tirosh, S. Peles

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

The Dynamic Response of Fiber Composites with Viscoelastic Matrices

L. Tevet-Deree, G. deBotton

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Torsion Bar Spring

E. Zahavi

Department of Mechanical Engineering, Ben-Gurion University of the Negev

The Influence of the Microstructure on the Dynamic Response of Composites

D. Shaine, G. deBotton

Department of Mechanical Engineering, Ben-Gurion University of the Negev

11:00 - 12:30 **SESSION A6 - AUTONOMOUS VEHICLES**

(HALL 6)

Chair: Z. Shiller

Physics-Based Global and Local Motion Planning of Ground Vehicles

Z. Shiller

Department of Mechanical Engineering-Mechatronics, The College of Judea and Samaria

Robot Visual Navigation and Homing

I. Shimshoni¹, R. Basri², E. Rivlin¹, L. Goshen¹

¹*Faculty of Industrial Engineering and Management, Technion-Israel Institute of Technology*

²*Weizmann Institute of Science*

A Semi-Passive Mobile Platform for Motion on Slippery Surfaces

S. Shoval¹, A. Shapiro²

¹*Department of Industrial Engineering, College of Judea and Samaria*

²*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

Guardium - Robotic Perimeter Security System

R. Braier

Israel AirCraft Industries, Lahav Division - Innovation Team

(Sunday, May 29, 2005 - Parallel Sessions B)

12:30 - 14:00 PARALLEL SESSIONS B

12:30 - 14:00 SESSION B1 - MICRO CHANNELS AND BIO FLOW (HALL 1)

Chair: A. Seifert

How Do Exposed Skin Temperatures Vary in the Face of Cold Wind – Reflections on the Assessment of Wind Chill Equivalent Temperatures

A. Shitzer

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Gravitational Deposition in a Rhythmically Expanding and Contracting Alveolus

S. Haber¹, A. Tsuda², D. Yitzhak¹

¹*Technion-Israel Institute of Technology*

²*Harvard University, USA*

Single-Phase and Boiling Flows of Surfactant Solutions Through A Set of Parallel Micro-Channels

D. Klein¹, G. Hetsroni²

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Flow Characterization of a Micro-Mixer Based on a Confined Twin-Jet Instability

A. Seifert¹, A. Nahum²

School of Mechanical Engineering, Faculty of Engineering, Tel-Aviv University

12:30 - 14:00 SESSION B2 - HEAT TRANSFER AND CLIMATE CONTROL (HALL 2)

Chair: G. Ziskind

Performance Investigation of Air Condition Split Units: Electronic Expansion Valve vs. Capillary Tube

J. Tiran, E. Rifman

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Interaction Between the Mixing and Displacement Modes in a Naturally-Ventilated Enclosure

J. Tanny¹, V. Haslavsky¹, M. Teitel²

¹*Institute of Soil, Water & Environmental Sciences*

²*Institute of Agricultural Engineering, Agricultural Research Organization, The Volcani Center*

A New Method for Measurement of Onset of Significant Void and Void Fraction at Atmospheric Pressure Flow Boiling

J. Aharon¹, I. Hochbaum², I. Shai³

¹*Ben-Gurion University of the Negev*

²*NRCN*

Experimental Apparatus for Measuring the Effective Thermal Conductivity of Multi Foil Insulation (MFI) in a Radial Array

Y. Haim, Y. Weiss, R. Letan

Ben-Gurion University of the Negev

(Sunday, May 29, 2005 - Parallel Sessions B - cont.)

12:30 - 14:00 **SESSION B3 - NON-CONVENTIONAL ENERGY II** (HALL 3)

Chair: U. Fisher

Solar Hydrogen for Transportation

M. Epstein

Solar Research Facilities Unit, Weizmann Institute of Science

The 100 MW Mokai Geothermal Project

H. Legmann

Ormat Systems Ltd.

Metal Fuel for Transportation and Energy Storage

A. Yogev, E. Gamzon, M. Shmueli

Engineuity R&D Ltd., Ashkelon Technology Industry (A.T.I)

Integration of Temperature Control Algorithm in Fluent Finite Volume Model for Closed Loop Transient Simulation and Design

Z. Brand¹, I. Cohen², E. Kochavi², B. Ostraich², G. Rodnay¹

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Department of Design and Development, Rotem Industries Ltd.*

12:30 - 14:00 **SESSION B4 - PROTECTIVE STRUCTURES II** (HALL 4)

Chair: D. Yankelevski

Dynamic Pressure and Impulse Measurements in Real Explosion Tests

G. Tibon, M. Mayselless, Y. Babo

TAAS, IMI

Design and Calibration of a Mechanical Simulator for Impact & Blast Waves Produced by Explosions

O. Haham¹, I. Anteby¹, O. Sadot¹, Y. Kivity¹, B. Ostraich¹, E. Nizri¹, A. Schenker¹, R. Michaelis¹, E. Gal², G. Ben-Dor¹

¹*Department of Mechanical Engineering, ²Department of Construction Engineering, Faculty of Engineering Sciences, Ben-Gurion University of the Negev*

Dynamics of Shut Off and Transient Flow Over a Blast Valve

M. Liverts, A. Britan, G. Ben-Dor, H. Shapiro, E. Liverts

Shock Tube Laboratory, Department of Mechanical Engineering, Faculty of Engineering Sciences, Ben-Gurion University of the Negev

The Behavior of Safety Glass Under Dynamic Load

N. Trabelsy, E. Kluska, I. Anteby, J. Hormadaly, G. Ben-Dor

Protective Technologies Research and Development Center, Department of Mechanical Engineering, Faculty of Engineering Sciences, Ben-Gurion University of the Negev

12:30 - 14:00 **SESSION B5 - NOISE AND VIBRATION** (HALL 5)

Chair: Y. Grinberg

Degenerate Bifurcation Scenarios in the Dynamics of Coupled Oscillators with Symmetric Nonlinearities

O.V. Gendelman

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

Propagation of Non-Stationary Elastic Waves in an Infinite Strip Using the New Spectral Technique

A. Golubchik, D. Livshits

IMI-RSD, Rocket Systems Division, Israel Military Industries

(Sunday, May 29, 2005 - Parallel Sessions B - cont.)

Analytical Solutions of Natural Frequencies and Mode Shapes for Non-Homogeneous Rods

S. Nachum, E. Altus

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

Blind Deconvolution Source Separation of Multiple Source Mixture with Application to Fault Detection

R. Peled¹, S. Braun²

¹*Ort Braude College*

12:30 - 14:00 **SESSION B6 - OPTIMIZATION & MEASUREMENTS** (HALL 6)

Chair: E. Kochavi

Recalculation of Sizes and Tolerances on Change of Measuring and Setting Bases

I. Lopatukhin, M. Shpitalni

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

Coordinate Measurement, Roughness Measurement and Thermal Diagnostics as Parts of Contemporary Quality Management System

M. Rucki, J. Chajda, B. Gapinski, A. Gazdecki, M. Grzelka, L. Rozanski, P. Swornowski, M. Szelewski, M. Wieczorowski

Division of Metrology and Measuring Systems, Institute of Mechanical Technology, Poznan University of Technology, Poland

High Speed Machine Vision in Mechatronic Systems: Application to Agricultural Systems

V. Alchanatis, Y. Kashti, R. Brikman, S. Ostrovsky, L. Reshef, H. Beres

Institute of Agricultural Engineering, Agricultural Research Organization, The Volcani Center

Optimal Synthesis of Design Concepts from a Morphological Diagram

Y. Gilboa, M.P. Weiss, A. Cohen

The laboratory of Integrated Design, Technion-Israel Institute of Technology

14:00-15:00 **LUNCH** (JAFFA COURT)

15:00 - 16:30 **PARALLEL SESSIONS C**

15:00 - 16:30 **SESSION C1 - FLOW AND TURBULENCE I** (HALL 1)

Chair: M. Mond

Stability Thin Rotating Disks in the Presence of a Uniform Axial Magnetic Field

M. Mond, E. Liverts, Y.M. Shtemler

Department of Mechanical Engineering, Ben-Gurion University of the Negev

New Manifestations of Negative Viscosity in Ferrofluids

M.I. Shliomis

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Self-Assembly of Elongated Micron-Size Rods by Moving Droplets

E. Katz, A.L. Yarin

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

A New Spectral Theory of Turbulent Flows with Stable Stratification and its Application to Stratified Boundary Layers

S. Sukoriansky¹, B. Galperin²

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*College of Marine Science, University of South Florida, St. Petersburg, Florida, USA*

(Sunday, May 29, 2005 - Parallel Sessions C - cont.)

15:00 - 16:30 SESSION C2 - NAVAL ARCHITECTURE I

(HALL 2)

Chair: A. Biran

Adaptive Control of an Underwater Vehicle

A. Tiano¹, P. Ridao², M. Carreras², A. El-Fakdi²

¹Department of Information and Systems, University of Pavia, Italy

²Institute of Informatics and Applications, University of Girona, Spain

The Influence of a Lifting Foil on the Performance of a High-Speed Catamaran

A. Friedman¹, L.J. Doctors²

¹Tel-Aviv University

²The University of New South Wales, Sydney, Australia

Lyapunov Identification of Marine Vehicles

A. Tiano

Department of Informatics and Systems, University of Pavia, Italy

New Concept of Cage Aquaculture System for Open Sea

N. Drimer

CAMERI – Coastal and Marine Engineering Research Institute Ltd.

15:00 - 16:30 SESSION C3 - SOLAR ENERGY

(HALL 3)

Chair: A. Kribus

Building-Integrated Combined Heat and Power Solar Collector

**M. Arenson¹, A. Kribus¹, J. Appelbaum¹, G. Tovarovsky¹, G. Grossman²,
G. Capeluto³, A. Yezioro³, A. Kudish⁴**

¹Faculty of Engineering, Tel-Aviv University

²Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

³Faculty of Architecture and Town Planning, Technion-Israel Institute of Technology

⁴Institutes of Applied Research, Ben-Gurion University of the Negev

Analysys of A Miniature Solar CHP System

A. David¹, D. Kaftori¹, A. Kribus²

¹Disp

²Tel-Aviv University

Fundamental Analysis of Characteristics and Limitations of Concentrated Solar Systems

J. Karni

Department of Environmental Science and Energy Research, Weizmann Institute of Science

Cogeneration with Concentrating Photovoltaic Collectors

G. Mittelman, A. Kribus, A. Dayan

Faculty of Engineering, Tel-Aviv University

15:00 - 16:30 SESSION C4 - SHOCK WAVES

(HALL 4)

Chair: O. Igra

Various Ways for Achieving Quick Shock Waves Attenuation

O. Igra

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Passive Deflector for Attenuation of Shock Waves

A. Britan, G. Ben-Dor, O. Igra

Shock Tube Laboratory, Pearlstone Center for Aeronautical Engineering Studies,

Department of Mechanical Engineering, Ben-Gurion University of the Negev

(Sunday, May 29, 2005 - Parallel Sessions C - cont.)

Displacement of Solutes in Saturated Porous Media as a Result of Shock Wave Propagation

N. Gafni, A. Gross, S. Sorek

Department of Environmental Hydrology & Microbiology, Zuckerberg Institute for Water Research, J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev

Post-Shock Filtration Through Granular Media: Similarity Solutions and Shock Tube Resources

H. Shapiro, A. Britan, O. Igra, G. Ben-Dor

Shock Tube Laboratory, Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev

15:00 - 16:30 **SESSION C5 - MACHINE THEORY**

(HALL 5)

Chair: B. Sandler

The Right Selection of Rolling Bearings

H. Grübel

FAG Kugelfischer AG & Co. oHG, Germany

Parallel Kinematics in Precision Machine Tools

Y. Shneur¹, V. Portman², E. Abramov¹

¹*CAMT, Center for Advanced Manufacturing Technology, Rotem Industries Ltd.*

²*Department Mechanical Engineering, Ben-Gurion University of the Negev*

Development of a New Pedestal for a Radar in a Balloon

R. Levy, D. Shitrit, A. Shor, Y. Mor

Department of Mechanical Engineering, IMINT and Radar Division, ELTA Systems Ltd., Group & Subsidiary of IAI

The New Generation of Packaging Cad Cam Systems Raod Map

T. Goldman

McKIT Systems

15:00 - 16:30 **SESSION C6 - CONCEPTUAL PRODUCT DESIGN**

(HALL 6)

Chair: O. Shai

Conceptual Design Technique Employing Graph-Theoretical Representations

O. Shai, D. Rubin

Department of Mechanics, Materials and Structures, Tel-Aviv University

Optimal Robust Concepts & Configurations

A. Ziv-Av¹, Y. Riech²

¹*Ziv-Av Engineering, Israel*

²*Department of Mechanical Engineering, Tel-Aviv University*

T.P.M. Total Productive - צעדים ליישום - ייצורית כוללת

Y. Raz

Aviv Management, Engineering and Information Systems

A Business-Oriented Approach to the Product Life Cycle

G. Molcho, M. Shpitalni

Laboratory for CAD and LCE, Department of Mechanical Engineering, Technion-Israel Institute of Technology

(Sunday, May 29, 2005 - Parallel Sessions D)

16:30 - 18:00 PARALLEL SESSIONS D

16:30 - 18:00 SESSION D1 - FLOW AND TURBULENCE II

(HALL 1)

Chair: A. Yakhot

Treatment of Pressure Term in Global Galerkin Method with an Arbitrary Inner Product for Incompressible Navier-Stokes Equations

A. Gelfgat

School of Mechanical Engineering, Faculty of Engineering, Tel-Aviv University

Hydrodynamic Forces and Moments on Two Slender Bodies Moving in Close Proximity

O. Kadry, D. Weihs

Faculty of Aerospace Engineering, Technion-Israel Institute of Technology

Direct Numerical Simulation of Turbulent Flow in Elliptical Ducts

A. Yakhot¹, N. Nikitin²

¹*The Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Institute of Mechanics, Moscow State University, Moscow, Russia*

DNS of Turbulent Flow and Heat Transfer Around A Wall-Mounted Cube

A. Yakhot¹, H. Liu¹, N. Nikitin²

¹*The Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Institute of Mechanics, Moscow State University, Moscow, Russia*

16:30 - 18:00 SESSION D2 - NAVAL ARCHITECTURE II

(HALL 2)

Chair: A. Biran

Transition in Ship Construction in Antiquity

Y. Kahanov

Recanati Institute for Maritime Studies, University of Haifa

Metallurgical Analysis of the Athlit Ram

S. Eisenberg

EL-SHAR Metal Industries Ltd.

The Dor 2002/2 Shipwreck and Its Construction Details: Was it One of Napoleon's Vessels?

D. Cvikel

Department of Maritime Civilizations, University of Haifa

The Original Ma'Agan Mikhael Ship

A. Ben Zeev

Department of Maritime Civilizations, University of Haifa

(Sunday, May 29, 2005 - Parallel Sessions D - cont.)

16:30 - 18:00 SESSION D3 - ELECTRONIC PACKAGING

(HALL 3)

Chair: E. Dolev and M. Ramot

Using Accelerated Testing to Verify Lead Free Product Reliability for Proper Field Life Service

A. Helbitz

HALT Laboratory, ECI-Telecom Ltd.

Transient Heat Transfer Analysis of a Radiation Detector

E. Dolev¹, I. Brandys¹, U. Wengrowics¹, E. Vulasky², M. Ellenbogen², R. Atias¹, T. Mazor², D. Tirosh¹

¹*Department of Electronic and Control, Nuclear Research Center*

²*Rotem Industries Ltd.*

Facility for MOEMS Environmental Robustness and Reliability Testing

Z. Sherf, G. Ostrovski, P. Hopstone

Rafael

New Challenge in Chassis Design – Advance TCA

E. Levy

CAS - Computerized Analysis and Simulations Ltd.

16:30-18:00 SESSION D4 - DYNAMIC RESPONSE OF MATERIALS

(HALL 4)

Chair: E. Zaretsky

The Important Dynamic Properties for the Terminal Ballistics of Long Rods

Z. Rosenberg

Armament Development Authority

The Influence of Preload and Initial Geometry on the Onset of Adiabatic Shear Band

Z. Wang, M. Merzer, D. Rittel

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

The Mechanical Response of Pure Iron at High Strain Rates Under Dominant Shear

D. Rittel¹, G. Ravichandran², A. Venkert³

¹*Faculty of Mechanical Engineering, Technion-Israel Institute of Technology*

²*Graduate Aeronautical Laboratories, California Institute of Technology, USA*

³*NRCN Negev*

A Study of Compressive Failure of Alumina Ceramics in Impact Experiments with Divergent Stress Flow

V.E. Paris¹, E.B. Zaretsky¹, G.I. Kanel²

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Institute for High Energy Densities, Russian Academy of Sciences, Moscow, Russia*

(Sunday, May 29, 2005 - Parallel Sessions D - cont.)

16:30 - 18:00 **SESSION D5 - STRESS ANALYSIS**

(HALL 5)

Chair: R. Segev

The Breaking Load of A Non-Rotating Wire Rope in Tower Crane Applications

R. Ashkenazi¹, D. Elata², M. P. Weiss²

¹Nuclear Research Center, Negev (NRCN)

²Technion-Israel Institute of Technology

Failure Mechanism in Filament Wound Pressure Vessels

D. Livshits, A. Golubchik

Rocket Systems Division, Israel Military Industries

Smart Bonded Composite Repairs for Aging Aircraft

I. Kressel¹, A.K. Green¹, U. Ben-Simon¹, G. Ghilai¹, Y. Budtsev²,

N. Gorbatov², M. Tur², S. Gali³

¹IAI Engineering Division, Ben-Gurion International Airport

²Tel-Aviv University

³Consultant

Graphite Fiber Thermal Strap Reliability Issues for Aerospace Cooling Applications

D. Lozano

Mechanical Analysis Department, ELOP Electro-Optics Industries Ltd.

16:30 - 18:00 **SESSION D6: PRODUCTION TECHNOLOGY AND MANAGEMENT**

(HALL 6)

Chair: A. Eyal

Dynamic Evolution of Product Design Process

A. Karniel¹, Y. Reich^{1,2}

¹ Department of Solid Mechanics Materials and Systems, School of Mechanical Engineering, Tel-Aviv University

²Center for Design Research, Stanford University, Stanford, CA, USA

Design of Roll and Plough Mixers for the Preparation of Moulding Mixtures – Calculations

S.M. Ionescu¹, C. Samoila²

¹University "Politehnica" Bucharest, Romania

²University "Transylvania" Brasov, Romania

Polyjet Technology and New Resins for Rapid Prototyping

D. Danai

VP Objet Geometrics Ltd.

Product Life Cycle Management (PLM) – פתרונות ויישומים לקונסטרוקציה באמצעות המערכת Teamcenter

A. Danielli

Mckit Systems Ltd

19:30 **ALUMNI MEETING**



(HALL 1)

Sponsored by: **LUZZATTO & LUZZATTO**

MONDAY, MAY 30, 2005

09:30 - 10:50 PLANERY SESSION

(HALL 1)

Chair: E. Sher

09:30 - 10:10

Plenary lecture:

"Innovation in Mechanical Engineering in Israel"

Yehuda Bronicki

Chairman and CTO, ORMAT Systems Ltd.

10:10 - 10:50

Plenary lecture:

"Challenges and Opportunities in Thermal Engineering at the Micro and Nano Scales"

Professor Avram Bar-Cohen

University of Maryland, USA

10:50 - 11:30

COFFEE BREAK AND POSTER SESSION

Sponsored by: ORMAT Systems Ltd.



11:30 - 13:00 PARALLEL SESSIONS E

11:30 - 13:00

SESSION E1 - ENGINEERING DEVELOPMENT FOR MILITARY SYSTEMS

(HALL 1)

Chair: Col. Y. Hochman

Introduction

Col. Y. Hochman

Technology Unit, IDF

TAVOR Rifle Development – Past, Present & Future

Z. Shneorson

Technology Unit, IDF

Unmanned Ground Vehicles

A. Katz

Technology Unit, IDF

Accelerated Development Processes in Security Projects

I. Skuratovsky

Technology Unit, IDF

Major Challenges in Simulation of Ballistic Phenomena

E. Muzychuk

Test Evaluation Quality Assurance Unit, IDF

(Monday, May 30, 2005 - Parallel Sessions E - cont.)

11:30 - 13:00 SESSION E2 - ROBOTICS

(HALL 2)

Chair: E. Rimon

Quasistatic Locomotion of Multi-Legged Robots in Frictional Environments Under Gravity

Y. Or, E. Rimon

Department of Mechanical Engineering, Technion-Israel Institute of Technology

A Snail Inspired Wall Climbing Robot for Counter Terrorism Duty

A. Shapiro, I. Mhpoda, H. Zuk

Department of Mechanical Engineering, Ben-Gurion University of the Negev

CBUG: A Quadratically Competitive Mobile Robot Navigation Algorithm

Y. Gabriely, E. Rimon

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Identification of Micro Parallel Robot's Singularity Using Line Geometry

H. Bamberger^{1,2}, A. Wolf³, M. Shoham²

¹ RAFAEL - Armament Development Authority Ltd.

² Robotics Laboratory, Department of Mechanical Engineering, Technion-Israel Institute of Technology

³ The Robotics Institute, Carnegie Mellon University, Pittsburgh, PA, USA

11:30 - 13:00 SESSION E3 - CONVEYING & HANDLING OF PARTICULATE SOLIDS

(HALL 3)

Chair: M. Haim

Conduction Heat Transfer in A Dispersed Phase During Turbulent Gas-Particles Flow

M. Haim, Y. Weiss, H. Kalman

Ben-Gurion University of the Negev

Critical Velocity from a Layer of Particles in Horizontal Pneumatic Conveying

E. Rabinovich, A. Satran, D. Meir, H. Kalman

*Laboratory for Conveying and Handling of Particulate Solids,
Department of Mechanical Engineering, Ben-Gurion University of the Negev*

Functions for Simulation Of Breakage

V. Rodnianski, H. Kalman

*Laboratory for Conveying and Handling of Particulate Solids,
Department of Mechanical Engineering, Ben-Gurion University of the Negev*

The Fatigue Function for Population Balance Model

M. Shvartsman, H. Kalman

*Laboratory for Conveying and Handling of Particulate Solids,
Department of Mechanical Engineering, Ben-Gurion University of the Negev*

(Monday, May 30, 2005 - Parallel Sessions E - cont.)

11:30 - 13:00 **SESSION E4 - BIO MECHANICS I**

(HALL 4)

Chair: A. Gefen

Real-Time Detection of Internal Injuring Mechanical Stresses in Externally Loaded Soft Tissues: Toward Prevention of Pressure Sores and Diabetic Ulcers

A. Gefen¹, Z. Yizhar², S. Portnoy¹, E. Linder-Ganz¹, G. Yarnitzky¹

¹Department of Biomedical Engineering, Tel-Aviv University

²Department of Physical Therapy, Tel-Aviv University

The Determination of Elastic Properties of Cortical Bone Using State of the Art Methods of Optical Metrology

R. Shahar^{1,2}, S. Weiner², P. Zaslansky²

¹Koret School of Veterinary Medicine, The Hebrew University of Jerusalem

²Department of Structural Biology, Weizmann Institute of Science

Comparison Between Behaviours of Young and Elder Subjects During a Functional Reach Test

R. Steindler, L. Monteleone, S. Pettinelli

Department of Mechanics and Aeronautics, Rome University "La Sapienza", Italy

Biomechanical Aspects of Plaque Rupture in Multi-Focal Atherosclerotic Disease

J.E. Martinez¹, Z. Aronis¹, E. Linder-Ganz¹, S. Raz¹, I. Shraga¹,

V. Caplan¹, Y. Lanir², S. Einav¹

¹Department Biomedical Engineering, Tel-Aviv University

²Department of Biomedical Engineering, Technion-Israel Institute of Technology

Mechanical Properties of Biodegradable Stents and their Components

M. Zilberman

Department of Biomedical Engineering, Tel-Aviv University

The Effect of Root Morphology on Vertical Root Fracture in Endodontically Treated Teeth: An *in Virto* Model

T. Brosh¹, Z. Metzger^{1,2}, H. Baharav², R. Pilo²

¹Department of Oral Biology, Tel-Aviv University

²Department of Oral Rehabilitation, School of Dental Medicine, Tel-Aviv University

11:30 - 13:00 **SESSION E5 - ACTIVE MATERIALS**

(HALL 5)

Chair: G. deBotton

Investigation of Twin Wall Structure at the Nanometer Scale Using Atomic Force Microscopy

D. Shilo¹, G. Ravichandran², K. Bhattacharya²

¹Department of Mechanical Engineering, Technion-Israel Institute of Technology

²Division of Engineering and Applied Science, California Institute of Technology, Pasadena, CA, USA

Electroactive Polymers - Application to Sequentially Laminated Composites

L. Tevet-Deree, G. deBotton

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Electroactive Polymer Composites - A Coupled Electromechanical Problem of Heterogeneous Solids in Finite Deformation

E. Socolsky, G. deBotton

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Delamination Failure and Piezoelectric Actuation in Beams Strengthened with Composite Materials

O. Rabinovitch

Faculty of Civil and Environmental Engineering, Technion - Israel Institute of Technology

(Monday, May 30, 2005 - Parallel Sessions E - cont.)

11:30 - 13:00 SESSION E6 - MANUFACTURING AND TESTING I (HALL 6)

Chair: A. Stern

Magnetic Pulse Welding - A Novel Joining Technique

A. Ben-Artzy¹, A. Stern², N. Frage², V. Sribman³

¹Rotem industries Ltd.

²Ben-Gurion University of the Negev

³Pulsar Welding Ltd.

Leak Testing of MOEMS – Theory and Practice

T. Bar-Kohany¹, K. Feldman¹, A. Stern²

¹Department of Mechanical Engineering, Ben-Gurion University of the Negev

²Department of Materials Engineering, Ben-Gurion University of the Negev

MOEMS Encapsulation Evaluation Using Scanning Acoustic Microscopy

S. Meir¹, A. Stern¹, K. Feldman¹, T. Shmul², A. Azulay²

¹Ben-Gurion University of the Negev

²Soreq NRC

New Developments in Laser Assisted Friction Stir Welding

G. Kohn^{1, 2}, A. Stern³, K. Feldman^{1,3}, S. Kalai^{1,3}

¹JT Welding Technologies Ltd.

²Rotem Industries Ltd.

³Ben-Gurion University of the Negev

13:00 - 14:00 LUNCH (JAFFA COURT)

14:00 - 15:30 PARALLEL SESSIONS F

14:00 - 15:30 SESSION F1 - TRIBOLOGY I - LASER SURFACE TEXTURING (HALL 1)

Chair: I. Garbar

State of the Art in Laser Surface Texturing

I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

An Analytical Model of the Friction Between a Partially Laser Surface Textured Piston Ring and Cylinder Liner

A. Shinkarenko, Y. Kligerman, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Experimental Investigation of Partial Laser Surface Texturing for Piston Rings Friction Reduction

G. Ryk, Y. Kligerman, I. Etsion, A. Shinkarenko

Department of Mechanical Engineering, Technion-Israel Institute of Technology

A Hydrostatic Laser Surface Textured Gas Seal

Y. Feldman, Y. Kligerman, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

(Monday, May 30, 2005 - Parallel Sessions F - cont.)

14:00 - 15:30 SESSION F2 - CONTROL I

(HALL 2)

Chair: N. Berman

An Auto-Tuner for Decentralized Dead-Time Compensators and Its Application to the Quadruple-Tank Process with Dead Times

Z.J. Palmor^{1,2}, D. Shneiderman¹, U. Burshtein², N. Albersheim²

¹Department of Mechanical Engineering, Technion-Israel Institute of Technology

²Rafael

Properties of a Novel Quadruple Tank Process with Dead-Times

Z.J. Palmor, D. Shneiderman

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Control of Multi-Link Flexible Structures

C. Wagner-Nachshoni, Y. Halevi

Technion-Israel Institute of Technology

Autonomous Vehicles Control

S. Arogeti, N. Berman

Department of Mechanical Engineering, Ben-Gurion University of the Negev

14:00 - 15:30 SESSION F3 - AUTOMOTIVE ENGINEERING I

(HALL 3)

Chair: L. Tartakovsky

Wankel Rotary Engine - The Past and the Present

M. Dulger

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Some Considerations About Controlling In-Use Gasoline Vehicle Emissions

M. Gutman¹, E. Berlin², Y. Aleinikov¹, V. Baybikov¹, B. Flicstein², Z.Fuhrer², L. Tartakovsky¹, Y. Zvirin¹

¹Department of Mechanical Engineering, Technion-Israel Institute of Technology

²Association of Haifa Region Municipalities for Environment

Fluid Piston Engine as Circulation Pump in Cooling Systems

I. Orian

T.D.I. - Thermo Dynamics Israel Ltd.

The Effect of Fuel Injection Profile on Diesel Engine Performance

G. Goldwine, E. Sher

Department of Mechanical Engineering, Ben-Gurion University of the Negev

14:00 - 15:30 SESSION F4 - BIO MECHANICS II

(HALL 4)

Chair: Y. Mizrachi

A Model of Human Carotid Bifurcation Incorporating Collagen Fiber Orientation

I. Hariton¹, G. deBotton¹, T.C. Gasser², G.A. Holzapfel²

¹Department of Mechanical Engineering, Ben-Gurion University of the Negev

²Institute for Structural Analysis, Computational Biomechanics, Graz University of Technology, Austria

Mechanical Interaction Between Stent and Artery

M. Brand^{1,2}, S. Rivkin², S. Einav³

¹Department of Mechanical Engineering - Mechatronics, The College of Judea and Samaria

²Department of Solid Mechanics, Materials and Systems, Faculty of Engineering, Tel-Aviv University

³Department of Biomedical Engineering, Faculty of Engineering, Tel-Aviv University

(Monday, May 30, 2005 - Parallel Sessions F4 - cont.)

Biologically Inspired Online Robotic Path Generator

T. Valency, M. Zacksenhouse

*Sensory Motor Integration Laboratory, Faculty of Mechanical Engineering,
Technion-Israel Institute of Technology*

Optimization of a Combined Nitinol/Polymer Device Using FEA

S. Keidar¹, E. Konstantino², T. Feld²

¹*Consulting Analyst*

²*AngioScore Inc., Alameda, CA, USA*

14:00 - 15:30 **SESSION F5 - SOLID MECHANICS II**

(HALL 5)

Chair: M. Rubin

Consistent Representation of General Three-Dimensional Loading in Thin Plates

I. Sokolov, V. Krylov, I. Harari

*Department of Solid Mechanics, Materials and Systems, School of Mechanical Engineering,
Faculty of Engineering, Tel-Aviv University*

Evaluation of Stress, Strain and Displacements in Bolted Joints

T. Gati, D. Barlam, M. Peri

Department of Mechanical Engineering, Ben-Gurion University of the Negev

The Influence of Boundary Conditions on Buckling of Columns and Plates Using the Theory of a Cosserat Point

D. Klepach, M. Rubin

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

Towards a Reliable Mechanical Simulation of the Proximal Femur – A New Method of Material Assignment

R. Fedida¹, Z. Yosibash¹, C. Milgrom², L. Joskowicz³, A. Simkin²

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Department of Orthopaedic Surgery, Hadassah University Hospital*

³*School of Computer Science and Eng., The Hebrew University Jerusalem*

14:00 - 15:30 **SESSION F6 - MANUFACTURING AND TESTING II**

(HALL 6)

Chair: V. Portman

Integration of Methods to Maximize Metal Removal Rates in Modern Manufacturing Facilities Using Extensive R&D Work

M. Goldberg¹, R. Wertheim², J. Harpaz²

¹*ISCAR Ltd.*

Relative Positioning of Planar Parts in Toleranced Assemblies

Y. Ostrovksy-Berman, L. Joskowicz

School of Engineering and Computer Science, The Hebrew University of Jerusalem

6-DOF Single Mass, Isotropic Accelerometer

V. Chapsky, V. Portman, B. Sandler

Department of Mechanical Engineering, Ben-Gurion University of the Negev

Substitute Geometry of the Features of Size

V. Portman¹, Y. Rubenchik¹, Y. Schneor²

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Center of Advanced Manufacturing Technology, Rotem Industries, Ltd.*

(Monday, May 30, 2005 - Parallel Sessions G)

15:30 - 17:00 PARALLEL SESSIONS G

15:30 - 17:00 SESSION G1 - TRIBOLOGY II - CONTROL PHENOMENA UNDER FRICTION AND WEAR (HALL 1)

Chair: L. Rapoport

The Validity of Reynolds Equation in Modeling Hydrostatic Effects of Surface Texturing in Gas Lubricated Parallel Surfaces

Y. Kligerman, Y. Feldman, I. Etsion, S. Haber

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Experimental Procedure for Investigation of Friction in Piston-Pin Joint

G. Halperin, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Unloading of an Elastic-Plastic Spherical Contact

Y. Kadin, Y. Kligerman, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Multiple Loading-Unloading of an Elastic-Plastic Spherical Contact

Y. Kadin, Y. Kligerman, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Yielding Inception of a Spherical Contact under Slip and Stick Conditions for Various Material Properties

V. Brizmer, Y. Kligerman, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

15:30 - 17:00 SESSION G2 - CONTROL II

(HALL 2)

Chair: A. Ailon

Trajectory Following and Point-to-Point Control of an Autonomous Kinematic Vehicle

A. Ailon¹, N. Berman², S. Arogeti¹

¹*Department of Electrical and Computer Engineering, Ben-Gurion University of the Negev*

²*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

Nonlinear Dynamics, Stability and Control of a Scanning Microbeam for Noncontacting Atomic Force Microscopy

S. Pragaj, O. Gottlieb

Department of Mechanical Engineering, Technion-Israel Institute of Technology

Organization of the Feedback for Gantry System

I. Rusnak

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Point to Point Fuzzy Logic Control for AGV with Differential Drive

Z. Brand¹, I. Brandys², G. Rodnay¹

¹*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*NRCN*

(Monday, May 30, 2005 - Parallel Sessions G - cont.)

15:30 - 17:00 **SESSION G3 - AUTOMOTIVE ENGINEERING II** (HALL 3)

Chair: S. Ben-Ari

European Heavy Diesel Engine Development Euro 0 - Euro 5

S. Ben Ari

EGGED

Reduction of Emissions from Heavy Duty Diesel Engines by Exhaust Gases Aftertreatment

L. Tartakovsky, Y. Aleinikov, V. Baybikov, M. Gutman, M. Veinblat, Y. Zvirin

*Internal Combustion Engines Laboratory, Faculty of Mechanical Engineering,
Technion-Israel Institute of Technology*

Chassis Design for a 4X4 Vehicle

D. Hermann

Hermann Automotive Engineering

The Israeli Fuels Evolution from Euro-0 to Euro-5

R. Brokman

Oil Refineries, Haifa

15:30 - 17:00 **SESSION G4 - BIO MATERIALS CORROSION** (HALL 4)

Chair: N. Eliaz

Can Silicon "Corrode" Under Unfavorable Extreme Conditions?

Y. Ein-Eli, N. Gordon, M. Kovler, D. Starosvetsky

Department of Materials Engineering, Technion-Israel Institute of Technology

Incorporation of Growth Factors into a Sol-Gel Glass Coating on Ti Wires: a Model Study Using Trypsin Inhibitor

T. Oren, I. Gotman, E.Y. Gutmanas

Department of Materials Engineering, Technion-Israel Institute of Technology

The Fixion Expandable Intramedullary Nailing System for Treatment of Long Bone Fractures. The Influence of Material Composition on Biomechanical Properties

R. Shavit¹, E. Steinberg²

¹*Disc-O-Tech Medical Technologies Ltd.*

²*Department of Orthopaedic Surgery, Tel-Aviv Sourasky Medical Center*

Biomaterials and Corrosion

N. Eliaz

*Biomaterials and Corrosion Lab, Department of Solid Mechanics, Materials and Systems,
Tel-Aviv University*

(Monday, May 30, 2005 - Parallel Sessions G - cont.)

15:30 - 17:00 **SESSION G5 - INSTABILITY AND SOCK WAVES** (HALL 5)

Chair: G. Ben-Dor

Experimental Investigation of the Rayleigh-Taylor Instability for the A=1 Case

L. Uzan, O. Sadot, E. Sarid, A. Yosef-Hai, D. Shvarts, G. Ben-Dor, L.A. Levin

Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev

Investigation of the Hydrodynamic Instability Induced by Multiple Acceleration of a Contact Surface Between Two Fluids

E. Leinov¹, A. Formoza¹, A. Yosef-Hai^{1,2}, G. Malamud^{1,2}, Y. Elbaz², O. Sadot², L.A. Levin¹, D. Shvarts^{1,2}, G. Ben-Dor¹

¹*Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev*

²*Physics Department, Nuclear Research Center*

Simulating Fluid Dynamics Using a Variational Principle

G.A. Pinhasi¹, A. Yahalom¹, M. Kopylenko²

¹*Faculty of Engineering, The College of Judea and Samaria*

²*FLOW-SIM Ltd.*

Experimental Investigation of the Propagation of Shock Waves Inside Structures, and the Comparison to Numerical Simulations

S. Berger, G. Ben-Dor, O. Sadot

Department of Mechanical Engineering, Ben-Gurion University of the Negev

15:30 - 17:00 **SESSION G6 - MANUFACTURING AND TESTING III** (HALL 6)

Chair: A. Landau

The Development of High Strength Magnesium Alloys by Rapid Solidification

A. Ben-Artzy¹, A. Shtechman¹, J. Salah¹, D. Shechtman², J. Kinstler², J. Wienberg¹

¹*Rotem Industries Ltd.*

²*Faculty of Material Science, Technion-Israel Institute of Technology*

Investigation of the Surface Waviness During High-Precision Turning, Based on Analysis of Dynamic System of the Machine Tool

O. Zilcha¹, Y. Shneur¹, Y. Pdut¹, V. Portman²

¹*Rotem Industries Ltd., Rotmax Division*

²*Department of Mechanical Engineering, Ben-Gurion University of the Negev*

Light and Heavy Reactive Materials, Welded by Friction Stir Welding

A. Landau¹, S. Haroush², M. Pinkas¹, M. Talianker², Y. Snir¹, S. Eden¹

¹*Nuclear Research Center*

²*Department of Materials Engineering, Ben-Gurion University of the Negev*

Reliable Simulation of a Metal Forming Process by FEM

M. Korengold, M. Szanto, Z. Yosibash

Pearlstone Center for Aeronautical Engineering Studies, Department of Mechanical Engineering, Ben-Gurion University of the Negev

(Monday, May 30, 2005 - Sessions H)

17:00 - 18:30 **PLENARY SESSION H: TRIBOLOGY III - FRICTION AND WEAR
OF MATERIALS** (HALL 1)

Chair: Y. Kligerman

**The Effect of Active Additives on the Friction of Human Articular
Cartilage**

Y. Merkher, G. Halperin, I. Etsion

Department of Mechanical Engineering, Technion-Israel Institute of Technology

**Tribological Applications of WS₂ (MoS₂) Inorganic Fullerene-Like
Nanoparticles as Solid Lubrication**

L. Rapoport¹, N. Fleisher², R. Tenne³

¹*Holon Academic Institute of Technology*

²*NanoMaterials, Ltd.*

³*Department of Materials and Interfaces, Weizmann Institute of Science*

**Static and Kinetic Friction of Smooth Glass Surfaces Rubbed with
Silicon Oils**

L. Rapoport, V. Shmukler, A. Moshkovich, A. Verdyan

Holon Institute of Technology

**The Influence of Friction Conditions and Material's Mechanical
Properties on the Plastic Deformation of the Surface Layer in
Elasto-Plastic Contact**

L. Levi, D. Barlam, I. Garbar, S. Sorek

Department of Mechanical Engineering, Ben-Gurion University of the Negev

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Vibration Field Effect upon the Gas-Liquid Mass Transfer Parameters

V. Kholmer, L. Grinis, G. Tashker

Department of Civil Engineering, Sami Shamoon College of Engineering

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T. Bar-Kohany, E. Sher

Department of Mechanical Engineering, Ben-Gurion University of the Negev

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New Technique of Combining Moire Interferometry and Photoelasticity

E. Shakour

Mar Elias Campus-Branch of University of Indianapolis, USA

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Heat Pipe for Airborne Systems

M. Shusser¹, A. Asias², A. Leitner², A. Nabi², G. Grossman¹

¹Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

²RAFAEL

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Lifetime of a Superheated Liquid

M. Shusser, E. Elias

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

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Control Algorithm for the Mechanical Robot Moving a Laser Knife in Nasal Septum Surgery

Z. Brusilovski

Brus Technologies Co.

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Developing Academic Lay-Out for Amorphous Metals

N. Haddad¹, M. Fisher²

Department of Mechatronic Engineering, Ort Rehovot College

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Dynamic Buckling of a Stretched Prismatic Bar

D. Livshits, A. Golubchik

IMI-RSD - Rocket Systems Division, Israel Military Industries

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Modeling of Inelastic Impacts with the Help of Smooth Functions

O.V. Gendelman

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

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Advantageous Metrological Properties of Asymmetrical Air Gauges for the Length Measurement Integrated with „Pneutronic“ Devices

M. Rucki, C.J. Jermak

Division of Metrology and Measuring Systems, Institute of Mechanical Technology, Poznan University of Technology, Poznan, Poland

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Dynamic Stability of a Rocker Bogie Vehicle: Longitudinal Motion

M.P. Mann¹, Z. Shiller²

¹ Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

²Department of Mechanical Engineering-Mechatronics, College of Judea and Samaria

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Fundamentals of Machine Construction Technology

I. Lopatukhin, A. Ber

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

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Duality between Graph Representations as a Tool for Design and Establishing of New Concepts

O. Shai, S. Portnoy

Department of Mechanics, Materials and Structures, Tel-Aviv University

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Measurement of Residual Stresses in GTA Spot Welded Ti6Al4V Disks by XRD and Hole Drilling Methods

I. Dahan¹, J. Sariel¹, M. Szanto², A. Stern²

¹*Nuclear Research Center*

²*Department of Materials Engineering, Ben-Gurion University of the Negev*

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Residual Stresses and Their Measurement by XRD and Hole Drilling Methodes

J. Sariel¹, I. Dahan¹, R. Reuven¹, A. Stern²

¹*Nuclear Research Center*

²*Department of Materials Engineering, Ben-Gurion University of the Negev*

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The Application of Magnetic Pulse Welding for Industry

V. Shribman, Y. Livshitz, O. Gafri

Pulsar Ltd. - Electro Magnetic Industrial Technologies

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Characterization of the Mechanical Behavior of Aluminium Foams

O. Levintant, I. Anteby, O. Sadot, A. Schenker, B. Ostraich, S. Harush, R. Michaelis, G. Ben-Dor

Protective Technologies Research and Development Center, Department of Mechanical Engineering, Ben-Gurion University of the Negev

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Experimental Simulation of Partial Loss of Cooling Accident in MTR Fuel Element

J. Aharon¹, I. Hochbaum², M. Katz², G. Vaidenfeld², M. Haim², D. Saphir³

¹*Ben-Gurion University of the Negev*

²*Nuclear Research Center*

³*Soreq Nuclear Research Center*

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Experimental Acknowledgement of a Unitary Theory on Preparing Moulding Mixtures

S.M. Ionescu

University "Politehnica" Bucharest, Romania

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Limit Loads of Heterogeneous Structures

J. Saffury, E. Altus

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

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After Treatment of Lean Burn Engines Control Strategies

E. Golgotiu, R. Drosescu

Technical University „Gh. Asachi“, Iasi, Romania

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On Board Independent Vehicles Trajectory Following System

E. Golgotiu, R. Drosescu

Technical University, Gh. Asachi", Iasi, Romania

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Quasiperiodic Response of Coupled Linear and Nonlinear Oscillators Under Periodic Forcing

O.V. Gendelman, Y. Starosvetsky

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology

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Transcendental Ratio Gearing

Y. Surpin

"Scientists of the South" Association

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Behavior of Angle- and Cross-Ply Woven Laminates Under Low-Energy Impact

J. Kreiner¹, J. Slenk², A. Mosallam³

¹*California State University, Fullerton, California, USA*

²*The Boeing Company, Huntington Beach, California, USA*

³*University of California at Irvine, California, USA*

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An In-Depth Reliability Study of ETA (External Tank Attach) Ring

F. Pizzano¹, C.S. Putcha², J. Kreiner³, J. Overstreet⁴, A. Sivathanan²

¹*United Space Alliance, Huntsville, Alabama, USA*

²*Department of Civil /Environmental Engineering, California State University, Fullerton, CA, USA*

³*Department of Mechanical Engineering, California State University, Fullerton, CA, USA*

⁴*United Space Alliance, Cape Canaveral, FL, USA*

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Numerical and Experimental Investigation of Micro-Channels Heat Sinks for Cooling Electronic Devices

Y. Mishan, G. Hetsroni

Faculty of Mechanical Engineering, Technion-Israel Institute of Technology
