

17th World Textile Conference (AUTEX 2017)

Shaping the Future of Textiles

IOP Conference Series: Materials Science and Engineering
Volume 254

Corfu, Greece
29 – 31 May 2017

Part 1 of 2

ISBN: 978-1-5108-5204-4
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

ADVANCED FIBRES AND MATERIALS

A NOVEL METHOD FOR DETERMINATION OF OCCURRENCE ORDER OF STABILIZATION REACTIONS IN CARBON FIBER PRECURSOR	1
<i>S Arbab, H Mirbaha, A Zeinolebadi, P Nourpanah</i>	
MECHANICAL AND DURABILITY CHARACTERISTICS OF EXTERNALLY GFRP REINFORCED UNSATURATED POLYESTER POLYMER CONCRETE	6
<i>H Bouguessir, E Harkati, M Rokbi, G Priniotakis, S Vassiliadis</i>	
EXERGY ANALYSIS OF ENCAPSULATION OF PHOTOCROMIC DYE BY SPRAY DRYING	14
<i>A Çay, E P Akçakoca Kumbasar, S Morsunbul</i>	
FLAME-RESISTANT PURE AND HYBRID WOVEN FABRICS FROM BASALT	20
<i>H Jamshaid, R Mishra, J Militky</i>	
ENHANCEMENT OF SPARTIUM JUNCEUM L. FIBRES PROPERTIES	27
<i>Z Kovacevic, S Bischof, A Antonovic</i>	
EVALUATION OF THE MORPHOLOGY OF METAL PARTICLES IN INTRINSIC CONDUCTIVE POLYMER DISPERSIONS	33
<i>E Lempa, C Graßmann, M Rabe, A Schwarz-Pfeiffer, L Van Langenhove</i>	
CHARACTERIZATION OF ORANGE OIL MICROCAPSULES FOR APPLICATION IN TEXTILES	39
<i>W. Rossi, M. Bonet-Aracil, E. Bou-Belda, J. Gisbert-Payá, K. Wilson, L. Roldo</i>	

INNOVATIVE FUNCTIONAL TEXTILES

CNTS IN POLYMER MELT: THE INFLUENCE ON DISPERSION BY SONICATION	45
<i>M Bischoff, T Köhler, J. Bandelin, J. Möhrcke, R. Jung, T Gries</i>	
PREPARATION AND PROPERTIES OF ELECTRO-CONDUCTIVE FABRICS BASED ON POLYPYRROLE: COVALENT VS. NON-COVALENT ATTACHMENT	52
<i>N C David, D Anavi, M Milanovich, Y Popowski, L Frid, E Amir</i>	
DIFFERENTIATION OF MOLECULAR CHAIN ENTANGLEMENT STRUCTURE THROUGH LASER RAMAN SPECTRUM MEASUREMENT OF HIGH STRENGTH PET FIBERS UNDER STRESS	70
<i>D Go, W Takarada, T Kikutani</i>	
WOVEN METAMATERIALS WITH AN ELECTROMAGNETIC PHASE-ADVANCE FOR SELECTIVE SHIELDING	76
<i>C Huppé, C Cochrane, L Burgnies, F Rault, G Ducournau, E Lheurette, V Koncar, D Lippens</i>	
SOIL-RELEASE BEHAVIOUR OF POLYESTER FABRICS AFTER CHEMICAL MODIFICATION WITH POLYETHYLENE GLYCOL	82
<i>T M R Miranda, J Santos, G M B Soares</i>	

TECHNICAL TEXTILES COMPOSITES AND MEMBRANES

EFFECT OF JUTE FIBRE TREATMENT ON MOISTURE REGAIN AND MECHANICAL PERFORMANCE OF COMPOSITE MATERIALS	88
<i>A Ali, V Baheti, A Jabbar, J Militky, S Palanisamy, H F Siddique, D Karthik</i>	
A REVIEW ON UTILIZATION OF TEXTILE COMPOSITES IN TRANSPORTATION TOWARDS SUSTAINABILITY	94
<i>Nermin M. Aly</i>	
ANALYSIS OF THE DEFORMATION SPEED OF ADAPTIVE FIBER REINFORCED PLASTICS WITH VARIABLE HINGED WIDTH	101
<i>M Ashir, C Theiss, A Nocke, C Cherif</i>	
MECHANICAL PROPERTIES OF FLAX ROVING COMPOSITES REINFORCEMENT	108
<i>K Czub, M Barbuski</i>	

ROBOT-GUIDED EDDY CURRENT MEASUREMENT OF YARN ORIENTATION CHANGE DURING STEPWISE 3D DRAPING	115
<i>G Bardl, A M Khan, A Nocke, C Cherif</i>	
MULTI-LAYER STRUCTURES WITH THERMAL AND ACOUSTIC PROPERTIES FOR BUILDING REHABILITATION	120
<i>J Bessa, C Mota, F Cunha, F Merino, R Fangueiro</i>	
ONE-STEP MANUFACTURING OF INNOVATIVE FLAT-KNITTED 3D NET-SHAPE PREFORMS FOR COMPOSITE APPLICATIONS	125
<i>Quentin Bollengier, Florian Wieczorek, Sven Hellmann, Wolfgang Trümper, Chokri Cherif</i>	
STUDY OF THE INTERNAL CONFINEMENT OF CONCRETE REINFORCED (IN CIVIL ENGINEERING) WITH WOVEN REINFORCEMENT	131
<i>M Dalal, O Goumairi, A El Malik</i>	
USE OF AIR PERMEABILITY FOR DETERMINATION OF EQUIVALENT AVERAGE PORE DIAMETER IN WOVEN FABRICS	137
<i>K Dimitrovski, Ž Zupin, K Kostajnsšek, E Branca</i>	
INNOVATIVE MONITORING OF 3D WARP INTERLOCK FABRIC DURING FORMING PROCESS	143
<i>C Dufour, I Jerkovic, P Wang, F Boussu, V Koncar, D Soulat, A M Grancaric, P Pineau</i>	
LITERATURE REVIEW OF TUFTED REINFORCEMENT FOR COMPOSITE STRUCTURES	151
<i>I Gnaba, X Legrand, P Wang, D Soulat</i>	
MULTI-LAYERED SENSOR YARNS FOR IN SITU MONITORING OF TEXTILE REINFORCED COMPOSITES	161
<i>E Haentzsch, T Onggar, A Nocke, R D Hund, Ch Cherif</i>	
PROPERTIES OF CF/PA6 FRICTION SPUN HYBRID YARNS FOR TEXTILE REINFORCED THERMOPLASTIC COMPOSITES	167
<i>Mmb Hasan, S Nitsche, A Abdkader, Ch Cherif</i>	
LOW-VELOCITY IMPACT BEHAVIOR OF WEFT-KNITTED SPACER FABRICS REINFORCED COMPOSITES BASED ON ENERGY ABSORPTION	174
<i>F Hasanalizadeh, H Dabiryan, M Sadighi</i>	
MECHANICAL BEHAVIOR OF NANOCELLULOSE COATED JUTE/GREEN EPOXY COMPOSITES	179
<i>A Jabbar, J Militký, A Ali, M Usman Javed</i>	
DEVELOPMENT OF PLA HYBRID YARNS FOR BIOBASED SELF-REINFORCED POLYMER COMPOSITES	196
<i>T Köhler, T Gries, G Seide</i>	
HIGH STRENGTH AND LOW WEIGHT HOLLOW CARBON FIBRES	202
<i>T. Köhler, R. Brüll, F. Pursche, J. Langgartner, G. Seide, T. Gries</i>	
OPTIMIZATION OF PROCESS PARAMETERS DURING CARBONIZATION FOR IMPROVED CARBON FIBRE STRENGTH	208
<i>T. Köhler, F. Pursche, P. Burscheidt, G. Seide, T. Gries</i>	
COST EFFICIENT CARBON FIBRE REINFORCED THERMOPLASTICS WITH IN-SITU POLYMERIZATION OF POLYAMIDE	212
<i>T Köhler, M Akdere, T Röding, T Gries, G Seide</i>	
DEVELOPMENT OF GLASS FIBRE REINFORCED COMPOSITES USING MICROWAVE HEATING TECHNOLOGY	216
<i>T Köhler, K Vonberg, T Gries, G Seide</i>	
TRIBOELECTRIC EFFECT IN ENERGY HARVESTING	222
<i>I Logothetis, S Vassiliadis, E Sioreas</i>	
C/P CARBON COMPOSITES - REINFORCEMENT VOLUME EFFECT ON THE ELECTRICAL PROPERTIES	228
<i>J Novotná, J Salacová, M Pechociaková</i>	
TAILORED MATERIAL PROPERTIES USING TEXTILE COMPOSITES	235
<i>C M Pastore</i>	
PREPARATION OF ACTIVATED CARBON FABRICS FROM COTTON FABRIC PRECURSOR	240
<i>R Salehi, F Dadashian, M Abedi</i>	
POSSIBILITIES TO IMPROVE ELECTROMAGNETIC SHIELDING OF PLASTER COMPOSITES ADDING CARBON FIBERS	245
<i>A Samková, P Kulhavy, M Pechociaková</i>	
AN INVESTIGATION INTO LOW-VELOCITY IMPACT RESISTANCE AND TENSILE STRENGTH OF ALUMINIUM-GLASS FABRIC HYBRID COMPOSITE	250
<i>S Mohammad Saniei, Hasan Mashroteh, Mohsen Hadizadeh</i>	

APPLICATION OF WATERPROOF BREATHABLE FABRIC IN THERMAL PROTECTIVE CLOTHING EXPOSED TO HOT WATER AND STEAM.....	256
<i>Y Su, R Li, G Song, J Li</i>	
EFFECT OF SEA COMPONENT DISSOLUTION ON FIBROUS STRUCTURE OF ISLANDS-IN-THE-SEA SPUNBOND NONWOVENS.....	265
<i>F Suvari, Y Ulcay, B Pourdeyhimi</i>	
INNOVATIVE CELLULAR DISTANCE STRUCTURES FROM POLYMERIC AND METALLIC THREADS.....	269
<i>F Wieczorek, W Trümper, C Cherif</i>	
PREPARATION AND STUDY ON THE STRUCTURE OF KERATIN/PVA MEMBRANE CONTAINING WOOL FIBERS.....	274
<i>Min Wu, Shuming Shen, Xuhong Yang, Rencheng Tang</i>	
IMPACT BEHAVIOUR OF AUXETIC KEVLAR®/ EPOXY COMPOSITES.....	280
<i>S Yang, V B Chalivendra, Y K Kim</i>	

PROTECTIVE TEXTILES

DEVELOPMENT OF ADAPTIVE BUST FOR FEMALE SOFT BODY ARMOUR USING THREE DIMENSIONAL (3D) WARP INTERLOCK FABRICS: THREE DIMENSIONAL (3D) DESIGN PROCESS.....	287
<i>M A Abtew, P Bruniaux, F Boussu</i>	
AN INVESTIGATION ON SEWABILITY OF X-RAY PROTECTIVE FABRICS.....	294
<i>N Aral, B Nergis, C Candan, A O Tümsük, T Y Bozkurt, I G Gür</i>	
EFFECT OF STRUCTURAL PARAMETERS ON BURNING BEHAVIOR OF POLYESTER FABRICS HAVING FLAME RETARDANCY PROPERTY.....	299
<i>E K Çeven, G K Günaydin</i>	
INTUMESCENT FORMULATIONS BASED ON LIGNIN AND PHOSPHINATES FOR THE BIO-BASED TEXTILES.....	305
<i>N Mandlekar, A Cayla, F Rault, S Giraud, F Salain, G Malucelli, J Guan</i>	
ANTIFUNGAL ACTIVITY OF FABRICS KNITTED BY METALIZED SILVER/POLYESTER COMPOSITE YARN.....	311
<i>I Özkan, P Duru Baykal</i>	
FLAMMABILITY ON TEXTILE OF FLIGHT CREW PROFESSIONAL CLOTHING.....	315
<i>M C Silva-Santos, M S Oliveira, A M Giacomini, M C Laktim, J Baruque-Ramos</i>	

MEDICAL TEXTILES, TISSUE ENGINEERING, IMPLANTS

EFFECT OF TEXTILES STRUCTURAL PARAMETERS ON SURGICAL HEALING; A CASE STUDY.....	321
<i>A Ali Marwa</i>	
EVALUATION OF OPTICAL DATA GAINED BY ARAMIS-MEASUREMENT OF ABDOMINAL WALL MOVEMENTS FOR AN ANISOTROPIC PATTERN DESIGN OF STRESS-ADAPTED HERNIA MESHES PRODUCED BY EMBROIDERY TECHNOLOGY.....	328
<i>A Breier, L Bittrich, J Hahn, A Spickenheuer</i>	
HYDROPHILIC-IMPERMEABLE MODIFIED POLYETHYLENE TEREPHTHALATE FOR SELECTIVE ENDOTHELIALIZATION.....	334
<i>D Chetouane, J F Fafet, R Barbet, F Dieval</i>	
ELECTROSPUN POLYMERIC DRESSINGS FUNCTIONALIZED WITH ANTIMICROBIAL PEPTIDES AND COLLAGEN TYPE I FOR ENHANCED WOUND HEALING.....	340
<i>H P Felgueiras, M T P Amorim</i>	
STRESS ADAPTED EMBROIDERED MESHES WITH A GRADED PATTERN DESIGN FOR ABDOMINAL WALL HERNIA REPAIR.....	346
<i>J Hahn, L Bittrich, A Breier, A Spickenheuer</i>	
COMPOSITE FIBROUS GLAUCOMA DRAINAGE IMPLANT.....	352
<i>A Klapstova, J Horakova, A Shynkarenko, D Lukas</i>	
COMBINING MATERIAL AND STRUCTURAL ELASTICITY – AN APPROACH TO ENHANCED COMPLIANCE OF SMALL-CALIBRE VASCULAR GRAFTS.....	358
<i>A Loewen, K-M Kossel, V Gesché, T Gries, S Jockenhoevel</i>	

DEVELOPMENT OF ELECTROSPUN COMPOSITE AS SUBSTITUTIVE DIAPHRAGM MEMBRANE	363
<i>E Mohsenzadeh, N Khenoussi, L Schacher, D Adolphe, J Hemmerlé, A Schneider, N Bahlouli, C Wagner-Kocher</i>	
TEXTILE STRUCTURES FROM HYALURONAN BASED CORE-SHELL FIBERS	367
<i>T Pitucha, K Lipenska, J Kubickova, V Zapotocky, V Velebny</i>	
THE POTENTIAL OF IMPROVING MEDICAL TEXTILE FOR CUTANEOUS DISEASES	373
<i>C D Radu, A Cerempei, M Salariu, O Parteni, E Ulea, Chr Campagne</i>	
PRODUCTION OF YARNS COMPOSED OF ORIENTED NANOFIBERS FOR OPHTHALMOLOGICAL IMPLANTS	379
<i>A Shynkarenko, A Klapstova, A Krotov, M Moucka, D Lukas</i>	

SMART-INTERACTIVE AND MULTIFUNCTIONAL TEXTILES

IMPLEMENTING TRACEABILITY USING PARTICLE RANDOMNESS-BASED TEXTILE PRINTED TAGS	384
<i>T K Agrawal, L Koehl, C Campagne</i>	
DESIGN OF AN ELECTRONIC CHEST-BAND	390
<i>R Atakan, H Acikgoz, Tufan, H Baskan, S H Eryuruk, N Akalin, H Kose, Y Li, S Kursun Bahadır, F Kalaoglu</i>	
THE INTERACTIVE OPTICAL FIBER FABRICS FOR SMART INTERIOR ENVIRONMENT	397
<i>Z Q Bai, A H Dong, Z Y Du, J Tan</i>	
RUNNING FUNCTIONAL SPORT VEST AND SHORT FOR E-TEXTILE APPLICATIONS	401
<i>H Baskan, H Acikgoz, R Atakan, H Eryuruk, N Akalin, H Kose, Y Li, S Kursun Bahadır, F Kalaoglu</i>	
EXPLORING DYNAMIC LIGHTING, COLOUR AND FORM WITH SMART TEXTILES	408
<i>I Cabral, C Silva, L Worbin, A P Souto</i>	
A COMPARATIVE THERMOPHYSIOLOGICAL STUDY IN SPORT BRAS FOR RUNNING	414
<i>L P Carneiro, T M R Miranda, A Catarino</i>	
FLEXIBLE FORCE SENSORS FOR E-TEXTILES	421
<i>H Carvalho, Y Yao, L M Gonçalves</i>	
SMART WHEELCHAIR: INTEGRATION OF MULTIPLE SENSORS	427
<i>H. E. Gassara, S. Almuhammed, A. Moukadem, L. Schacher, A. Dieterlen, D. Adolphe</i>	
TEXTILE SENSORS FOR STAB AND CUT DETECTION	434
<i>C Graßmann, M Obermann, E Lempa, T Bache, P K Siegel, T Freyer, S Paschko, T Beyer, M Kirsche, A Schwarz-Pfeiffer</i>	
REMOVING NICKEL FROM NICKEL-COATED CARBON FIBERS	440
<i>A Hardianto, C Hertleer, G De Mey, L Van Langenhove</i>	
MANUFACTURING OF POLYLACTIC ACID NANOCOMPOSITE 3D PRINTER FILAMENTS FOR SMART TEXTILE APPLICATIONS	446
<i>R Hashemi Sanatgar, A Cayla, C Campagne, V Nierstrasz</i>	
ADAPTIVE BRA DESIGNS FOR THE INDIVIDUALS WITH SPECIAL NEEDS	450
<i>A Imran, E Drean, L Schacher, D Adolphe</i>	
INVESTIGATION OF THE INFLUENCE OF HEAT TRANSFER ON SCREEN PRINTED TEXTILE CONDUCTOR	456
<i>I Kazani, G De Mey, C Hertleer, G Guxho, L Van Langenhove</i>	
PHYSICAL PROPERTIES OF ZRC/AL₂O₃ IMBEDDED HEAT STORAGE WOVEN FABRICS	463
<i>S J Kim, M K Song, K O Seo, H. A Kim</i>	
EFFECTS OF THERMAL ENERGY HARVESTING ON THE HUMAN – CLOTHING – ENVIRONMENT MICROSYSYEM	469
<i>A C Myers, J S Jur</i>	
DEVELOPMENT OF 2D AND 3D STRUCTURED TEXTILE BATTERIES PROCESSING CONDUCTIVE MATERIAL WITH TAILORED FIBER PLACEMENT (TFP)	474
<i>M Normann, T Grethe, K Zöll, A Ehrmann, A Schwarz-Pfeiffer</i>	
A COMPARISON OF THE ACCURACY OF THE SMART SOCK SYSTEM TO FORCE PLATFORM AND OPTICAL SYSTEM FOR MEASUREMENT OF TEMPORAL PARAMETERS OF LOCOMOTION	480
<i>A Oks, A Katashev, E Bernans, V Abolins</i>	
STUDY ON TEXTILE COMFORT PROPERTIES OF POLYPROPYLENE BLENDED STAINLESS STEEL WOVEN FABRIC FOR THE APPLICATION OF ELECTROMAGNETIC SHIELDING EFFECTIVENESS	486
<i>S Palanisamy, V Tunakova, D Karthik, A Ali, J Militky</i>	
INTEGRATION METHODS FOR THERMOSENSITIVE GEL SYSTEMS IN GARMENTS	493
<i>A Reich, H Rödel, A Stoll, A Liske, D Zehm</i>	

CHITOSAN-CARBOXYMETHYLCELLULOSE BASED MICROCAPSULES FORMULATION FOR CONTROLLED RELEASE OF ACTIVE INGREDIENTS FROM COSMETO TEXTILE	499
<i>J C Roy, A Ferri, F Salatiin, S Giraud, G Chen, G Jinping</i>	
INVESTIGATION OF THE TECHNOLOGY OF CONDUCTIVE YARNS MANUFACTURING	505
<i>Dzmitry Ryklin, Sergey Medvetski</i>	
SOUND ABSORPTION OF TEXTILE MATERIAL USING A MICROFIBRES RESISTIVE LAYER	512
<i>M P Segura Alcaraz, M Bonet-Aracil, J G Segura Alcaraz, I Montava Seguí</i>	
CHARACTERIZATION AND OPTIMIZATION OF AN INKJET-PRINTED SMART TEXTILE UV-SENSOR CURED WITH UV-LED LIGHT	518
<i>S Seipel, J Yu, A P Periyasamy, M Viková, M Vik, V A Nierstrasz</i>	
MODIFICATION OF COTTON FABRIC WITH TEMPERATURE/PH RESPONSIVE HYDROGEL: INFLUENCE OF PARTICLES SIZE	521
<i>D Štular, B Tomšic, B Simoncic, I Jerman, M Mihelcic, M Colovic</i>	
ELECTROMECHANICAL PROPERTIES OF POLYAMIDE/LYCRA FABRIC TREATED WITH PEDOT:PSS	527
<i>M G Tadesse, D A Mengistie, C Loghin, Y Chen, L Wang, D Catalin, C Müller, V Nierstrasz</i>	
DEVELOPMENT OF MONO-COMPONENT AND TRI-COMPONENT FIBRES 100% POLYMER BASED PIEZOELECTRIC PVDF TO HARVEST ENERGY	531
<i>A Talbourdet, F Rault, A Cayla, C Cochrane, E Devaux, A Gonthier, G Lemort, C Campagne</i>	
SYNTHESIS AND CHARACTERIZATION OF HALOCHROMIC HYBRID SOL-GEL FOR THE DEVELOPMENT OF A PH SENSOR FABRIC	537
<i>V Trovato, G Rosace, C Colleoni, M R Plutino</i>	
INVESTIGATION OF THE ELECTRICAL CHARACTERISTICS OF ELECTRICALLY CONDUCTING YARNS AND FABRICS	542
<i>R D Akbarov, B H Baymuratov, D N Akbarov, M. Ilhamova</i>	

TEXTILE PROCESSING

A NOVEL WASHING ALGORITHM FOR UNDERARM STAIN REMOVAL	550
<i>H Acikgoz Tufan, I Gocek, U K Sahin, I Erdem</i>	
STUDY OF THE STRETCHING FORCE OF THE NEEDLE'S THREAD IN THE WORK WITH WOOLLEN TEXTILES	557
<i>Snezhina Andonova, Ivelin Rahnev</i>	
FR PERFORMANCE OF NEW FIRE-OFF ON PET/CO BLEND FABRICS	563
<i>R Atakan, E Çelebi, G Özcan, N Soydan, A S Sarac</i>	
EFFECT OF PIGMENT CONCENTRATION ON FASTNESS AND COLOR VALUES OF THERMAL AND UV CURABLE PIGMENT PRINTING	569
<i>Gulcin Baysal, Berdan Kalav, Burçak Karagüzel Kayaoglu</i>	
THE ARRANGEMENT OF THE FIBERS IN THE YARN AND EFFECT ON ITS STRENGTH	577
<i>H T Bobajonov, J K Yuldashev, J K Gafurov, K Gofurov</i>	
DEVELOPMENT AUXILIARIES FOR DYEING POLYESTER WITH DISPERSE DYES AT LOW TEMPERATURES	582
<i>F J Carrion- Fite, S Radei</i>	
AN INVESTIGATION ON THE EFFECT OF ELASTANE DRAW RATIO ON AIR PERMEABILITY OF DENIM BI-STRETCH DENIM FABRICS	588
<i>H I Çelik, H K Kaynak</i>	
APPLICATION OF WOOL REACTIVE DYES FOR HAIR COLORATION	594
<i>D Chae, J Koh</i>	
OZONE BLEACHING OF CELLULOSE	598
<i>H A Eren, S Eren</i>	
DECOLORISATION OF DISPERSE DARK BLUE 148 WITH OZONE	601
<i>S Eren, I Yetisir, H A Eren</i>	
SUPERCRITICAL CARBON DIOXIDE FOR TEXTILE APPLICATIONS AND RECENT DEVELOPMENTS	606
<i>H A Eren, O Avinc, S Eren</i>	
FATIGUE BEHAVIOUR OF CORE-SPUN YARNS CONTAINING FILAMENT BY MEANS OF CYCLIC DYNAMIC LOADING	610
<i>S Esin, B Osman</i>	
IMPROVING QUALITY OF OE SPUN YARN	616
<i>J K Gafurov, S Vassiliadis, K Gofurov</i>	

THE EFFECT OF WARP TENSION ON THE COLOUR OF JACQUARD FABRIC MADE WITH DIFFERENT WEAVES STRUCTURES	622
<i>A Karnoub, N Kadi, O Holmudd, J Peterson, M Skrifvars</i>	
INDIVIDUAL CUSTOMIZABLE IN-STORE TEXTILE PRODUCTION.....	630
<i>M Kemper, D Bücher, Y-S Gloy, T Gries</i>	
WET SPINNING PAN-FIBRES FROM AQUEOUS SOLUTIONS OF ZNCL₂ AND NASCN	635
<i>T Köhler, S Peterek, T Gries</i>	
ON THE TECHNOLOGICAL DEVELOPMENT OF COTTON PRIMARY PROCESSING, USING A NEW DRYING-PURIFYING UNIT	639
<i>M M Agzamov, S Z Yunusov, J K Gafurov</i>	
COMPRESSIBILITY AND RESILIENCY PROPERTIES OF WILTON TYPE WOVEN CARPETS PRODUCED WITH DIFFERENT FIBER BLEND RATIO	646
<i>B Osman, S Esin, O Sidika Ziba</i>	
PRELIMINARY STUDY ON THE CORRELATION BETWEEN COLOR MEASUREMENT OF DYED POLYESTER AND ITS IMAGE FILES.....	652
<i>Y K Park, Y C Park</i>	
DISPERSE DYEING PROPERTIES OF (EASY DYEABLE POLYESTER)/SPANDEX BLEND.....	657
<i>M M Rahman, S M Mamun Kabir, H Kim, J Koh</i>	

INNOVATIVE TEXTILE STRUCTURES

PROPERTIES OF ELASTIC FABRICS WITH TREATED AND UNTREATED CO/PBT YARNS IN WEFT DIRECTION	663
<i>M Bizjak, H Kadoglu, K Kostajnshek, P Celik, G Basal Bayraktar, D Duran, T Bedez Üte, M Ertekin, K Dimitrovski</i>	
NEW KNITTED FABRIC CONCEPTS FOR DENIM PRODUCTS.....	669
<i>A Marmarali, G Ertekin, N Oglakcioglu, M Kertmen, I Seçil Aydın</i>	
ISOTROPY EQUILIBRIUM OF THE DOUBLE WOVEN FABRIC WITH COTTON FACE AND WOOL REVERSE FIBROUS COMPOSITIONS.....	675
<i>I Rahnev, G Rimini</i>	
3D KNITTING USING LARGE CIRCULAR KNITTING MACHINES	684
<i>K Simonis, Y-S Gloy, T Gries</i>	
2D NET SHAPE WEAVING FOR COST EFFECTIVE MANUFACTURE OF TEXTILE REINFORCED COMPOSITES	690
<i>D M P Vo, M Kern, G Hoffmann, C Cherif</i>	

NANOTECHNOLOGY, NANOTEXTILES, ELECTROSPINNING

ELECTROSPUN NANOFIBER MEMBRANES FOR ADSORPTION OF DYE MOLECULES FROM TEXTILE WASTEWATER.....	696
<i>C Akduman, E P Akçakoca Kumbasar, S Morsunbul</i>	
HEALTH AND SAFETY CONCERNS OF TEXTILES WITH NANOMATERIALS.....	703
<i>L Almeida, D Ramos</i>	
PREPARATION OF STABLE DISPERSION OF ZNO NANORODS AND ITS APPLICATION ON COTTON FABRIC FOR FUNCTIONAL PROPERTIES.....	709
<i>M Ashraf, T Hussain, M Tabassum, A Javid</i>	
DEVELOPMENT OF AN ELECTROSPINNING DRAFTING SYSTEM	717
<i>N J R Belino, T R A Barata, R Paul</i>	
SILK FIBROIN FROM SILK FIBROUS WASTE: CHARACTERIZATION AND ELECTROSPINNING	723
<i>A Gaviria, S Sanchez-Diaz, A Ríos, M S Peresin, A Restrepo-Osorio</i>	
ELECTROSPINNING AND STABILIZATION OF CHITOSAN NANOFIBER MATS.....	729
<i>N Grimmelsmann, T Grothe, S V Homburg, A Ehrmann</i>	
COAXIAL NANOFIBERS CONTAINING TIO₂ IN THE SHELL FOR WATER TREATMENT APPLICATIONS	734
<i>N Kizildag, J Geltmeyer, N Ucar, K De Buysser, K De Clerck</i>	
ADDITIVES INFLUENCE ON SPINNING SOLUTION AND NANO WEB PROPERTIES	740
<i>S Kukle, S Jegina, A Sutka, R Makovska</i>	
PREPARATION AND CHARACTERIZATION OF SCHIFF BASE CU(II) COMPLEX AND ITS APPLICATIONS ON TEXTILE MATERIALS.....	747
<i>G Oylumluoglu, J Oner</i>	

DOUBLE DIELECTRIC BARRIER (DBD) PLASMA-ASSISTED DEPOSITION OF CHEMICAL STABILIZED NANOPARTICLES ON POLYAMIDE 6,6 AND POLYESTER FABRICS	751
<i>A I Ribeiro, M Modic, U Cvelbar, G Dinescu, B Mitu, A Nikiforov, C Leys, I Kuchakova, M Vanneste, P Heyse, M De Vrieze, N Carneiro, A P Souto, A Zille</i>	
PREPARATION OF VARIOUS NANOFIBROUS COMPOSITE MEMBRANES USING WIRE ELECTROSPINNING FOR OIL-WATER SEPARATION.....	757
<i>Yalcinkaya Fatma, Anna Siekierka, Marek Bryjak, Jiri Maryska</i>	
STRUCTURAL COLORATION OF CHITOSAN-CATIONIZED COTTON FABRIC USING PHOTONIC CRYSTALS	764
<i>G Yavuz, A Zille, N Seventekin, A P Souto</i>	

BIOPOLYMERS AND BIOTECHNOLOGY

CHITOSAN PRETREATMENT FOR COTTON DYEING WITH BLACK TEA	770
<i>J Campos, P Díaz-García, I Montava, M Bonet-Aracil, E Bou-Belda</i>	
BIO-FUNCTIONALIZATION OF CONDUCTIVE TEXTILE MATERIALS WITH REDOX ENZYMES	775
<i>M Kahoush, N Behary, A Cayla, V Nierstrasz</i>	

SURFACE FUNCTIONALIZATION AND COATING

DEVELOPMENT OF FLAME RETARDANT COTTON FABRIC BASED ON IONIC LIQUIDS VIA SOL-GEL TECHNIQUE.....	778
<i>A Bentis, A Boukhriss, D Boyer, S Gmouh</i>	
CERAMIC COATINGS FOR WATER-REPELLENT TEXTILES	788
<i>C Colleoni, F Esposito, E Guido, V Migani, V Trovato, G Rosace</i>	
COMPARISON OF BINDER INFLUENCE AND RIGIDITY ON KNITTING FABRICS TREATED WITH PCMS BY PADDING AND COATING	793
<i>Ç D Dirlik-Uysal, E Bou-Belda, M Bonet-Aracil, N Belino, P Diaz-García, I Montava</i>	
DETERMINATION OF THE RESISTANCE OF FABRIC PRINTED WITH TRICLOSAN MICROCAPSULES TO THE ACTION OF SOIL MICRO-FLORA	798
<i>B Golja, P Forte Tavcer</i>	
AT THE NANO-LEVEL MODIFIED COTTON KNITWEAR PROTOTYPE DEVELOPMENT	802
<i>S Kukle, S Vihodceva, D Belakova, B Lukasevica, A Riepniece</i>	
PVC-BASED SYNTHETIC LEATHER TO PROVIDE MORE COMFORTABLE AND SUSTAINABLE VEHICLES.....	809
<i>I Maia, J Santos, Mj Abreu, T Miranda, N Carneiro, Gmb Soares</i>	
PLASMA-ASSISTED DEPOSITION OF MICROCAPSULE CONTAINING ALOE VERA EXTRACT FOR COSMETO-TEXTILES	815
<i>S Nascimento Do Carmo, A Zille, A P Souto</i>	
THE COMPARISON OF THE THREE METHODS OF SPECIFIC SURFACE EVALUATION – ADSORPTIVE POROSIMETRY, INVERSE GAS CHROMATOGRAPHY AND MATHEMATICAL METHOD.....	821
<i>E Pabjanczyk-Wlazlo, A Komisarczyk</i>	
INTUMESCENT FLAME RETARDANT PROPERTIES OF GRAFT COPOLYMERIZED VINYL MONOMERS ONTO COTTON FABRIC	827
<i>G Rosace, C Colleoni, V Trovato, G Iacono, G Malucelli</i>	
EFFECT OF ECOLOGICAL SURFACE TREATMENT METHOD ON FRICTION STRENGTH PROPERTIES OF NETTLE (URTICA DIOICA) FIBRE YARNS.....	833
<i>S Sansal, S I Mistik, R Fettahov, S Ovali, M Duman</i>	

PART 2

A MULTIFUNCTIONAL COTTON FABRIC USING TIO₂ AND PCMS: INTRODUCING THERMAL COMFORT AND SELF-CLEANING PROPERTIES.....	838
<i>F A P Scacchetti, E Pinto, G Soares</i>	
DEVELOPMENT OF SELF-CLEANING DENIM FABRICS	845
<i>S S Ugur, A M Sariisik, E Çavuslar, M Ertek</i>	

INFLUENCE OF CROSSLINKER STRUCTURE ON PERFORMANCE OF FUNCTIONALISED ORGANIC-INORGANIC HYBRID SOL-GEL COATING	851
<i>J Vasiljevic, M Zorko, D Štular, B Tomšić, I Jerman, B Orel, J Medved, B Simoncic</i>	
PHOTO-GRAFTING POLYMERIZATION, MICROSTRUCTURE AND HYDROPHILICITY OF SPUN-BLOWN POLYPROPYLENE NONWOVEN FABRICS	858
<i>X Zhu, X Shi, Z Pan, Y Fang, Y Wu</i>	

TEXTILE AND CLOTHING MACHINERY

INDUSTRY 4.0 – HOW WILL THE NONWOVEN PRODUCTION OF TOMORROW LOOK LIKE?	864
<i>F Cloppenburg, A Münkel, Y Gloy, T Gries</i>	
EVALUATION OF BENDING RIGIDITY BEHAVIOUR OF ULTRASONIC SEAMING ON WOVEN FABRICS	868
<i>Ayse Sevkan Macit, Bahar Tiber</i>	
DEVELOPMENT AND TESTING OF A RELAY NOZZLE CONCEPT FOR AIR-JET WEAVING	874
<i>A Münkel, Y S Gloy, T Gries</i>	
SPACER STITCHING', AN INNOVATIVE MATERIAL FEEDING TECHNOLOGY FOR IMPROVED THERMAL RESISTANCE	880
<i>H Saeed, H Rödel, S Krzywinski, L Hes</i>	

TEXTILE TESTING, MEASURING TECHNOLOGY

A NEW PHYSICAL METHOD TO ASSESS HANDLE PROPERTIES OF FABRICS MADE FROM WOOD-BASED FIBERS	891
<i>M Abu-Rous, E Liftünger, J Innerlohinger, B Malengier, S Vasile</i>	
CHARACTERIZATION OF FIBER DIAMETER USING IMAGE ANALYSIS	897
<i>S Baheti, M Tunak</i>	
VISUALIZATION OF FLOW DURING CLEANING PROCESS ON A LIQUID NANOFIBROUS FILTER	903
<i>P Bílek</i>	
THE RELIABILITY OF THE NEWLY DEVELOPED BENDING TESTER FOR THE MEASUREMENT OF FLEXURAL RIGIDITY OF TEXTILE MATERIALS	909
<i>A Binti Haji Musa, B Malengier, L Van Langenhove, C Stevens</i>	
EFFECT OF FIBER BLENDING RATIOS OF COTTON/POLYESTER YARNS ON RETAINED SPLICE DIAMETER	915
<i>H I Çelik, H K Kaynak</i>	
MOISTURE SORPTION IN NATURALLY COLOURED COTTON FIBRES	922
<i>Ö Ceylan, K De Clerck</i>	
STUDY THE RELATION BETWEEN THE YARN PULLING FORCE AND THE BURSTING STRENGTH OF SINGLE JERSEY KNITTED FABRIC	925
<i>S Y El-Tarfawy</i>	
MONITORING IN SITU IN REAL TIME OF RESIN INFUSION FOR THERMOSET COMPOSITE STRUCTURES	931
<i>A Faci, P Wang, C Cochrane, V Koncar</i>	
SELECTING WOOL-TYPE FABRICS FOR SENSORIAL COMFORT IN WOMEN OFFICE CLOTHING FOR THE COLD SEASON, USING THE MULTI-CRITERIA DECISION ANALYSIS	938
<i>Rodica Harpa</i>	
APPLICATION OF IMAGE ANALYSIS METHOD FOR MEASUREMENT OF FABRIC STRETCH DEFORMATION	944
<i>N Jariyapunya, S Baheti</i>	
IN SITU DETERMINATION OF PORE SIZES OF HIGH DENSITY POLYESTER WOVEN FABRICS UNDER BIAXIAL LOADING	950
<i>Recep Türkay Kocaman, Samander Ali Malik, Dilbar Aibibu, Chokri Cherif</i>	
COMFORT AND MICROBIAL BARRIER PROPERTIES OF GARMENTS WORN NEXT TO THE SKIN	956
<i>D Kopitar, B Rogina-Car, Z Skenderi</i>	
EFFECT OF CYCLIC LOADING ON THE CAR SEAT'S SEAMS	963
<i>N Kovalova, J Geršak, A Havelka</i>	

VISUAL COLOUR FASTNESS ASSESSMENTS FOR MULTI-COLOURED FABRICS	969
<i>K Kuramoto, M Yoshihisa, S Kitaguchi, T Sato</i>	
PREDICTION OF WOVEN FABRICS APPEARANCE BASED ON YARN SURFACE-AREA MEASUREMENT SYSTEM (YSMS)	975
<i>G Z Li, Z Zhao, N T Akankwasa, J Wang</i>	
TESTING METHODS OF PRESSURE DISTRIBUTION OF BRA CUPS ON BREASTS SOFT TISSUE	981
<i>B Musilova, R Nemcokova, M Svoboda</i>	
IN-VIVO HUMAN SKIN TO TEXTILES FRICTION MEASUREMENTS	986
<i>Lukas Pfarr, Bernhard Zagar</i>	
THE NOVEL MEASURING METHOD FOR SCREENING AND ASSESSING CHROMIUM CONTENT IN CLOTHES AND SHOES MATERIALS	992
<i>R Salerno-Kochan</i>	
MICROBIAL BARRIER PERMEABILITY AND THERMOPHYSIOLOGICAL AND MECHANICAL PROPERTIES OF STATIC DISSIPATIVE WOVEN FABRIC SYSTEM	998
<i>I Schwarz, B Rogina-Car, D Kopitar</i>	
NEW EXPERIMENTAL DEVICE FOR MEASURING THE INTER-FIBER TRANSVERSAL FRICTION	1005
<i>A Shanwan, H-E Gassara, G Barbier, A Sinoimeri</i>	
RESEARCH ON MECHANICAL AND SENSORIC SET-UP FOR HIGH STRAIN RATE TESTING OF HIGH PERFORMANCE FIBERS	1011
<i>R Unger, P Schegner, A Nocke, C Cherif</i>	

CAD-CAE TECHNOLOGY, MASS CUSTOMISATION

EVALUATION OF THREE-DIMENSIONAL VIRTUAL PERCEPTION OF GARMENTS	1016
<i>G Aydogdu, S Yesilpinar, D Erdem</i>	
IMPROVEMENT OF WORKWEAR CLOTHING FOR ARMY	1022
<i>D. Belakova, I. Dabolina, I. Baltina, G. Zommere</i>	
USAGE OF NONCONTACT HUMAN BODY MEASUREMENTS FOR DEVELOPMENT OF ARMY WORK WEAR TROUSERS	1028
<i>Inga Dabolina, Eva Lapkovska, Ausma Vilumsone</i>	
MASS CUSTOMIZED TECHNICAL TEXTILES IN THE B2B SECTOR	1034
<i>R Gebhardt, M Barteld, L Grafmüller, T Mosig, M Weiß</i>	
BIG DATA IN FASHION INDUSTRY	1040
<i>S Jain, J Bruniaux, X Zeng, P Bruniaux</i>	
3D PRODUCT DEVELOPMENT FOR LOOSE-FITTING GARMENTS BASED ON PARAMETRIC HUMAN MODELS	1046
<i>S Krzywinski, J Siegmund</i>	
ANALYSIS OF DYNAMICS AND FIT OF DIVING SUITS	1054
<i>M Mahmic Naglic, S Petrak, J Gersak, T Rolich</i>	

MODELLING AND SIMULATION

FINITE VOLUME ANALYSIS OF AIRFLOW FIELD IN THE DUAL-FEED AND CONVENTIONAL ROTOR SPINNING UNIT	1060
<i>N T Akankwasa, H T Lin, J Wang</i>	
DRAPE SIMULATION AND SUBJECTIVE ASSESSMENT OF VIRTUAL DRAPE	1066
<i>E Buyukaslan, F Kalaoglu, S Jevsnik</i>	
THE CONSTRUCTION PHASE'S INFLUENCE TO THE MOVING ABILITY OF CROSS-SECTIONS OF WOVEN STRUCTURE	1072
<i>D Inogamdjano, A Daminov, O Kasimov</i>	
THE EFFECT OF FABRIC POSITION TO THE DISTRIBUTION OF ACOUSTIC PRESSURE FIELD IN ULTRASONIC BATH	1081
<i>B O Gürses, A O Özdemir, Ö Tonay, M Sener, S Perinçek</i>	
FROM THE ORGANIC THIN FILM TRANSISTOR TO THE 3-D TEXTILE ORGANIC CYLINDRICAL TRANSISTORS – PERSPECTIVES, EXPECTATIONS AND PREDICTIONS	1087
<i>E Louris, D. Stefanakis, G Priniotakis, L Van Langenhove, D Tassis</i>	

OPTIMIZATION OF CYLINDRICAL TEXTILE ORGANIC FIELD EFFECT TRANSISTORS USING TCAD SIMULATION TOOL	1092
<i>E Louris, D Stefanakis, G Priniotakis, L Van Langenhove, D Tassis</i>	
QUANTITATIVE VALIDATION OF 3D GARMENT SIMULATION SOFTWARE FOR DETERMINATION OF AIR GAP THICKNESS IN LOWER BODY GARMENTS	1101
<i>E Mert, A Psikuta, M Arevalo, C Charbonnier, C Luible-Bär, M A Bueno, R M Rossi</i>	
PARAMETRIC MODELLING DESIGN APPLIED TO WEFT KNITTED SURFACES AND ITS EFFECTS IN THEIR PHYSICAL PROPERTIES	1106
<i>N P Oliveira, L Maciel, A P Catarino, A M Rocha</i>	
SIMULATION OF THE PILE LOOP FOR TERRY WOVEN FABRICS	1112
<i>E Oner, G Durur, B Sirin</i>	
EVALUATION AND OPTIMIZATION OF FOOTWEAR COMFORT PARAMETERS USING FINITE ELEMENT ANALYSIS AND A DISCRETE OPTIMIZATION ALGORITHM	1117
<i>P Papagiannis, P Azariadis, P Papanikos</i>	
PREDICTING COMPACT YARN'S IPI FAULTS BY USING HVI FIBER PROPERTIES	1123
<i>M B Üzümcü, H Kadoglu</i>	
INVESTIGATION THE EFFECT OF WEAVE REPEAT ON WOVEN FABRIC TEXTURE CHARACTERIZATION USING SPARSE REPRESENTATION	1128
<i>Y Wu, J Wang, Z Zhan, L Q Li</i>	
COMPREHENSIVE EVALUATION OF GARMENT ASSEMBLY LINE WITH SIMULATION	1134
<i>Y Xu, S Thomassey, Y Chen, X Zeng</i>	

FASHION, DESIGN AND GARMENT INDUSTRY

ANTHROPOMETRY FOR CHILDREN'S CLOTHING: DIFFICULTIES AND LIMITATIONS.....	1140
<i>G Bezerra, M A Carvalho, M A V Rocha, B Xu</i>	
THE EFFECTS OF FABRIC TYPE, FABRIC WIDTH AND MODEL TYPE ON THE COST OF UNIT RAW MATERIAL IN TERMS OF APPAREL	1146
<i>H Bilgiç, P Duru Baykal</i>	
CREATING A BUSINESS MODEL FROM THE TRADITIONAL TO GLOBAL FASHION: THE REGIONAL VIANESA COSTUME AS INSPIRATION	1152
<i>A C Broega, E Gonçalves, R Ribeiro</i>	
DEPENDENT SENIORS GARMENT DESIGN	1159
<i>A L Caldas, M A Carvalho, H P Lopes</i>	
ANTHROPOMETRIC DATA COLLECTION OF PORTUGUESE CHILDREN USING 3D BODY SCANNING: CONSIDERATIONS ABOUT THE SCANNING BOOTH.....	1165
<i>R De Campos, M A Carvalho, H P Lopes, B Xu</i>	
SIZING FOR THE APPAREL INDUSTRY USING STATISTICAL ANALYSIS – A BRAZILIAN CASE STUDY	1171
<i>C H Capelassi, M A Carvalho, C El Kattel, B Xu</i>	
CLASSIFICATION OF MALE LOWER TORSO FOR UNDERWEAR DESIGN.....	1176
<i>Z Cheng, V E Kuzmichev</i>	
THE CAL: COGNITIVE, APPERCEPTIVE AND REPRESENTATIVE ASPECTS OF FASHION DESIGN – SIDE NOTE TO NEUROAESTHETIC THEORY	1181
<i>Edit Csanák</i>	
ROMANIAN TRADITIONAL MOTIF - ELEMENT OF MODERNITY IN CLOTHING	1188
<i>L Doble, O Stan, M D Suteu, A Albu, G Bohm, A Tsatsarou-Michalaki, E Gialinou</i>	
ANALYSING THE CONSUMER BEHAVIOUR AND THE INFLUENCE OF BRAND LOYALTY IN PURCHASING SPORTSWEAR PRODUCTS.....	1193
<i>N Erdumlu, C Saricam, M Tufekyapan, M Cetinkaya, Ac Donmez</i>	
SHOWROOM10: GREEK DESIGNERS SHOWROOM.....	1198
<i>E Evgeneiadou</i>	
AN INVESTIGATION INTO CREATIVE DESIGN METHODOLOGIES FOR TEXTILES AND FASHION.....	1204
<i>Alison Gault</i>	
AN INVESTIGATION OF APPLICATION OF THE GOLDEN RATIO AND FIBONACCI SEQUENCE IN FASHION DESIGN AND PATTERN MAKING	1210
<i>Z I Kazlacheva</i>	
EFFECT OF BUST LINE POSITION ON APPEARANCE OF UPPER GARMENT	1216
<i>K. O. Kim, M. Sakaguti, M. Takatera</i>	

TROUSSEAU: ECONOMIC AND DESIGN ASPECTS FROM THE SECOND HALF OF 20TH CENTURY IN BRAZIL	1220
<i>M C Laktim, A M Giacomini, M C Silva-Santos, H N Santos, C Borelli, J Baruaque-Ramos</i>	
MOTION-ORIENTED 3D ANALYSIS OF BODY MEASUREMENTS	1228
<i>C Loercher, S Morlock, A Schenk</i>	
INDIVIDUAL 3D MEASUREMENTS OF END USERS TO PERSONALIZE WORK WEAR CLOTHING	1233
<i>E Mielicka, L Napieralska, I Jasinska, V Jarzyna</i>	
TRADITIONAL, FASHION AND NEW PERSPECTIVE ON FASHION TOURISM	1241
<i>Z Montazer, F Zare Bidoki</i>	
A SLOW FASHION DESIGN MODEL FOR BLUEJEANS USING HOUSE OF QUALITY APPROACH	1246
<i>B Nergis, C Candan, S Sarisaltik, N Seneloglu, R Bozuk, K Amzayev</i>	
THE INTERCONNECTED FASHION INDUSTRY - AN INTEGRATED VISION	1252
<i>E Papahristou, P Kyratsis, G Priniotakis, N Bilalis</i>	
DESIGN OF AN INCLUSIVE & INTERACTIVE EDUCATIONAL TEXTILE TOY	1262
<i>C Pereira, J Cunha</i>	
FASHION SHOWCASES DESIGN: PERCEPTIONS OF THE SHOWCASE IN THE BRAZILIAN POPULAR MARKET	1268
<i>S S D Pinto, J Cunha, J Quental, C Buhamra</i>	
VARYING FABRIC DRAPE BY 3D-IMPRINTED PATTERNS FOR GARMENT DESIGN	1274
<i>T Spahiu, S Fafenrot, N Grimmelsmann, E Piperi, E Shehi, A Ehrmann</i>	
DETERMINATION OF CONSUMER AWARENESS ABOUT SUSTAINABLE FASHION	1280
<i>C Saricam, N Erdumlu, A Silan, B L Dogan, G Sonmezcan</i>	
STYLE IN KNITTED TEXTILES AND FASHION	1286
<i>M Štemberger, A Pavko-Cuden</i>	
FASHION IN THE GOLDEN AGE OF YUGOSLAVIAN 20TH CENTURY TEXTILE AND CLOTHING INDUSTRY	1290
<i>T Todorovic, A Pavko-Cuden</i>	
LIFE CYCLE DESIGN AND DESIGN MANAGEMENT STRATEGIES IN FASHION APPAREL MANUFACTURING	1296
<i>R Tutia, Fd Mendes, A Ventura</i>	
INTERPRETATION OF CLOTHING HERITAGE FOR CONTEMPORARY TOURISM	1303
<i>J Vilman Proje, M Bizjak</i>	
NEW DATABASE FOR IMPROVING VIRTUAL SYSTEM "BODY-DRESS"	1308
<i>J Q Yan, S C Zhang, V E Kuzmichev, D C Adolphe</i>	

COMFORT SCIENCE

SUBJECTIVE EVALUATION OF THE COMFORT OF POPULAR DENIM: ELABORATION AND VALIDATION OF THE THE DATA	1314
<i>I Braga, M J Abreu, M Oliveira</i>	
THERMAL COMFORT OF DUAL-CHAMBER SKI GLOVES	1320
<i>F Dotti, M Colonna, A Ferri</i>	
MOISTURE MANAGEMENT PROPERTIES OF CUPRO KNITTED FABRICS	1326
<i>G Durur, E Oner, G Gunduz</i>	
HEAT AND MOISTURE TRANSPORT OF SOCKS	1331
<i>P Komárková, V Glombíková, A Havelka</i>	
DESIGN OF A LIGHT WEIGHT FABRIC FROM NATURAL CELLULOSIC FIBERS WITH IMPROVED MOISTURE RELATED PROPERTIES	1337
<i>M. Kucukali Ozturk, O. B. Berkalp, B. Nergis</i>	
DESIGN OF A THERMAL WAIST-PAD	1343
<i>S Kursun Bahadir, U K Sahin, H Acikgoz Tufan</i>	
INFLUENCE OF TEXTILE PROPERTIES ON THERMAL COMFORT	1350
<i>A Marolleau, F Salaun, D Dupont, H Gidik, S Ducept</i>	
THE EVALUATION OF (SOCIAL-)PSYCHOLOGICAL COMFORT IN CLOTHING, A POSSIBLE APPROACH	1356
<i>L L Matté, A C Broega</i>	
INFLUENCE OF FLOCK COATING ON BENDING RIGIDITY OF WOVEN FABRICS	1362
<i>O Ozdemir, M O Kesimci</i>	

DEVELOPMENT OF A METHOD FOR RATING CLIMATE SEAT COMFORT	1366
<i>M Scheffelmeier, E Classen</i>	
EVALUATING THE EFFECT OF SPINNING SYSTEMS ON THERMAL COMFORT PROPERTIES OF MODAL FABRICS	1372
<i>I Seçil Aydin, M Kertmen, A Marmarali</i>	
EFFECT OF AIR GAP ON APPARENT TEMPERATURE OF BODY WEARING VARIOUS SIZES OF T-SHIRT	1379
<i>M Takatera, E Uchiyama, C Zhu, Ko Kim, H Ishizawa</i>	
INVESTIGATING COMFORT PROPERTIES OF 3/1 Z TWILL WEAVED DENIM FABRICS	1383
<i>E Tastan Özkan, B Kaplangiray</i>	
INVESTIGATION OF THE EFFECT OF DIFFERENT STRUCTURAL PARAMETERS OF COTTON WOVEN FABRICS ON THEIR AIR PERMEABILITY	1389
<i>E Tastan, M Akgun, A Gurarda, S Omeroglu</i>	
CLASSIFICATION OF SOFT-SHELL MATERIALS FOR LEISURE OUTDOOR JACKETS BY CLO DEFINED FROM THERMAL PROPERTIES TESTING	1393
<i>P Tesinova, P Steklova, T Duchacova</i>	
FTT COMFORT INDICES OF RING-SPUN AND AIR-JET KNITTED FABRICS WITH POST-TREATMENTS	1398
<i>S Vasile, B Malengier, A De Raeve, A Binti Haji Musa</i>	

ECOLOGICAL AND ENVIRONMENTAL TEXTILES, RECYCLING AND LIFE CYCLE ANALYSIS

TOWARDS REINFORCEMENT SOLUTIONS FOR URBAN FIBRE/FABRIC WASTE USING BIO-BASED BIODEGRADABLE RESINS	1405
<i>Pramod Agrawal, Alina Hermes, Solaf Bapeer, Anton Luiken, Gerrit Bouwhuis, Ger Brinks</i>	
A PRELIMINARY STUDY ON PUNCTURE RESISTANCES OF TOP AND BOTTOM LAYERS OF MULTI-LAYERED NEEDLEPUNCHED NONWOVEN GEOTEXTILES	1411
<i>G Alan, M Tercan</i>	
SOCIAL AND ECONOMIC IMPORTANCE OF TEXTILE REUSE AND RECYCLING IN BRAZIL	1417
<i>J Baruque-Ramos, M C Amaral, M C Laktim, H N Santos, F B Araujo, W F Zonatti</i>	
INVESTIGATION OF ECO-FRIENDLY CASEIN FIBRE PRODUCTION METHODS	1426
<i>M C Bier, S Kohn, A Stierand, N Grimmelsmann, S V Homburg, A Rattenholl, A Ehrmann</i>	
APPLICATION OF RECYCLED FIBRES AND GEOTEXTILES FOR THE STABILISATION OF STEEP SLOPES	1430
<i>J Broda, J Grzybowska-Pietras, G Nguyen, A Gawlowski, R Laszczak, S Przybylo</i>	
TEXTILE SUSTAINABILITY: REUSE OF CLEAN WASTE FROM THE TEXTILE AND APPAREL INDUSTRY	1436
<i>A C Broega, C Jordão, S B Martins</i>	
NONWOVEN PRODUCTION FROM AGRICULTURAL OKRA WASTES AND INVESTIGATION OF THEIR THERMAL CONDUCTIVITIES	1442
<i>M N Duman, E D Kocak, N Merdan, I Mistik</i>	
SILK INDUSTRY AND CARBON FOOTPRINT MITIGATION	1449
<i>A M Giacomini, J B Garcia Jr, W F Zonatti, M C Silva-Santos, M C Laktim, J Baruque-Ramos</i>	
HEMP FIBER FOR FURNISHING APPLICATIONS	1455
<i>D D Lamberti, A K Sarkar</i>	
FASHION GARMENT MANUFACTURING – FGM AND CYCLABILITY THEORY	1464
<i>F D Mendes, M C L Dos Santos</i>	
PRINTING OF COTTON WITH ECO-FRIENDLY, RED ALGAL PIGMENT FROM GRACILARIA SP.	1471
<i>S Moldovan, M Ferrandiz, E Franco, E Mira, L Capablanca, M^a Bonet</i>	
THE LIFE CYCLE ASSESSMENT OF CELLULOSE PULP FROM WASTE COTTON VIA THE SAXCELL™ PROCESS	1477
<i>Jens Oelerich, Marijn Bijleveld, Gerrit H Bouwhuis, Ger J Brinks</i>	
INVESTIGATION SOME CHARACTERISTICS OF CHICKEN FEATHER'S RACHIS	1482
<i>N Pasayev, S Kocatepe, N Maras, M Soylak, M Erol</i>	
MULTIPLE FACES OF CONTEMPORARY HAND KNITTING	1490
<i>A Pavko-Cuden</i>	
ASSESSMENT OF TOXICITY OF RAW TEXTILE WASTEWATER AND AFTER ITS REUSE	1496
<i>Jorge Marcos Rosa, Suely Ivone Borrely, Maurício De Campos Araújo</i>	

PHYSICAL PROPERTIES OF RECYCLED PET NON-WOVEN FABRICS FOR BUILDINGS	1503
<i>S Üstiin Çetin, A E Tayyar</i>	
FASHION DESIGN SOLUTIONS FOR ENVIRONMENTALLY CONSCIOUS CONSUMERS	1509
<i>M Wagner, Y Chen, A Curteza, S Thomassey, A Perwuelz, X Zeng</i>	
STUDY ON PIGMENT DYEING OPPORTUNITIES OF POLYESTER AND COTTON-MIX FIBER	1515
<i>I A Nabieva, M B Shamukimova, R M Artikboeva</i>	

TEXTILE ECONOMY, TEXTILE SUPPLY CHAIN MANAGEMENT

PROCESS ANALYSIS OF AN IN STORE PRODUCTION OF KNITTED CLOTHING	1522
<i>D Buecher, M Kemper, B Schmenk, Y-S Gloy, T Gries</i>	
THE FUTURE OF TEXTILE PRODUCTION IN HIGH WAGE COUNTRIES	1527
<i>M Kemper, Y-S Gloy, T Gries</i>	
COMPARATIVE ANALYSIS OF SUSTAINABLE CONSUMPTION AND PRODUCTION IN VISEGRAD REGION - CONCLUSIONS FOR TEXTILE AND CLOTHING SECTOR	1533
<i>M Koszewska, J Militki, P Mizsey, R Benda-Prokeinova</i>	
SIMULATION MODELLING OF CENTRAL ORDER PROCESSING SYSTEM UNDER RESOURCE SHARING STRATEGY IN DEMAND-DRIVEN GARMENT SUPPLY CHAINS	1540
<i>K Ma, S Thomassey, X Zeng</i>	
OPERATIONS MANAGEMENT TOOLS TO BE APPLIED FOR TEXTILE	1545
<i>A Maralcan, I Ilhan</i>	
COMPETITIVE STRATEGIES IN FASHION INDUSTRIES: PORTUGUESE FOOTWEAR INDUSTRY	1551
<i>A D Marques, G Guedes, F Ferreira</i>	
SUSTAINABLE VALUE CREATION THROUGH NEW INDUSTRIAL SUPPLY CHAINS IN APPAREL AND FASHION	1557
<i>R Pal, E Sandberg</i>	

INNOVATION AND ENTREPRENEURSHIP

OKG: CREATING AND DEVELOPING AN INNOVATIVE CLOTHING SERVICE	1563
<i>J P Bernardes, M Nogueira</i>	
POSTCARDS FROM THE EDGE: TRASH-2-CASH COMMUNICATION TOOLS USED TO SUPPORT INTER-DISCIPLINARY WORK TOWARDS A DESIGN DRIVEN MATERIAL INNOVATION (DDMI) METHODOLOGY	1569
<i>R Earley, R Hornbuckle</i>	
INNOVATION, ENTREPRENEURSHIP AND TEXTILES	1575
<i>A Blanton Godfrey, S Pourmojib</i>	
E-LEARNING FOR TEXTILE ENTERPRISES INNOVATION IMPROVEMENT	1581
<i>M Blaga, R Harpa, I R Radulescu, Z Stepjanovic</i>	

MODERN TEXTILE EDUCATION AND TRAINING

E-LEARNING AND BLENDED LEARNING IN TEXTILE ENGINEERING EDUCATION: A CLOSED FEEDBACK LOOP APPROACH	1587
<i>A Charitopoulos, S Vassiliadis, M Rangoussi, D Koulouriotis</i>	
RESUME, EULOGY, EDUCATION AND FUTURE	1595
<i>A Demšar, A Aneja</i>	
WHY EDUCATION CAN FOSTER SUSTAINABILITY IN THE FASHION MARKET	1601
<i>A-M Grundmeier</i>	
COMPARATIVE STUDY ON FASHION & TEXTILE DESIGN HIGHER EDUCATION SYSTEM, PAKISTAN VS UK	1607
<i>Umer Hameed, Saima Umer</i>	
WORK PROCESS AND TASK-BASED DESIGN OF INTELLIGENT ASSISTANCE SYSTEMS IN GERMAN TEXTILE INDUSTRY	1617
<i>M Löhner, N Ziesen, A Altepost, M Saggiomo, Y S Gloy</i>	
EDUCATION - EMPLOYMENT PARTNERSHIP FOR VET IN THE FASHION SECTOR	1622
<i>M Ursache, M L Avadanei, D S Ionesi, E Loghin</i>	

DEVELOPING INNOVATIVE TRAINING PROTOCOL FOR EXPORT PERSONNEL IN THE FASHION INDUSTRIES THROUGH "EXTRO SKILLS" PROJECT	1630
<i>M Ursache, M L Avadanei, L Ciobanu, M C Loghin, D S Ionesi, E Loghin</i>	

LEATHER AND SHOES INDUSTRY

FEMALE HIGH HEEL SHOES: A STUDY OF COMFORT.....	1634
<i>A C Broega, M Righetto, R Ribeiro</i>	
VARIANCE OF FOOT BIOMECHANICAL PARAMETERS ACROSS AGE GROUPS FOR THE ELDERLY PEOPLE IN ROMANIA.....	1640
<i>D C Deselnicu, A M Vasilescu, G Militaru</i>	
MULTIFUNCTIONAL DESIGN OF FOOTWEAR FOR HOT ENVIRONMENT CONDITION	1646
<i>Z. Dragevic, E. Vujasinovic, A. Hursa Sajatovic</i>	
THE PROBLEMS OF PROFESSIONAL TRAINING OF PRACTICE-ORIENTED SPECIALISTS FOR SMALL ENTERPRISES OF FOOTWEAR AND LEATHER PRODUCTION INDUSTRIES IN UZBEKISTAN.....	1652
<i>M U Ilkhamova, J K Gafurov, U M Maksudova, S Vassiliadis</i>	
LEARNING PROCESS IN FASHION DESIGN STUDENTS: LINK WITH INDUSTRY AND SOCIAL MEDIA	1656
<i>A D Marques, A Moschatou</i>	
A NEW APPROACH TO IMPLEMENT A CUSTOMIZED ANATOMIC INSOLE IN ORTHOPAEDIC FOOTWEAR OF LOWER LIMB ORTHOSIS	1661
<i>J Peixoto, P Flores, A P Souto</i>	
RESEARCH OF FOOTWEAR LINING MATERIALS THERMOCONDUCTIVE PROPERTIES	1667
<i>U Maksudova, M Ilkhamova, N Mirzayev, D Pazilova</i>	
Author Index	