



Volume 10, No. 1-2 , 2008

## CONTENTS

### No.1

#### Material Engineering

**V.Volkov, A.Zelenetsky, V.Shevchenko A.Ponomarenko, M.D.Sizova, N.Artemyeva, O.Figovsky,**

Mutiplfunctional Polymer Composites: Shielding Materials with Low Flammability

**A.Fainleib, I.Danilenko, J.M. Saiter, B.Youssel, M.B.Garda, J.Grenet,**

Novel in Situ Sequential Interpenetrating Polymer Networks from Oligourethanemethacrylate and Dicyanate Ester of Bisphenol A Synthesized by Combined Photo/Thermal Curing

**E.Gotlib,**

Water Dispersion of Polymer Materials and Latexes Plasticized by EDOS

**N.Blank, E. Gotlib,**

Epoxy-Rubber Coatings with Nano-Heterogenic Structure

**M.Ioelovich, O.Figovsky,**

Nano-Cellulose as Promising Biocarrier

**M.Ioelovich, A. Leykin,**

Structural Investigations of Cotton Fibers of Various Types

**E.Barsky,**

Mathematical Model of Complied Cascade Classifiers

**E.Barsky,**

Medium Motion Regimes and Universal Curves of Gravitational Separation Process



**L.Korshunov, V.Zeldovich, A.Kheifets, L.Khomskaya, N.Chernenko, N.Frolova, S.Usherenko,**  
Superdeep Penetration of the Microparticles Accelerated by Explosion in Metals and alloys of Iron

**Yu. Usherenko,**  
New Structural Elements Arising in Aluminum and its Alloys at Superdeep Penetration of Doped Material

**J.Owsik, V.Sobolev,**  
Possible Reasons of Degradation of Elements of Space Vehicle Control Systems

**A.Zaruev, V. Volodashik.**  
Marketing Aspects of the Possible Applications of the Nano-Based Diamond-Like Non-crystalline Boron Carbide (DLCBC) Product

**D.Beilin, V.Lerner,**  
Investigation of Physical-Mechanical Characteristics of Rubber-Fabric Materials by Ultrasound Method

**O.Michailov, K.Zaidman**  
Power Transmission Line Sag Monitoring by Means of Inclinometers

## No.2 Material Science: Reviews

**G.Muravin, B.Muravin, L.Mizrahi, L.Lezvinsky,**  
The Possibility of Revealing and Assessment Age Related Degradation and Industrial Flaws in High Chromium Steels Piping and Equipment by Quantitative Acoustic Emission Non-Destructive Method

**A.Ponomarenko, V.Shevchenko, O.Figovsky,**  
Multifunctional Polymer Composites for "Intellectual" Structures: Present State, Problem, Future

**O.Figovsky, D.Beilin, M.Blank,**  
Advanced Material Nanotechnology in Israel

## Letters to the Editorial Boarding

**Yu. Magarshak,**  
Superresonant Atom Model as an Element of the Unified Theory of Matter

**G.Kovtun, T.Kameneva, V.Belenkov, A.Golichenko, A.Shtemenko,**  
The Catalysis of the Breaking Chains of Oxidation Benzyl Alcohol by Bi-Nuclear Clusters  $cis-[Re_2(O_2CCH_3)_2Cl_4 \cdot 2H_2O]$



**A. Zaruev, V. Volodashik, O. Figovsky,**

The Chemical and Physical Aspects of a Production Process of the New Advanced Nano-Based Super Abrasive Diamond-Like B<sub>4</sub>C Material