

POLY CHAR 27

World Forum on Advanced Materials
October 14-17, Naples



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Dipartimento
di Ingegneria Chimica,
dei Materiali e della
Produzione Industriale
Università degli Studi
di Napoli Federico II



Photo by: Cesare Abbate

OCTOBER 14, 2019 - MONDAY COURSE

9:30 - 10:10

W. Brostow
Viscoelastic behaviour of polymers

10:10 - 10:50

V. Castano
Polymers, biopolymers and advanced nanocomposites for additive manufacturing

10:50-11:30 Coffee break

11:30 - 12:10

P. Musto
recent advances in vibrational spectroscopy and their applications to polymer science

12:10 - 12:50

D. Berek
Liquid chromatography of synthetic polymers

12:50-14:30 Lunch

14:30 - 15:10

D. W. Schubert
Polymer blends and interfaces

15:10 - 15:50

M. Malinconico
Bioplastics: opportunities and challenges

15:50-16:30 Coffee break

16:30 - 17:10

M. Matsuo
Understandable approach about electric and dielectric properties of conductive

17:10 - 17:50

T. Sterzynski
Macromolecular orientation in polymers



OCTOBER 15, 2019 - DAY 1

9:00 – 9:45

Welcome and registration

9:45 – 10:15

Opening of the Conference

10:15 – 11:00

Plenary 1

K. Matyjaszewski: Synthesis and characterization of tailored-made polymers via ATRP

11:00-11:30 Coffee break



SESSION 1 MODELING, PREDICTIVE AND ADVANCED CHARACTERIZATION METHODS

11:30 – 11:50

1.1.k

D. Schubert

Revealing novel power laws and quantization in electrospinning considering jet splitting – towards predicting fiber diameter and its distribution

11:50 – 12:10

1.2.k

E. Dargent

Molecular mobility in amorphous biobased poly(ethylene furanoate): the effect of positional isomerism

12:10 – 12:30

1.3.k

D. Berek

Separation and characterization of parent homopolymers in block copolymers with help of liquid chromatography

12:30 – 12:45

1.4.i

L. Myasnikova

The solid phase transitions in polymers, as revealed by different techniques

12:45 – 13:00

1.5

S. Hamzehlou

Modeling and characterization of the morphology development of structured composite polymer particles

14:30 – 14:50

1.6.k

H.D. Wagner

Extreme scale-dependent tensile properties of an epoxy resin

13:05-14:30 Lunch

14:50 – 15:10

1.6.k

M.C. Righetti

Time and temperature evolution of the constrained amorphous interphase in semi-crystalline polymers

15:10 – 15:30

1.8.k

T. Sterzynski

Investigation of deformation mechanism in mechanically coupled plastic-material hybrid structures

15:30 – 15:45

1.9

S. Zid

Numerical study of nanofiller size polydispersity and intercalation effects on nanocomposite barrier properties

15:45 – 16:00

1.10

J. Kaschta

Determination of interfacial tension in blends of ethylene-norbornene copolymers with polypropylene using Palierne's emulsion model

16:00 – 16:15

1.11

R. Pastore

Influence of wall heterogeneity on polymer nano-sandwiches: a multiscale analysis

16:45 – 17:05

1.12.k

W. Brostow

Brittleness, flexibility and dynamic friction of polymers

16:15-16:45 Coffee break

17:05 – 17:20

1.13

B. Nagendra

Guest stability in polymer films with different uniplanar orientations of nanoporous-crystalline phases

17:20 – 17:35

1.14

U. Ikoba

The effect of crystallization and glass transition temperature in thin poly(D,L-lactic acid) copolymer films

17:35 – 17:50

1.15

J. Tomaszewska

Glass transition in modified poly(vinyl chloride)

17:50 – 18:05

1.16

S. Patlazhan

Deformation behavior of single and composite droplets in the narrow channels

18:05–19:00 Poster session

SESSION 2

SMART AND FUNCTIONAL MATERIALS

11:30 – 11:50

2.1.k

L. Torre

Advanced composites and nanocomposites for high temperature aerospace applications

11:50 – 12:05

2.2.i

S. Coppola

Encasing temporary water silhouettes by quick liquid packaging: a new bottom up approach

12:05– 12:20

2.3.i

O. Mukbaniani

Fluorine containing solid polymer electrolyte membranes

12:20– 12:35

2.4

D. Pirone

Asymmetric azobenzene photo-switchers and their potentials

12:35– 12:50

2.5

T. Prefol

Development of PEG/PEBAX® films for functional applications

12:50– 13:05

2.6

J.V. Grazulevicius

Bipolar molecular glasses for organic light emitting diodes of the third generation

14:30– 14:50

2.7.k

P. Ferraro

Skillful manipulation of polymers based on pyroelectric effect for engineering new micro- and nano-structures

14:50– 15:10

2.8.k

H. Xia

Simultaneous realization of conductive segregation network microstructure and minimal surface porous macrostructures by SLS 3D printing

15:10 – 15:25

2.9.i

D. Martella

Photonic polymers for microrobotics

15:25 – 15:40

2.10

D. V. Pergushov

Interpolyelectrolyte complexes with tunable morphologies

15:40 – 15:55

2.11

A.V. Menon

Self-healable electromagnetic shielding material derived from co-doping graphene with MoS₂ and ferrites

15:55 – 16:10

2.12

G. Nasti

Effect of pyroelectrospinning on the deposition of PVDF-HFP/MWCNT composite fibers

16:45 – 17:00

16:15–16:45 Coffee break

2.13

M. Strasakova

Antimicrobial modification of polypropylene with natural bioactive compounds from Carum Carvi L.

17:00 – 17:15

2.14

P. Valkova

Biodegradable polylactide composites with improved thermal stability for food packaging

17:15 – 17:30

2.15

P. Rizzo

Nanoporous-crystalline phases in polymeric materials

17:30 – 17:45

2.16

M.C. Pastore Carbone

Mechanically strong, electrically conductive and light-weight CVD graphene nanolaminates for highly efficient EMI shielding

17:45 – 18:00

2.17

S. Guerra

Carbon based materials for elastomer nanocomposites

18:05–19:00 Poster session

9:00-9:45

Plenary 2: C. Wu

Universal scaling of phase diagram of polymer solution

SESSION 3

SYNTHESIS AND CHEMICAL MODIFICATION

9:45 - 10:05

3.1.k

G. Ricci

An overview of the latest developments in the stereospecific polymerization of 1,3-dienes

10:05 - 10:25

3.2.k

F. Samperi

Syntheses and MALDI-TOF MS characterization of tailored poly(4-vinyl pyridine) based copolymers

10:25 - 10:40

3.3

C. Russo

On the occurrence of fluorescent carbon in tarry carbon produced in fuel-rich flames

10:40 - 10:55

3.4

A. Scamporino

Synthesis and characterization of PES copolymers with carboxyl and sulfonic units

11:30 - 11:50

10:55-11:30 Coffee break

3.5.k

M. Bratychak

Functional oligomers based on epoxy resins

11:50 - 12:10

3.6.k

E. Espuche

Nanocomposites: going from ex situ or mixed synthesis routes to tune gas barrier properties

12:10 - 12:25

3.7.i

M. Sirignano

Insights of gas phase to particle transition of carbonaceous computation formed nanoparticles

12:25 - 12:40

3.8

E.Y. Kramarenko

Magnetoactive elastomers: from synthesis and composition to physical properties and practical applications

12:40 - 12:55

3.9

A. Aboudzadeh

Macrocyclic poly(ethylene glycol) with tailored pendant thiol group: a potential shell for gold nanoparticles

13:00-14:30 Lunch

SESSION 4 MATERIALS FOR ENVIRONMENTS

9:45 – 10:05

4.1.k

M. Silverstein

Accessing innovative porous polymers through emulsion templating

10:05 – 10:20

4.2.i

E.F. Lucas

Simple characterization techniques to evaluate polymer performance as additive for petroleum production

10:20 – 10:35

4.3

P.K. Samantaray

Hierarchical MoS₂ foam as scavenger of heavy metals and bacteria in point of use water purification

10:35 – 10:50

4.4

M. Cantarella

Molecularly imprinted polymers for selective water treatment

11:30 – 11:50

10:55-11:30 Coffee break

4.5.k

S.C. Carroccio

Hybrid polymeric systems based on organic and inorganic semiconductors for application in water remediation

11:50 – 12:05

4.6.i

M. Salzano De Luna

Design of chitosan/graphene oxide aerogels for water purification

12:05 – 12:20

4.7

X. Wang

Facile fabrication of superhydrophobic and eco-friendly polylactic acid foam for oil-water separation via skin-peeling

12:20 – 12:35

4.8

S. Ronka

Specific polymer adsorbent for the removal of terbuthylazine and its derivatives from waters

12:35 – 12:50

4.9

H. Fałtynowicz

Surfactin separation on mesoporous activated carbons

13:00-14:30 Lunch

SESSION 5 MATERIALS FOR MEDICINE AND HEALTH

14:30 – 14:50

5.1.k

L. Ambrosio

Functional biomaterials and bio-interfaces

14:50 – 15:05

5.2.i

J. Saunier

Effect of locking solutions on polyurethane PICs: an in vitro evaluation

10:05 – 15:20

5.3.i

P. Dardano

Photodefinible microneedles for trasdermal drugs delivery

15:20 – 15:35

5.4.

R.M. da Silva Moreira Thiré

New strategy for development of 3D-printed PHB-based scaffolds for bone tissue engineering

15:35 – 15:50

5.5

H. Xiao

A drug self-delivery system for cancer therapy

15:50 – 16:05

5.6

E. Ivankova

Conductive chitosan-based materials for tissue engineering and transplantology

16:40 – 16:55

5.7.i

M.G. Raucci

Eumelanin Functionalized polylactic acid fibrous substrate for neurodegenerative diseases treatment

16:55 – 17:10

5.8

M.El Fray

Wet electrospinning and biological proprieties of helically coiled scaffolds from PBS copolymers

17:10 – 17:25

5.9

F. Rezaei

Fabrication of electrospun conductive polymeric nanofibers by using a novel in-liquid cold plasma jet as smart biomaterials

17:25 – 17:40

5.10

L.V. Sigolaeva

Polymer-based (hybrid) materials as efficient surface modifiers for advanced (bio)sensing applications

17:40 – 17:55

5.11

A. Dodero

Nanocomposite alginate-based electrospun membranes for wound healing applications

17:55 – 18:10

5.12

A. Longo

PLLA fibers containing DEET

18:25-19:00 Poster Session

20:00 Social Dinner

SESSION 6 SUSTAINABILITY AND RECYCLING

14:30 – 14:50

6.1.k

A. Mija

Bio-based thermosets and their sustainable composites

14:50 – 15:05

6.2.i

S. Wongkasemjit

Reusable T. Reesei immobilized on SBA-15 for monomeric sugar production

15:05 – 15:20

6.3

K. Mazur

Evaluation of the reinforcement composites based on biodegradable polymers with natural fibres

15:20 – 15:35

6.4

C. Fosse

Investigation of a series of furan-based polyesters containing different glycolic subunits

15:35 – 15:50

6.5

A. Marotta

Study of the curing process of bioderived epoxy resins in presence of fillers

15:50 – 16:05

6.6

L. Sansone

Degradation analysis of cellulose acetate recovered from cigarette butts

16:40 – 17:00

16:05-16:40 Coffee break

6.7.k

A. Maffezzoli

Morphological and mechanical characterization of recycled short carbon fiber composites

17:00 – 17:20

6.8.k

A. Sambandam

Sustainable nanohybrid materials for energy storage applications

17:20 – 17:35

6.9

S. Agustin Salazar

Ball milled pecan nutshell as reinforcing filler in poly(lactic acid)

17:35 – 17:50

6.10

V. Strongone

Biochar as a promising carbon filler to functionalize UV-LED curable nanocoatings

17:50 – 18:05

6.11

G. Viscusi

Bio-based active composites from natural pectins filled with hemp fibers for agricultural applications

18:05 – 18:20

6.12

B. Woelfel

Recycling and reprocessing of TPU materials towards nonwoven processing

18:25-19:00 Poster Session

20:00 Social Dinner



OCTOBER 17, 2019 – DAY 3

9:00–9:45

Plenary 3: J.M. Kenny

Processing and functionalization of bio-based nanoparticles for polymer bionanocomposites

9:45–10:30

Plenary 4: L. Nicolais

Strategies to create a bridge between the University Research and Enterprise

SESSION 7

MATERIALS FOR ENERGY AND ELECTRONICS

10:30 – 10:50

7.1.k

M. Laus

Self limiting reactions for silicon doping

10:50 – 11:05

7.2

K. Bogdanowicz

Gel electrolytes in energy applications

11:40 – 12:00

7.3.k

A. Abate

Novel materials for stable perovskite solar cells

12:00 – 12:15

7.4

S. Werner

On the selection of a suitable nanoparticle for a BOPP-nanocomposite for DC capacitors

12:15 – 12:30

7.5

Z. Ahmed

Optically active ternary lanthanide tris(β -diketonate) complexes for visible and near infra-red organic light emitting devices (OLEDs)

11:05–11:40 Coffee break

SESSION 8

ENGINEERING AND MANUFACTURING

10:30 – 10:50

8.1.k

V. Castaño

Challenges for advanced materials for 3D printing technologies

10:50 – 11:05

8.2

X. Liu

Porous HDPE bundles via melt extrusion and leaching technique for oil/water separation

11:40 – 12:00

8.3.k

G. Corradi

Mechanical milling: an alternative green method to produce structural and functional bio-nano-composites

12:00 – 12:15

8.4

C. Sollogoub

Nanolayer coextrusion: a relevant tool for nanostructuration of multiphase polymer systems

11:05–11:40 Coffee break

12:15 - 12:30

8.5

S. Kuciel

Evaluation of physicommechanical properties associated with thermal process of PLA samples using FDM additive manufacturing

12:30 - 12:35

Presentation of Polychar 28

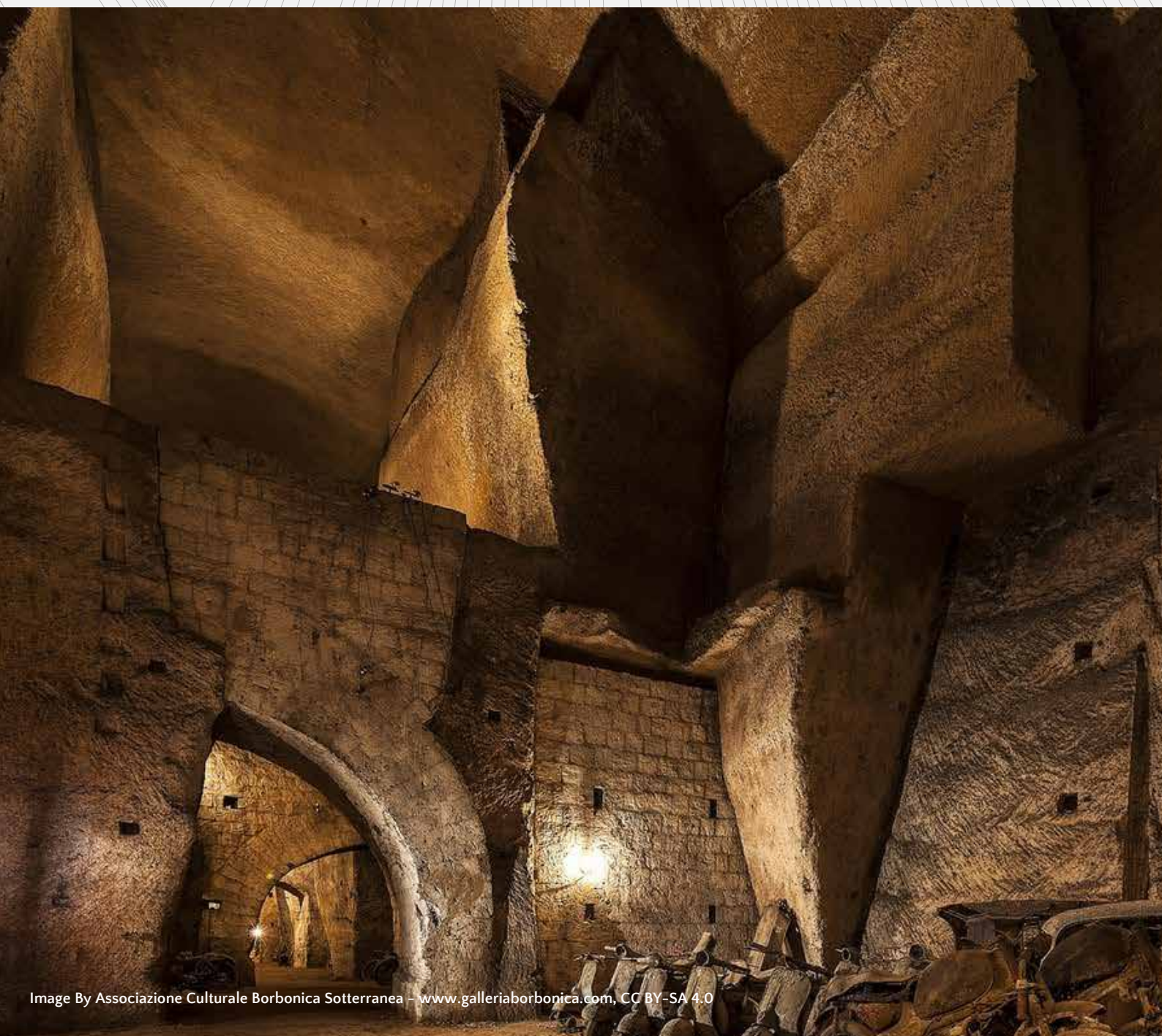
12:35 - 13:15

Closing of the Conference and Awards

13:15-14:45 Lunch

14:45 - 18:00

Guided Tour - Tunnel Borbonico



P1

B.F. Alves

Evidencing the influence of polymer-solvent interactions on the performance of the polymer as pour point reducer in wax systems

P2

M. L. Di Lorenzo

Structure and properties of polyamide-11/poly(butylene succinate) bio-based polymer blends

P3

B. Apicella

Evaluation of amorphous/graphitic character of carbon materials

P4

T. Sterzynski

Influence of crosslinking on positive temperature coefficient of polymeric materials

P5

D. Scarpa

Electrochemical synthesis of syngas assisted by new polymer nanocomposite catalysts

P6

M. Dobrzyńska-Mizera

Biodegradable polylactide-based composites with enhanced antibacterial properties

P7

E. Ponticorvo

Olive mill wastewater as a valuable source for electrochemical biodiesel production

P8

O. Astakhova

Epoxy compositions modified with monoperoxy derivative of epidian-6 and filled with natural calcium carbonate

P9

F. Bertini

Thermal and mechanical behavior of lightweight poly(e-caprolactone) composites for rotational molding

P10

S. Ronka

Polymeric micelles based on pluronics® as flavonoids' nanocarriers for anticancer treatment

P11

C. Cirillo

A new efficient nanocomposite for n-alkylation of anime

P12

F. Coccia

Modification of nanocrystalline cellulose as bio-reinforcement for polyurethanes foams

P13

T. Deng

Simulation of woven reinforced thermoplastic composites solid-state thermo-stamping based on a hybrid model

P14

P. Laurienzo

Fabrication of nanoparticles from a-cyclodextrin inclusion complexes of self-assembling PEG-PCL copolymers

P15

N. Faggio

Furan-based bio-epoxy resins and nanocomposites as tinplate coatings

P16

E. Lorusso

Polyester fabrics modified with zwitterionic polymer brushes to reduce biofilm formation

P17

P. Grushin

Features of photocontrolled polymerization of vinyl monomers under the influence of systems based on phenoxazine derivatives

P18

L. Jiang

Enhanced interfacial performance of CF/PEEK composite laminates by regulating s-PEEK sizing agent at the interface

P19

F. P. La Mantia

Characterization of biodegradable polymers underwent to UV exposure

P20

C. Carrozza

Synthesis and characterization of bio-based polyols from epoxidized soybean oil (ESO) and different fatty acids

P21

M. Qu

Novel definition of the synergistic effect between carbon nanotubes and carbon black for electrical conductivity

P22

O. Mukbaniani

Composition materials based on sawdust and ethyl-silicate

P23

R. Nunes

Isoprene oligomers to control the solidification of paraffin based fluids

P24

M. Palomba

Preparation and characterization of iron(II) chloride graphite intercalation compounds

P25

D. Zampino

Antimicrobial activity of polymeric ionic liquids

P26

D. Zampino

Antibacterial activity of polymer compounds based on imidazolium ionic liquid

P27

Y. Qin

Simple mathematical model building to predict the effect of take-up pressure on fibre diameter of PET melt spinning

P28

M. Proverbio

Influence of cocatalysts and polymerization conditions on properties of polyesters from rocop using salen complexes

P29

G. Rollo

Selective laser sintering fabricated thermoplastic polyurethane/graphene cellular structures for pressure sensor applications

P30

L. Veronese

Quaternary phosphonium halides as cocatalysts for cyclohexene oxide/CO₂ copolymerization catalyzed by Salen-type Cr(III) complexes

P31

H. Xu

Conductivity of PMMA composite casting films filled with ultra-high aspect ratio of carbon fibers

P32

S. Scudieri

Electrochemical oxidation of phenol using a new PANI/metal oxide electrode

P33

V. Sedlarik

1,8-naphthalimide-based luminiscent probe for sensing of metal ions

P34

V. Sedlarik

Agro-hydrogels based on whey for soil conservatio

P35

V. Seslija

Investigation of the plastifying properties of PEG fatty acid esters used in bio-based film formulations

P36

V. Seslija

Rheological properties of styrene free unsaturated polyester resins

P37

C. M. F. Silva

Effect of the diluents ratio in the synthesis of sulfonated glycidyl metacrylate resins on their porosity and adsorption ability of ammonium ion

P38

S. Silvano

Synthesis of sulfur-rich polymers: copolymerization of episulfides and carbon disulfide using chromium complexes

P39

G. Soriano

Synthesis and characterization of arabic GUM-acrylamide hydrogels

P40

W. Di Cianni

New strategies for DLW of metallic structures onto opaque substrates

P41

P. Cardoso

Evaluation of thermal and mechanical properties of 3D printed PLA/alumina/carbon black nanocomposites parts

P42

V. Gonzalez

Obtaining orange-peel-PVA films by electro-spinning

P43

B. Narowskaa

Application of activated carbon to the biotransformation of vegetable oils

P44

S. Dello Iacono

Adhesion promotion via Diels-Alder covalent bonds in self-healing composites

P45

F. Lazzari

Hybrid multimaterial actuators with anatomically derived geometry

P46

J. Romanò

Additive manufacturing in ABS as a resource for fully customised upper-limb visco-elastic orthoses

P47

F. De Falco

Novel finishing treatments of synthetic fabrics to mitigate microplastic pollution

P48

R. Castaldo

Characterization of end-of-life materials from construction, automotive and furniture sectors to evaluate their recyclability

P49

D. Volyniuk

Multicolor-excimer emitters based on diphenylsulfone/ditolylsulfone and phenothiazine/pheno-xathiine/xanthene moieties towards white electroluminescent devices

P50

A. Nesic

Chitin films incorporated with mulberry extracts as novel bio-sensors in food packaging

P51

R. Capuano

Silica-poly(lactic acid) plasticized nanocomposites: evolution of properties with aging

P52

A. Avolio

Recovery and recycling of mixed plastics from landfill mining

P53

G. C. Lama

Lightweight concrete/graphene-based nanocomposites

P54

C. Santillo

HAVOH-based composites with segregated MWCNTs structure for FDM 3D printing technology

P55

R. Turco

Cynara Cardunculus biomass recovery as eco-sustainable bioplasticizers resource for bioplastics

P56

M. Guerritore

Novel materials based on hyper-crosslinked resins and mesoporous silica nanoparticles for tunable adsorption of organic contaminants from water

P57

F. Cilento

Effective reinforcement in hierarchical composite films

P58

M. Ricciulli

Modification of poly (lactic acid) with itaconic anhydride by reactive extrusion

P59

I. De Luca

Srf siRNA nanoparticle-coated coronary stent for prevention of post-angioplasty restenosis