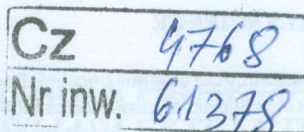


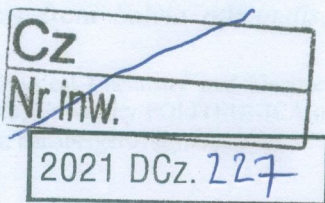


CONTENTS



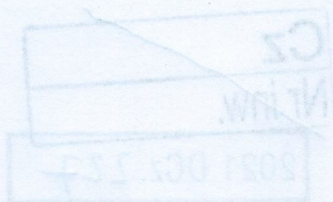
CHEMISTRY

- Mioara Prundeanu, Ana-Maria Brezoiu, Mihaela Deaconu, Daniela Berger
Chemical profiling of polyphenols from *Salvia officinalis* and *Thymus serpyllum* extracts during a three-stage extraction process 3
- Ioana-Alina Ciobotaru, Florin-Mihai Benga, Dănuț-Ionel Văireanu
Reconditioning of Li-ion rechargeable batteries, a possible solution for batteries circular economy 17
- Botond Turóczi, Károly-Attila Szabó, Szabolcs Lányi, Imre-István Nyárádi, János Bálint
New perspectives of using populin as plant extract against late blight (*Phytophthora infestans* Montagne) resistant strain 23
- Maria Roxana Marinescu, Bogdan Cătălin Șerban, Cornel Cobianu, Niculae Dumbrăvescu, Octavian Ionescu, Octavian Buiu, Liviu Daniel Ghiculescu
Mechanical properties of carbon-based nanocomposites for sensors used in biomedical applications 31
- Claudia Ninciuleanu, Raluca Ianchis, Elvira Alexandrescu, Catalin Mihaescu, Bogdan Trica, Cristina Scomosroscenco, Cristina Nistor, Cristian Petcu, Silviu Preda, Mircea Teodorescu
Nanocomposite hydrogels based on poly(methacrylic acid) and Laponite XLG 43
- Andreea D. Dima, Oana C. Pârvulescu, Carmen Mateescu, Eduard M. Lungulescu
Influence of gamma-ray irradiation on the biomethane production of sunflower seed cake 59
- Livia Elena Chilug, Radu-Anton Leonte, Maria Daniela Ciucă, Vasile Lavric
Gold nanoparticles-based radiopharmaceuticals for nuclear molecular imaging and therapy applications 73
- Rodica Tatia, Agnes Toma, Lucia Moldovan, Christina Zalaru, Ioan Calinescu
Phytochemical and antiproliferative potential of *Hedera helix* extract fractions 91
- Georgica Pandealea (Voicu), Mirela Florina Calinescu, Ivona Cristina Enescu (Mazilu), Daniela-Simina Stefan
The influence of some composts on the growth and fruiting processes in the species *Aronia melanocarpa* (Michx.) Elliot 101
- Anamaria Vartolomei, Ioan Calinescu, Adina Ionuta Gavrila, Mircea Vinatoru
Ultrasound assisted synthesis of isoamyl acetate catalysed by acidic ion exchange resin 113
- Roxana-Elena Scutariu, Gheorghe Batrinescu, Gheorghe Nechifor, Ioana-Alexandra Ionescu, Nicolae-Ionuț Cristea
Fabrication of Psf and Ac-Cel ultrafiltration membranes using phase inversion method 125
- János Szövérfi, Csongor Kálmán Orbán, Beáta Albert, Katalin Nagy, Pál Salamon, Szabolcs Lányi
In vitro study of the CCMV capsid protein: cloning, expression, and purification 135
- Paul O. Stănescu, Raed Nachawati, Anil Abduraman, Mircea Teodorescu
The effect of some additives on the thermal response of Pluronic® L61 poly(ethylene glycol) triblock copolymer in aqueous solution 143



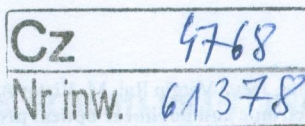
MATERIALS SCIENCE

Nicolae Constantin, Ana Virginia Socalici, Radu Buzduga, Alina Cristina Mihaiu, Cristian Dobrescu, Octavian Nicolae Stanasila, Elisa-Florina Plopeanu, Elena Madalina Vlad Experimental research on a semi-industrial pilot scale for obtaining carbofer pellets in rotary tubular furnace	155
Laura Elena Geambazu, Robert Ciocoiu, Florin Miculescu, Ioana Csaki Coatings of CoxCrFeMoNi high entropy alloy produced by electro spark deposition technique	165
A. Cristina Costache, Gabriel Moagăr-Poladian, Cosmin A. Obreja, Oana Tutunaru, Antonio Rădoi, Cristina Pachiu Chemical and physical study of waste PA2200 powder	175
Oana Lupu, Marius Ardelean, Ana Socalici, Erika Ardelean Research regarding the capitalization of the waste resulted from the steel industry	187
Akeel Dhahir Subhi, Ahmed Mousa Marheb Effect of titanium on the microstructure, hardness, and wear behavior of hypoeutectic Al-4%Ni alloy	197
Victor Andrei, Constantin Domenic Stancel, Elisa Florina Plopeanu, Lucian Rosu, Cristian Pandelescu Experimental research regarding decreasing of fabrication costs of metallurgical coke by using non-coking coals and recycling of small coal	209
Emanuel-Laurențiu Niculescu, Mihai Buzatu, Mircea-Ionuț Petrescu, Mihai Buțu, Gheorghe Iacob, Florentina Niculescu, Bogdan Florea, Dragoș-Florin Marcu, Constantin-Dominic Stăncel, Mariana-Mirela Stănescu Thermodynamic calculation of the binary systems Bi-Sn by implementing a Java interface	219
Maria-Minodora Marin, Madalina Georgiana Albu Kaya, Roxana Constantinescu, Ciprian Chelaru, Jana Ghitman, Horia Iovu Extraction and studies on the properties of type II collagen as potential biomaterial in cartilage repair	229
Maria Muscalu, Valeriu-Gabriel Ghica, Gheorghe Iacob, Mircea-Ionuț Petrescu, Mihai Buzatu Studies and research on waste MoSi₂ heating elements	239
Claudia Ionela Tarcea, Daniela Ioana Stefan, Andreea Turcanu, Ecaterina Matei, Andra Predescu, George Coman, Cristian Predescu Assessment of soil quality through physical and chemical analyses	249
Anișoara Corăbieru, Ștefan Velicu, Petrică Corăbieru, Mirela Gabriela Sohaciu, Ioana Arina Gherghescu Research on parts surfaces chemical composition changes in liquid and solid state	255





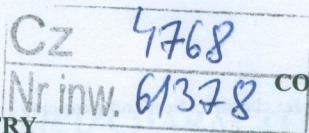
CONTENTS



CHEMISTRY

- Filis Curti, Diana-Maria Drăgușin, Andrada Serafim, Anca Sorescu, Izabela-Cristina Stancu, Horia Iovu, Rodica Marinescu
Cuttlefish bone-based ink for 3D printing of scaffolds for orthopedic applications 3
- Veronica Anastasoae, Elena Diacu, Eleonora-Mihaela Ungureanu, Magdalena Rodica Bujduveanu, Liviu Birzan, Mihaela Cristea
New chemically modified electrodes based on crown ether-azulenes for heavy metal analysis 15
- Teodora Manasia, Ancuța-Fulvia Manolache, Valentin Ionescu, Mihaela Muțescu, Mihai Eftimie, Cristina Todașcă
Evolution of phenolic compounds during the red grapes fermentation in the presence of trace metals 27
- Ioana Asofiei, Ioan Calinescu, Vasile Staicu, Diana-Ioana Buliga, Adina Ionuta Gavrila
A strategy for enhancing the extraction yield of polyphenols from sea buckthorn leaves 37
- Alef Ibram, Ana Maria Ionescu
Rheological behaviour of some bio-composites based on marine chitosan and ketoconazole 45
- Daniela Ghimpețeanu, Vasile Lavric, Ioan Călinescu, Mircea Vinatoru, Mariana Pătrașcu
Efficiency of microwave applicators: rezonant, multimode and monomode 55
- Victoria Artem, Ticuta Negreanu-Pirjol, Aurora Ranca, Cristina Ciobanu, Anil Abduraman, Viorica Coroiu, Bogdan-Stefan Negreanu-Pirjol
Experimental studies on the residual marine and viticultural bioresources valorization for new organic fertilizers 65
- Pál Salamon, Csongor Kálmán Orbán, Ildikó Miklóssy, Beáta Albert, Szabolcs Lányi
Comparative study on conventional and auto-induction fermentation 77
- Claudia Ana Maria Patrichi, Tănase Dobre, Oana Cristina Pârvulescu
Modelling of acetone-butanol-ethanol batch biosynthesis 83
- Marius-George Pârvan, Andrei-Vlad Zanfîr, Adrian-Ionuț Nicoară, Georgeta Voicu
Influence of different synthesis routes on barium titanate powder characteristics 95
- Alexandru Vlaicu, Ioan Calinescu, Constantin Posea, Petre Chipurici
A study on methyl and ethyl esters production - from seed preparation to product purification 105
- Mihaela Ioniță, Adrian Crișciu, Radu C. Racoviță, Sergiu Sima, Catinca Secuianu
Phase diagram predictions for carbon dioxide + different classes of organic substances at high pressures 117
- George Mihail Vlasceanu, Mariana Ionita, Horia Iovu
Physico-chemical enhancements of natural biopolymer matrices by reinforcing with complex carbonaceous-oxidic fillers 133
- Laura Eugenia Barbulescu
Nanostructured TiO₂/Ti based electrodes obtained from titanium scrap 147
- Iasmina-Florina Burlacu, György Deák, Lidia Favier, Ingrid Prorior Serre, David Balloy
Advanced catalytic materials obtained from waste for wastewater treatment applications 161

D. S. Jayalakshmi, Jeeva Vergin Raj, M. Victor Antony Raj, V. Mohankumar, D. Hemanand Structural, electronic and nonlinear optical properties of fluorophenol and nitrophenol molecules in effect of ortho, para and meta position	167
Ping Ouyang, Xianming Zhang The regeneration treatment of WLO by means of fly-ash adsorption	177
MATERIALS SCIENCE	
Laura G. Ionescu, Constantin Tanase, Marius Vasilescu, Raluca Zamfir, Brândușa Ghiban Research related to retained austenite on rail and windmill bearings	191
Ciprian Alexandru Manea, Robert Ciocoiu, Dan Gheorghe, Adrian Bibiș, Radu Ștefănoiu, Ioana Csaki Electro spark deposition of HfNbTaTiZr high entropy alloy processed in solid state and experimental adhesive testing	201
M. Buțu, C. Ogica, D.F. Marcu, C.D. Stăncel, F. Niculescu, V.D. Drăguț Obtaining of AA6063/VB₂ composites produced by aluminothermic reaction	209
Vasile Avram, Augustin Semenescu Misch metal micro-alloying effect on mechanical properties of Babbitt alloys	221
Mohammed Hayder Alluaibi, Saleh Sabah Alturaihi, Adrian Rusea, Elisabeta Mirela Cojocaru The response of microstructure and mechanical properties of Ti-6246 alloy to thermomechanical processing	231
Mihaela Raluca Condruz, Gheorghe Matache, Alexandru Paraschiv, Teodor Adrian Badea, Tiberius Florian Frigioescu, Cornel Todea Assessment of volumetric energy density influence on microstructure, density and roughness of selective laser melting manufactured IN 625	243
Saïfi Amirouche, Boudjema Bezzazi, Mustapha Nechiche, Said Azem Mechanical alloying of the Fe-Cr mixture and stabilization of the sintered nanostructure by carbon addition	259
László Tóth, Tünde Anna Kovács, Zoltán Nyikes, Valeriu-Gabriel Ghica Increasing the H13 tool steel wear resistance by plasma nitriding and multilayer PVD coating	273
D.A. Neculescu, I. Antoniac, C. Milea, M. Ciurdas Structural analysis and corrosion resistance of dental brackets	283
Alina Cristina Popescu-Argeș, Maria Mihaly, Ion Pencea, Ramona-Nicoleta Turcu, Mihai Brânzei, Mihai Ovidiu Cojocaru, Andrei Constantin Berbecaru, Tudor Adrian Coman, Adina Roxana Milășan, Cristian Predescu Complex characterization of the metallurgical solid wastes for aluminothermic 4R approach	291
Dragos Alexandrescu, Marius Vasilescu, Catalin Sfat, Diana Tabaras, Daniela Gheorghita, Iulian Antoniac, Robert Ciocoiu A study on 3D printed component's surface made of PLA with silver particles	303
Bogdan Florea, Dragos Florin Marcu, Augustin Semenescu, Adrian Ioana, Mihai Butu, Florentina Niculescu, Gheorghe Iacob, Roxana Solea The SCADA in the cloud concept for optimizing the management of heat treatment processes	313



CONTENTS

CHEMISTRY

Alina-Alexandra Vasile (Corbei), Amalia Stefaniu, Lucia Pintilie, Gabriela Stanciu, Eleonora-Mihaela Ungureanu

***In silico* characterization and preliminary anticancer assessment of some 1,3,4-thiadiazoles** 3

Alexa-Maria Croitoru, Ovidiu Oprea, Bianca-Maria Tihauan, Adrian Ionut Nicoara, Roxana Trusca, Anton Fica

Galic acid loaded graphene oxide material as an effective antibacterial nanocarrier 13

Cristian Eugen Răducanu, Oana Cristina Pârvulescu, Tănase Dobre

Modelling of biodiesel synthesis with and without glycerol removal from reaction mixture 25

Miruna Neagu, Cristina Luntraru, Adriana Bîra (Popescu), Justinian Tomescu, Natalița Ionescu (Bordei), Raluca Stan

Bioactive phenolic compounds from white willow (*Salix Alba*) bark, leaves and branches 41

Andra Bucșe, Oana Cristina Pârvulescu, Dan Vasiliu, Mihaela Mureșan, Cezara Voica

Levels of heavy metal concentration in *M. Galloprovincialis* mollusc species from NW Black Sea (Romania) 45

Victoria Artem, Ticuta Negreanu-Pirjol, Aurora Ranca, Cristina Ciobanu, Mihaela Mirela Bratu, Dan Razvan Popoviciu, Lucia Moldovan, Monica Vasile, Bogdan-Stefan Negreanu-Pirjol

Total phenolic content correlated with antioxidant activity of some grape pomace biomass hydroalcoholic extracts, white and red varieties 61

Gabriela Toader, Traian Rotariu, Daniela Pulpea, Andreea Moldovan, Alice Podaru, Ana Mihaela Gavrila, Mioara Alexandru, Aurel Diacon, Raluca Ginghina, Ovidiu Iorga, Ciprian Sau

Polymeric blends designed for surface decontamination 73

Florin-Marian Dîrloman, Traian Rotariu, Tudor-Viorel Țigănescu, Gabriela Toader, Teodora Zecheru, Tanța-Verona Iordache

Phase stabilized ammonium nitrate for future green rocket propellants 87

Oanamari Daniela Orbuț, Claudia Borda, Delia Garleanu, Gabriel Garleanu, Alexandra Stancu, Cristina Modrojan

Fe₃O₄ particles functionalized with EDTA and PVA - preparation, characterization and their use in removal of manganese ions from synthetic aqueous solutions 101

Manel Hannachi, Mustapha Nechiche, Said Azem

Development of biodegradable composite materials based on polylactic-acid (PLA) and olive kernels/Alfa fibers reinforcements 117

Cristina-Elisabeta Pelin, George Pelin, Sorina Ilina, Alina Dragomirescu, George Cristea, Adriana Stefan

Properties of ablative composites based on bismaleimide resin reinforced with graphite felt 127

Andreea Elena Musteata, Horia Petrescu, Alina Cantaragiu Cioromila, George-Ghiocel Ojoc, Lorena Deleanu

Influence of composition on energy at break of blends PP + PA6 141

Achraf Guellaf, Lhoucine Benhassane, Kawtar Kettani

Physico-chemical, bacteriological and heavy metals assessment of surface waters in Martil Basin (North-Western Morocco) 159

Carla-Cezarina Pădurețu, Raluca Daniela Isopescu, Ileana Rău Multivariate analysis of chitin and chitosan from marine waste: classification and property estimation using infrared spectra	171
Natalița Ionescu (Bordei), Andreea-Miruna Neagu, Mariana Popescu Preparation and characterization of vegetable oils and plant extracts with effect in the treatment of varicose veins	185
Gabriela Georgiana Ciungulete, Ileana Rau, Ion Iosub, Elisabeta-Irina Geana, Violeta Niculescu Grape ivy (<i>Parthenocissus tricuspidata</i>) extracts with bioactive compounds	193
Qingshan Li, Shumin Fan, Xiu Qiao, Dawei Duan, Wenxiu Fan, Helikh Ao Research on edible superhydrophobic coatings for food packaging material	203
Ana-Mihaela Gavrilă, Simona Nedelcu-Flor, Andrei Sârbu, Teodor Sandu, Andreea Gabriela Olaru, Gheorghe Hubca, Dan Donescu, Tanța-Verona Iordache Synthesis and properties of organosilica particles with quaternary ammonium bearings as bacteriostatic interfaces	215
MATERIALS SCIENCE	
Cătălin Ștefan Grădinaru, George Coman, Sorin Ciucă, Mirela Gabriela Sohaciu, Andrei Constantin Berbecaru, Andrei Grecu, Ruxandra Elena Dumitrescu, Ioana Arina Gherghescu, Cristian Predescu Research on corrosion degradation process of some thermal power plants steam boiler pipes	231
V. Coman, G. Deak, E. Matei, A.M. Predescu, M. Râpă, A. Berbecaru, C. Predescu A way to reduce the emerging pollutants impact on environment using nano-TiO₂ as photocatalyst	245
Balram Yelamasetti, G. Rajyalakshmi, K. Sravan Kumar Mechanical and microstructural studies of optimized Taguchi grey relational analysis of PCGTAW process parameters for joining Monel 400 and AISI 316	253
Robert Viorel Bololoi, Mirela Sohaciu, Viorel Sebastian Șerban-Tănase, Florin Miculescu, Ioana Csaki AlCrFeNiTi high entropy alloy produced by solid state processing	265
Saleh Sabah Alturaihi, Nicolae Serban, Ion Cinca, Mariana Lucia Angelescu, Irina Varvara Balkan influence of solution treatment temperature on microstructural and mechanical properties of hot rolled UNS S32760 / F55 super duplex stainless steel (SDSS)	275
Mihai Negroi, Andreea A. Țurcanu, Ecaterina Matei, Maria Râpă, Andra M. Predescu, Cristian Pantilimon, George Coman, Cristina I. Covaliu, Cristian Predescu Comparison study of metal removal efficiency for commercial activated carbon and biochar obtained from banana peels	285
Oana Stoian, Cristina Ileana Covaliu, Gigel Paraschiv Removal of copper ions from wastewater by adsorption using magnetite nanomaterial	293

CONTENTS

CHEMISTRY

- Andreea-Cristina Ion, Ionut-Cristian Radu, Eugeniu Vasile, Elena Iuliana Biru, Ariana Hudita, Bianca Galateanu, Horia Iovu, Catalin Zaharia
Development of PEGylated silk fibroin nanoparticles for drug delivery systems 3
- Daniela-Valentina Besliu, Aurelia Meghea
Optimization of green synthesis of silver nanoparticles by using *Harpagophytum procumbens* root extract 19
- Andreea Irina Nita, Daniela Catana, Alexandra Vasile, Adina Roxana Milasan, Marius Florin Dragoescu, Adriana Mariana Bors, Maria Mihaly
Key parameters to monitor the used metalworking fluids 29
- Simona Cotorcea (Țicu), Ioana Alina Dimulescu, Dumitru Pașcu, Cristina Bărdacă, Gheorghe Nechifor, Andreia Pîrțac
Membranes based on cellulose acetate recovered from cinematographic films for protein retention 43
- Dan Răzvan Popoviciu, Ticuța Negreanu-Pîrjol, Diana-Angela Pădure, Bogdan-Ștefan Negreanu-Pîrjol, Monica Vasile
Assessing the aluminium phytoaccumulation potential of *Carolina Fanworth* species (*Cabomba caroliniana* A. Gray) in experimental stress conditions 55
- Elena Madalina Mihai, Anca-Ionela Istrate, Octavian Gabriel Simionescu, Cristina Banciu, Cosmin Romanitan, Florin Comanescu, Alexandra Banu, L. Monica Veca
Synthesis of TiO₂/GF-Ni hybrid materials by a combined chemical vapor deposition/RF magnetron sputtering approach 65
- Tudor-Viorel Țigănescu, Raluca-Elena Ginghină, Nicoleta Grigoriu, Andrada Pretorian, Răzvan Petre, Adriana Bratu, Oana Hoza
Decontamination efficiency of nerve agent soman (GD) with a new amino-alcoholic solution 75
- Alina Tătăruș, Claudia Maria Simionescu, Gheorghe Nechifor, Roxana Scutariu, Vasile Ion Iancu, Laura Florentina Chiriac
Development of a new high-performance liquid chromatography method with diode array detector (HPLC-DAD) for the detection of Congo Red and Methyl Orange dyes from synthetic water solutions 85
- Nicoleta Vasilache, Elena Diacu, Cristina Modrogan, Irina Lucaciu, Gabriela Vasile, Iuliana Claudia Paun, Vasile Iancu
Forecasting methods for assessment of the biodegradability of wastewater from organic separators 95
- Parnian Govahi, Pezhman Alimohammadi, Reza Ahmadi
The effect of cooper oxide nanoparticles addition on the friction coefficient of calcium-based grease 109
- Patricia Elena Maria Lungu, Mariana Prodana
Outdoor particle matter investigation before and during Covid-19 pandemic 121
- Alexandra-Andreea Dobrin, Carolina Constantin, Gheorghe Nechifor
Water quality monitoring from *Avicola Slobozia S.A.* 131
- Sorin Sebastian Gheorghe, Ruxandra-Maria Ilie-Mihai, Raluca-Ioana Stefan-Van Staden
Determination of dopamine in whole blood samples using a new electrochemical sensor based on graphene 145

Traian-Florian Ionescu, George-Cătălin Cristea, Dionis Guglea, Dumitru Dima, Constantin Georgescu, Lorena Deleanu	
Wear-load curves in severe regime for rapeseed oil additivated with ZnO	151
Raluca Elena Ginghină, Claudiu Lăzăroaie, Iulian Vasile Antoniac, Otilia Cinteza, Tudor Viorel Tigănescu, Diana Popescu, Cătălin Aliuş, Anda Băicuş	
Silver and gold nanoparticles and quaternary ammonium salts for the disinfection of SARS-CoV-2	163
Delia-Micaela Dumitru, Adrian Alexandru Badea, Constantin Streche, Cristina Feodorov, Diana Mariana Cocârţă	
Application of the electrochemical treatment method for the remediation of hydrocarbon-contaminated soils	173
Jasim H. Hassen, Jack Silver	
Firing-activated interaction of montmorillonite with tin(IV) and copper(II) phthalocyanine dyes	185
Rebeca Leu Alexa, Horia Iovu, Madalina Cristina Nicolae, Ionut Catalin Mihaescu, Elvira Alexandrescu, Raluca Ianchis	
3D printing of super concentrated alginate clay ink with potential application in regenerative medicine	197
MATERIALS SCIENCE	
Avram Nicolae, Mirela Gabriela Sohaciu, Ioana Csáki, Sorin Ciucă, Maria Nicolae	
Specific knowledge regarding the sustainable and durable development of ecotechnological complexes	209
Avram Nicolae, Roxana Mariana Duma, Cătălin Ştefan Gradinaru, Andrei Grecu, Roxana Dumitrescu, Sorin Ciucă, Maria Nicolae	
New scientific branches of the sustainable-durable development in the metallic materials engineering	223
Mihai Branzei, Mihai Ovidiu Cojocaru, Maria Mihaly, Robert-Sevastian Niculescu, Tudor Andrei Coman, Ramona Nicoleta Turcu, Alina-Cristina Popescu-Argeş, Ion Pencea	
A new approach for heat yield measurement of the aluminothermic tests carried on iron bearing powdered wastes	229
Adina Budiul Berghian, Oana Lupu, Ana Socalici, Comeliu Birtok Baneasa	
Harnessing the ferrous sludge resulting from steel industry in the context of the circular economy	241
Cristina Gheorghe, Gabriela Petre, Octavian Trante, Claudia Georgiana Milea, Brânduşa Ghiban	
Corrosion behaviour of Zamak components in a hearing aid	251
Mihai-Ionuţ Ungureanu, Liviu-Cristian Matache, Traian Rotariu, Cristian Barbu, Florin-Marian Dîrloman	
High blast explosive composition for annular thermobaric ammunitions	263
Yana Smirnova, Iryna Huriia, Petro Loboda	
Liquid phase fabrication technology of layered Ti/Al composite	273
Alina-Cristina Popescu-Argeş, Ramona-Nicoleta Turcu, Constantin Ungureanu, Adrian Priceputu, Ion Pencea, Florentina Niculescu, Andrei-Lucian Timiş	
Validation of the LOI results obtained on particulate waste through marginal recovery and XRF methods	283
Daniela Ştefan, Ecaterina Matei, Andreea A. Ţurcanu, Andra M. Predescu, George Coman, Maria Râpă, Cristian Predescu	
The use of digestate in green agriculture	295
Vasile Avram, Augustin Semenescu, Ioana Csáki	
Y-PbSn10 antifriction alloys microalloyed with mischmetal	307