



MATERIALE PLASTICE

Plastic Materials
Elastomers
Synthetic Yarns and Fibers
Composite Materials
Synthesis, Characterization, Engineering
Applications in Medicine
Dental Medicine and Pharmacy

SEPTEMBER 2022

Print ISSN: 0025 - 5289/ Online ISSN: 2668 - 8220

<https://revmaterialeplastice.ro>
<https://doi.org/10.37358/Mat.Plast.1964>



**REVISTA DE
CHIMIE SRL**

EDITORIAL BOARD

Editor-in-Chief

Horia IOVU

University Politehnica of Bucharest, ROMANIA

Deputy Editor-in-chief

Anton HADAR

University Politehnica of Bucharest, ROMANIA

Deputy Editor-in-chief

Kamel EARAR

Dunarea de Jos University of Galati, ROMANIA

MEMBERS

Marc J. ABADIE

University of Montpellier, FRANCE

Robert ADAMS

Bristol University, UK

Iulian BIRSAN

University Dunarea de Jos of Galati, ROMANIA

Ilare BORDEASU

Politehnica University of Timisoara, ROMANIA

Igor CATIC

University of Zagreb, CROATIA

Alberto D'AMORE

University of Naples - SUN, Aversa, ITALY

Catalin FETECAU

University Dunarea de Jos of Galati, ROMANIA

Baki HAZER

Kapadokya University, TURKEY

Zonguldak Bülent Ecevit University, TURKEY

Cosmin JINESCU

University Politehnica of Bucharest, ROMANIA

Piotr KURCOK

Centre of Polymer and Carbon Materials Polish Academy of Sciences, POLAND

Gad MAROM

The Hebrew University of Jerusalem, ISRAEL

Walter MICHAELI

Institut für Kunststoffverarbeitung Aachen, GERMANY

George PAPANICOLAOU
University of Patras, GREECE

Carmen RACLES
Petru Poni Institute of Macromolecular Chemistry, Iasi, ROMANIA

Loredana SANTO
University Tor Vergata, Roma, ITALY

Andrei SARBU
INCDCP-ICECHIM Bucuresti, ROMANIA

Ion SERES
S.C. PLASTOR S.A., Oradea, ROMANIA

Bogdan C. SIMIONESCU
Macromolecular Chemistry Institute P. Poni, Iasi, ROMANIA

Norbert STRIBECK
University of Hamburg, GERMANY

Mircea Sava TEODORESCU
University Politehnica of Bucharest, ROMANIA

Dumitru Mircea VULUGA
Organic Chemistry Center C.D. Nenitescu, Bucharest, ROMANIA

General Manager
Ion ANDRONACHE
Revista de Chimie SRL

Publisher Chief
Gabriel-Lucian RADU
University Politehnica of Bucharest, ROMANIA

Manager
Alice CRISTEA
Revista de Chimie SRL

Impact factor 2021: 0.782

CONTENTS
3 / 2022

ALEXANDRU BOLCU, MARIUS MARINEL STANESCU, DUMITRU BOLCU, ION CIUCA, MIHAELA BOGDAN, ALIN DINITA, NICOLAE SARBU Study of the Vibrations of Some Composite Bars with Polypropylene Honeycomb Core and Carbon Fiber and Fiberglass Fabric Faces.....	1
FLAVIUS BUCUR, ANA SOCALICI, ADINA BUDIUL BERGHIAN, CORNELIU BIRTOK BANEASA, LIVIU PASCU The Tribology of Composite Materials Used for Manufacturing Brake Shoes	13
IOANA DANIELA MANU Internal Pressure Test on HDPE Pipe Ring.....	21
MOHAMED HECHMI EL OUNI, ALI RAZA, MUHAMMAD ARSHAD Theoretical Prediction of Two-Peak Behavior of GFRP-Reinforced Concrete Compressive Members.....	31
MATEUSZ BARCZEWSKI, ALEKSANDER HEJNA, PAULINA KOSMELA, OLGA MYSIUKIEWICZ, ADAM PIASECKI, KAMILA SAŁASIŃSKA High-density Polyethylene - Expanded Perlite Composites: Structural Oriented Analysis of Mechanical and Thermomechanical Properties.....	52
SHENGXING ZHAO Antitumor Effect and Pharmacological Mechanism of Paclitaxel-loaded Silk Fibroin Nanomaterials on H22 Subcutaneous Tumor Model of Mouse Hepatoma.....	64
CONSTANTIN - ROMICA STOICA, RALUCA MAIER, ANCA - MIHAELA ISTRATE, SEBASTIAN - GABRIEL BUCACTIUC, ALEXANDRA DESPA Impact Behavior Analysis of 3-D Printed Honeycomb Structures	78
ANTYPAS IMAD REZAKALLA, DYACHENKO ALEXEY GENNADYEVECH Effect of Certain Hydrocarbon Compounds on High-density Polyethylene Water Pipe.....	91
VIJAYASANKAR VINAYAK ARUN SANKAR, PARAMASIVAM SURESH Asbestos-Free Brake Lining Material Using Sea Shell	100
MOHAMMED RAFFIC N., GANESH BABU K., RAJASEKARAN SAMINATHAN, HAITHAM HADIDI Flexural Modulus Enhancement and Minimization of Printing Time and Part Weight for PET-G, Using Taguchi-GRA-TOPSIS Techniques.....	109
MIN JI YOO, SEONG YEOL HAN Optimal Deformation of a Small Plastic Light-guide Using Machine Learning Algorithms.....	128
ROBERT TINCU, ANDREI SLABU, CRISTINA STAVARACHE, MONICA-MIRELA DULDNER, EMERIC BARTHA, FLORINA TEODORESCU Metal-containing Ionic Liquids as Catalyst in PET Glycolysis.....	143
VIGNESHWARAN KARUPAIAH, VENKATESHWARAN NARAYANAN Quasi Static and Dynamic Mechanical Analysis of 3D Printed ABS and Carbon Fiber Reinforced ABS Composites.....	152
PRASHANTH MURTHY, SANJAY GANDHI BOJAN, SENTHILKUMAR KRISHNASAMY Mechanical Character Analysis of Pineapple Fibre Epoxy Composite with Nanoclay Quantity Variation.....	180

XUELIANG JIANG, QIANG FU, DAN WU, GUIJIANG TANG, FENG YOU, CHU YAO Design of Melamine Foam/perforated Plates Composite Absorber for Effective Sound Absorption Performance.....	189
DARSHAN GOWDA, RAVISHANKAR BHAT, SANGAMESH RAJOLE An Optimization Study on Material Selection for FRPCs in Multi Layered Armour System Through Hybrid MCDM Approach and Numerical Simulation.....	205
HONG-XIA XIA, YAN-HUA CAI, JUN WANG, HAO HUANG, LI-SHA ZHAO The Application of <i>N, N'</i> -bis(Isonicotinic Acid) 1, 4-Naphthalenedicarboxylic Acid Dihydrazide in Biodegradable Poly(L-lactide): Crystalline Nucleation, Melting Behavior, Thermal Stability and Mechanical Properties.....	232
MIRCEA DORIN VASILESCU Preliminary Technological and Environmental Considerations for Generating Mechanical Components using Plant-based UV Resin	245
BEATRIZ ADRIANA SALAZAR-CRUZ, CLAUDIA MARÍA DE LEÓN-ALMAZÁN, CLAUDIA ESMERALDA RAMOS-GALVÁN, JORGE ESTRADA-MARTÍNEZ, JOSÉ LUIS RIVERA-ARMENTA Evaluation of Thermal and Thermo-mechanic Properties of Composites Based on Styrene-butadiene Copolymer (SBS)-seed Shell Particles.....	258