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Part II (Table of contents)

Part III (Executive Summary)

This deliverable gives an overview of available training materials in Europe on smart and functional textiles.

It is based on the information that has been collected in the framework of the 2BFUNTEX project.

The information has been collected, screened and listed.

It contains a summary and contact information (as provided by the authors).

Part IV (Full description of the deliverable content)

1 Dynamic ASAM

Type of Material: Demonstrator

Summary:

Business Drivers The apparel and textiles sector is emerging from a period of decline into an era where some ‘Reshoring’ of manufacturing, which has until recently been outsourced to low labour cost countries, is now taking place. This Reshoring of manufacturing brings with it a need to upskill staff in the area of New Product Development. A recent survey of sector companies conducted in Greater Manchester revealed skills shortages in management development, staff retention, education and knowledge transfer. Headline Activity This proposal responds to the skills needs/barriers within the SME Textile Sector by developing a sector specific high quality bespoke training programme written in partnership with key employers and industry trainers. NWTexnet will use the funding to respond to the emerging skills issues in the priority area of Textiles, Clothing & Footwear. This innovative solution involving a consortium of employers will encourage ownership, address participation and identify preferred methods of delivery of the training. Reshoring requires more attention to high-value products and the protection of intellectual property, which is reflected in the need for effective evaluation and selection of new products. The goal of Dynamic Portfolio Management is shorter iterations of the New Product Development Selection (NPD) cycle to facilitate faster decision-making so that the best products are continually introduced into it the market. New research in NPD suggests that the products and the business environment are dynamic and requires investment in different methods for identifying change and new selection rules and decision-making protocols in manufacturing once a change has been identified.

This training material is available in English

Contact person: Steve Kay; e-mail: steve.kay@nwtexnet.co.uk

This course is meant for SME’s, Other

2 Possibilities of use of polyester composites with textile reinforcing fabrics for environmentally friendly ground transport freight vehicles springs

Type of Material: Electronic

Summary:

This material contains an outline of a comprehensive lecture presented to researchers, PhD. students, industrial participants and other interested persons in one of the special technical workshops organised in Czech Republic by the Czech Society for Mechanics, technical group "Mechanics of Composite Materials and Structures" on regular basis. The main aim of the workshops is to promote the use of different types of composite materials in various industrial areas. Venue of the workshop was Institute of Theoretical and Applied Mechanics of the Academy of Sceinces of the Czech Republic in Prague (http://www.itam.cz). The presented lecture was dedicated to demonstration of favourable dynamic properties of springs manufactured from polymer composites reinforced with glass textile fabrics. In the introduction of the lecture and in concluding remarks, 2BFunTex databasis was strongly recommended to be visited and instructions, how to join the databasis, were provided.

This training material is available in Czech

Contact person: Ing. Ivo Cerny, PhD.; e-mail: Ivo.Cerny@seznam.cz

This course is meant for Researchers, PhD students, SME’s, Industry

More info can be found on the training material site.

3 RECYCLING OF TEXTILE MATERIALS

Type of Material: Electronic

Summary:

This training course has been developed within the FP7 Coordination Action 2BFUNTEX.

This training material is available in English

Contact person: Bojana Voncina; e-mail: Bojana.voncina@um.si

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

4 Nanomaterials and Nanotechnologies:Colloidal and Interfacial Aspects

Type of Material: Electronic

Summary:

This training course has been developed within the FP7 Coordination Action 2BFUNTEX.

This training material is available in English

Contact person: Victoria Dutschk; e-mail: v.dutschk@utwente.nl

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

5 PROTECTIVE FUNCTIONAL TEXTILES

Type of Material: Electronic

Summary:

This training course has been developed within the FP7 Coordination Action 2BFUNTEX.

This training material is available in English

Contact person: E. Perrin Akçakoca Kumbasar; e-mail: perrin.akcakoca@ege.edu.tr

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

6 ELECTROSPINNING OF NANOFIBERS AND THEIR APPLICATIONS

Type of Material: Electronic

Summary:

This training course has been developed within the FP7 Coordination Action 2BFUNTEX.

This training material is available in English

Contact person: Hale Karakas; e-mail: karakashal@itu.edu.tr

This course is meant for Researchers, BSc students, Master students, PhD students, Industry

7 SUSTAINABLE TEXTILES

Type of Material: Electronic

Summary:

This training course has been developed within the FP7 NMP Coordination Action 2BFUNTEX.

This training material is available in English

Contact person: Antonela Curteza; e-mail: acurteza@gmail.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

8 PEER LEARNING SCENARIOS on Footwear CAD

Type of Material: Electronic

Summary:

Analysis of the mix of skills and competencies to be aquired by tutors/trainers/teachers in Footwear CAD . The investigation is performed for the INGA 3D partner countries: RO, ES, PT and UK .

This training material is available in English

Contact person: Aura Mihai; e-mail: amihai@tex.tuiasi.ro

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

9 Introduction to electrospinning

Type of Material: Electronic

Summary:

An up-to-date lecture to introduce the electrospinning process. It includes a brief historical excursus, figures of publications and patents, description of the fibre-forming process and process parameters, examples of electrospun materials and applications, a detailed description of the phases of electrospinning from the theoretical and experimental point of view and nanofibre morphologies. (Low resolution because of the size limit)

This training material is available in English

Contact person: Alessio Varesano; e-mail: a.varesano@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students

10 The quality of garment production

Type of Material: Hardcopy

Summary:

In the book the questions of providing and an assessment of quality and questions of quality management are considered comprehensively. Standard and metrological ensuring of quality are presented as components of production technical regulation. Types and methods of technical control are described, features of carrying out technical control are described at different production phases of garments. National standards and control systems of quality (series of ISO 9000) unified with the international standards. The basic principles of construction and function of a quality control system at different stages of production life cycle are stated.

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students, SME’s, Industry

11 Theory and practice of research in design

Type of Material: Hardcopy

Summary:

The manual provides practical techniques and tips that help to perform effectively scientific work in design

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students

12 Geometry of clothes surfaces

Type of Material: Hardcopy

Summary:

The book is recommended for students of higher educational institutions. The work devoted to modeling of garment surface with use of applied geometry. Particular attention is given to computer clothes design using modern methods of computer technologies. It is interesting to note that in one section of the book presents the fundamentals of clothes designing for priests

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students

13 Computer design of clothes

Type of Material: Hardcopy

Summary:

In manual the recommendation concerning design of clothes with using of modern compute system is given

This training material is available in Ukrainian

Contact person: ; e-mail: vlasenko@ekma.kiev.ua

This course is meant for BSc students, Master students, Industry

14 Methods of workwear design

Type of Material: Hardcopy

Summary:

The approaches to the design of effective protection workwear of different industries are considered

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for BSc students, Master students, PhD students, Industry

15 Fashion and clothes. Fundamentals of design and clothes manufacturing

Type of Material: Hardcopy

Summary:

– The basic terms related to the concept of “clothes and fashion” are considered. – The classification of modern clothes is proposed. – The factors that influence on development of modern clothes assortment are considered. – The modern clothes styles, variety of clothes formed in the XX-XXI centuries are considered. – The historical names of Ukrainian folk costumes are present.

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students, SME’s, Industry

16 Fashion and clothes. Fundamentals of design and clothes manufacturing

Type of Material: Hardcopy

Summary:

– The basic terms related to the concept of “clothes and fashion” are considered. – The classification of modern clothes is proposed. – The factors that influence on development of modern clothes assortment are considered. – The modern clothes styles, variety of clothes formed in the XX-XXI centuries are considered. – The historical names of Ukrainian folk costumes are present.

This training material is available in Ukrainian

Contact person: Viktoriia Vlasenko; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students, SME’s, Industry

17 Dimensional and “Sandwich” Knits

Type of Material: Hardcopy

Summary:

This university course presents spacer weft and warp fabrics and articles, their properties and peculiarities of manufacture, machines for knitting, requirements for finishing of dimensional and sandwich knits. Main aim is to teach thorough understanding of structure, properties, technology, machines, the area of using of dimensional and sandwich knits. The content of this course is: Fibres, threads and equipment for dimensional and sandwich knits Types, structure and properties of weft and warp dimensional knits Types, structure and properties of weft, warp and other sandwich knits The weft knitting technology of dimensional fabrics The warp knitting technology of dimensional fabrics The weft knitting technology of sandwich fabrics The warp knitting technology of sandwich fabrics The other technology of sandwich fabrics The area of using of dimensional and sandwich knits The problems of finishing of knitted articles The finishing of textile articles for special purposes

This training material is available in

Contact person: Assoc.Prof. Daiva Mikučionienė; e-mail: daiva.mikucioniene@ktu.lt

This course is meant for

More info can be found on the training material site.

18 Textiles for Hygiene and Infection Control

Type of Material: Electronic, Hardcopy

Summary:

Understanding and improving hygiene and healthcare products is essential for improving infection prevention. Continuing Woodhead Publishing's series of specialised medical textile books, Textiles for hygiene and infection control provides readers with the latest developments in healthcare materials for hygiene and infection applications. Part one offers an insight into design and production techniques for hygiene textiles. Chapters discuss nanotechnology and it's applications in hygiene textiles, knitted spacer fabrics, innovative and sustainable packaging and biodegradable hygiene products. Part two explores design and production techniques for infection control textiles. Chapters examine micro-organisms, infection and the role of textiles, the creation of barrier textiles through plasma processing and methods for ensuring fabrics survive sterilisation. Part three concludes by investigating the variety of available hygiene and infection control products. Chapters consider washable textile-based absorbent products for incontinence, coated textiles for skin infections and antimicrobial treatments of textiles for hygiene and infection control applications from an industrial perspective. Textiles for hygiene and infection control is an essential reference for manufacturers, designers, engineers and producers of hygiene and infection control products. It is also a useful tool for medical scientists, surgeons and nurses.

This training material is available in English

Contact person: Brian J. McCarthy; e-mail: brianmccarthy@technitex.org

This course is meant for Researchers, SME's, Industry

More info can be found on the training material site.

19 NANO-COMPOSITES &CHALLENGING ISSUES FOR THE USE OF NANO PARTICLES IN POLYESTER FIBRE SPINNING

Type of Material: Electronic

Summary:

NANO-COMPOSITES & CHALLENGING ISSUES FOR THE USE OF NANO PARTICLES IN POLYESTER FIBRE SPINNING - INTRODUCTION OF KORTEKS YARN - Functional Polyester Products - Nano-Composites and Textile Applications - Nano-Particles for Fibres - Properties for Textiles - Expertise necessary for better interaction - Nano-Particles - DispersionandDistributrion - Masterbatch Feeding - Dispersionin Masterbatch - POLYESTER SPINNING - Effectingparametersof spinning - Windingissues - Textile Processes - Dispersionon Fiber

This training material is available in English

Contact person: Mutlu Sezen R&D Manager; e-mail: mutlu.sezen@zorlu.com

This course is meant for Researchers, Master students, PhD students, SME’s, Industry, Other

More info can be found on the training material site.

20 THE INFLUENCE OF ULTRASOUND POWER TO SURFACE FUNCTIONALIZATION OF POLYESTER FABRIC

Type of Material: Electronic

Summary:

Modifications of poly(ethylene-terephthalate) fabric by ultrasound and nanoparticles of natural zeolite change the fabric surface properties are described. The change in chemical composition did not occur but it led to PET fabric functionalization.The implementation of zeolite to polyester fabric is higher if the ultrasound power applied is higher. Therefore, the fabric whiteness is slightly lower, but sorption of optical brightener is significantly higher what improves fabric aesthetic appearance yielding a better absorption of the surfaces in wet finishing and make these fabrics more comfortable. Optical brightening of polyester fabric is necessary to achieve fabric whiteness as well as UV protection. Natural zeolite scatters the UV-R resulting in lower UV-A and UV-B transmission, increasing UV protection significantly, regardless the applying method.

This training material is available in English

Contact person: Prof. AM Grancarić; e-mail: amgranca@ttf.hr

This course is meant for

21 INTERFACE PHENOMENA OF CATIONIZED COTTONWITH EPTAC

Type of Material: Electronic

Summary:

The modified cotton retains all the beneficial properties of mercerized cotton with a change of surface charge that ensures further quality improvement. It was found that cationization with short chain cationic compounds completely change the system dyestuff-cotton fiber and do not obey any known law, which indicates the necessity of further investigations of such modified cotton. Except the above, this modification presents an exceptional potential for environmental disposal of waste as well, since such modified cotton fully adsorbs anionic dyestuff.

This training material is available in English

Contact person: Prof. AM Grancarić; e-mail: amgranca@ttf.hr

This course is meant for Researchers, BSc students, Master students, PhD students

22 Nanoparticles of Activated Natural Zeolite on Textiles forProtection and Therapy

Type of Material: Electronic

Summary:

Activated natural zeolite applied on textile: (i) contributes to UV protection by scattering UV radiation and shows synergism with FWA's what leads to excellent for cotton and very good UV protection for polyester; (ii) added to azalides in textile finishing, increase the efficiency of antimicrobial action to both - Gram positive as well as Gram negative bacteria. Textile and clothing with activated zeolite can protect the skin from microbes and UV radiation, showing effects on the healing process in the skin wounds and therapy effect against different shin diseases like, psoriasis, cancer etc.

This training material is available in English

Contact person: Prof. AM Grancarić; e-mail: amgranca@ttf.hr

This course is meant for Researchers

23 Personal Protective Equipment

Type of Material: Hardcopy

Summary:

The seminar is dedicated to PPE producing companies and covers aspects on testing and certification of PPE in accordance to European standards. The seminar is dealing with general requirements for testing and certification of PPE and protective clothing for selected applications (protective clothing for workers exposed to heat and for use in welding (ISO 11611 / ISO 11612 / ISO 14116), warning and weather protective clothing (EN 471 / EN 343 / EN 14058), chemical protective clothing (EN 13034), protective clothing with antistatic properties (EN 1149 series), protective clothing against thermal risks of an electrical arc (IEC 61482-series).

This training material is available in German

Contact person: Hendrik Beier; e-mail: hendrik.beier@stfi.de

This course is meant for SME’s, Industry

More info can be found on the training material site.

24 Nonwovens

Type of Material: Hardcopy

Summary:

This seminar is a special training for the nonwoven producing and nonwoven processing industry as well. Information on textile fibres, production and finishing methods for nonwovens as well as testing and certification of nonwovens and technical textiles are given.

This training material is available in German

Contact person: Wolfgang Schilde; e-mail: wolfgang.schilde@stfi.de

This course is meant for SME's, Industry

More info can be found on the training material site.

25 Geotextiles/geosynthetics for civil engineering and traffic route engineering

Type of Material: Hardcopy

Summary:

The training material introduces the requirements to geotextiles/geosynthetics for civil engineering and traffic route engineering. Different manufacturing methods for geotextiles are presented. The latest developments in the field of geotextiles done by STFI are presented.

This training material is available in German

Contact person: Reinhard Helbig; e-mail: reinhard.helbig@stfi.de

This course is meant for SME's, Industry

More info can be found on the training material site.

26 Mechanical and fatigue properties of composite materials using glass fibre textiles

Type of Material: Hardcopy

Summary:

Syllabus of lecture given in "Summer school on fatigue of materials" organized by University of Žilina in Slovakia

This training material is available in Czech

Contact person: Ivo Černý; e-mail: Ivo.Cerny@seznam.cz

This course is meant for Researchers, PhD students, SME’s, Industry

More info can be found on the training material site.

27 Benefits and problems of applications of polymer composites using glass textiles in dynamically and fatigue loaded machinery components

Type of Material: Hardcopy

Summary:

Syllabus of lecture presented in "Summer school of fatigue of materials" organized by the University of Zilina, Slovakia

This training material is available in Czech

Contact person: Ivo Černý; e-mail: Ivo.Cerny@seznam.cz

This course is meant for Researchers, PhD students, Industry

More info can be found on the training material site.

28 Grafting e coating

Type of Material: Electronic

Summary:

Description of grafting and coating processes in textile industry and recent researches.

This training material is available in Italian

Contact person: Alessio Varesano; e-mail: a.varesano@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

29 Nanofibre: processi e applicazioni

Type of Material: Electronic

Summary:

Applications of nanofibres in textile field with a focus on electrospinning, in particular the lecture describes the phases of the electrospinning process, the mechanism of nanofibres formation and their defects (morphology), process parameters and their influence on morphology, collecting systems, multi-nozzle plants for large scale production and related problems (divergence of jets, processing stability, collection, etc.).

This training material is available in Italian

Contact person: Alessio Varesano; e-mail: a.varesano@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students

30 Intrinsically conducting polymers on textiles

Type of Material: Electronic

Summary:

Applications of intrinsically conducting polymers on textile materials: electrical conduction and measurements, conducting polymers, deposition processes and synthesis, textile substrates, applications, performances and fastness/stability.

This training material is available in English

Contact person: Alessio Varesano; e-mail: a.varesano@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students

31 Electrospinning process and its application in the textile field

Type of Material: Electronic

Summary:

Description of the electrospinning process for the production of nanofibres. Description of the applications of electrospun nanofibres in the textile field.

This training material is available in English

Contact person: Giorgio Mazzuchetti; e-mail: g.mazzuchetti@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

32 Fibre tessili

Type of Material: Electronic

Summary:

A brief overview on the most used textile fibres.

This training material is available in Italian

Contact person: Cinzia Tonetti; e-mail: c.tonetti@bi.ismac.cnr.it

This course is meant for SME’s, Industry, Other

33 ETICHETTATURA PRODOTTI TESSILI

Type of Material: Electronic

Summary:

Labelling of textile products, including the reference to the EU, Italian (UNI) and international (ISO, BISFA, IWTO) legislation, with some examples. Descritpion of identification and quantification standards and unconventional (innovative) test methods.

This training material is available in Italian

Contact person: Cinzia Tonetti; e-mail: c.tonetti@bi.ismac.cnr.it

This course is meant for SME’s, Industry, Other

34 Tecniche di misurazione delle caratteristiche fisiche e meccaniche dei tessuti

Type of Material: Electronic

Summary:

Definition of comfort and handle. Evaluation of comfort and handle by physical testing, heat and vapour transmission, air permeability. Description of Kawabata evaluation system, Skin model, etc.

This training material is available in Italian

Contact person: Giorgio Mazzuchetti; e-mail: g.mazzuchetti@bi.ismac.cnr.it

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

35 Cenni di ausiliari e nobilitazione tessile

Type of Material: Electronic

Summary:

Lecture on textile finishing and related processes, chemicals and testing.

This training material is available in Italian

Contact person: Claudia Vineis; e-mail: c.vineis@bi.ismac.cnr.it

This course is meant for BSc students, Master students, SME’s, Industry

36 UCCI innovations

Type of Material: Demonstrator, Electronic

Summary:

This training material is available in Ukrainian

Contact person: Oleksandr Tsvietkov; e-mail: O.tsvietkov@gmail.com

This course is meant for

37 Enzymatic preactivation of PET substrate for nano TiO2 photocatalytic systems

Type of Material: Electronic

Summary:

Testing the effect of enzymatic pre-treatment of polyester substrate for the subsequent application of aqueous dispersion of TiO2 nanoparticles. • Effect on physiological parameters • Effect on deposit of particles from a dispersion

This training material is available in English

Contact person: Lenka Martinkova; e-mail: martinkova@inotex.cz

This course is meant for Researchers, Industry, Other

38 Vegetable squalen for production of functional textiles with improved wearing comfort

Type of Material: Electronic

Summary:

Nowadays, R&D activities are focused on the development of innovative technologies based on renewable sources processed by biotechnologies ensuring a reproducible composition and environmental compatibility of materials. A technology for application of amaranth oil for textiles functionalization was developed. This innovative finishing technology is based on utilization of amaranth plant as a source of natural renewable source of terpenic hydrocarbon squalen and other beneficial substances.

This training material is available in English

Contact person: Lenka Martinkova; e-mail: martinkova@inotex.cz

This course is meant for SME’s, Industry, Other

39 Functional textiles for healthcare

Type of Material: Electronic

Summary:

Research and testing new constructions and finishing systems for functional textiles for health sector. • replacement cotton with blend cotton polyester • use of antibacterial treatment • evaluation of economical efficiency

This training material is available in English

Contact person: Martina Janickova; e-mail: janickova@inotex.cz

This course is meant for SME’s, Industry, Other

40 Development of new agrotextiles from renewable sources with controlled lifetime

Type of Material: Electronic

Summary:

Natural fibres comprise an important renewable source for production of technical textile. The use of bio-treatment leads not only to increasing of fibre yield, but also allows to partially eliminate climatic and conditions and seasonal weather fluctuations during retting. The treatment with special enzymatic products can be realized by spraying on the field after harvesting.

This training material is available in English

Contact person: Martina Janickova; e-mail: janickova@inotex.cz

This course is meant for Researchers, Other

41 Introduction to Tribology

Type of Material: Electronic

Summary:

The course is an introduction to Tribology, that can be applied to a lot of sectors, including textile field.

This training material is available in English

Contact person: Amaya Igartua; e-mail: amaya.igartua@tekniker.es

This course is meant for Researchers, SME’s, Industry

42 Textile materials with medical end uses

Type of Material: Hardcopy

Summary:

Textile materials with medical end uses Content/chapters: Introduction 1. General physiology 2. Fibrous polymers with medical application 3. Medical knittings 4. Textile biocompatibility 5. Elements of tissue engineering 6. Stockings with contention for chronic venous insufficiency 7. Textile used in compression therapy 8. Medical dressings 9. Textile implants 10. Antiallergic textiles for contact dermatitis 11. Ocular biomaterials 12. Medical dictionary

This training material is available in Romanian

Contact person: Assoc. Prof. dr. eng. Radu Cezar –Doru; e-mail: rcezar2010@yahoo.com

This course is meant for Researchers, PhD students, SME’s, Industry, Other

43 Functional Textiles - Sustainable Design and Development

Type of Material: Electronic

Summary:

Functional Textiles - Sustainable Design and Development According to J. F. McLennan, sustainable design (also called environmental design, environmentally sustainable design, environmentally conscious design, etc.) is the philosophy of designing physical objects, of shaping the environment and the provided services so as to comply with the principles of social, economic, and ecological sustainability.[1] The philosophy of sustainable design and development of textiles is related to products that are created and produced by taking into consideration both the environmental and social impact they might have throughout their entire life cycle, "carbon footprint" included.[2] Eco textile products imply a number or a combination of aspects such as: are made using organic raw materials, do not involve the use of harmful chemicals and bleaches for dying, are often made from recycled and reused materials, are made to last longer (have a longer life cycle), come from a fair trade – (the workers are paid a fair price and have decent working conditions). Considering the current general context and environment, there is a need to start using sustainable materials and processes. The consumers' awareness regarding the matter of sustainability has risen as well. Overall, the eco or sustainable philosophy states that scientists, researchers, designers, producers and consumers are equally responsible for achieving safe, fair, caring, sustainable and aesthetically pleasing products. Other important strong points of the eco philosophy are the absence of waste and the constant recycling. The sustainable philosophy means that each stage of the life cycle of a textile product, starting with the creation of the raw material and continuing with the spinning, weaving/knitting, tailoring, packaging, transportation and retailing activities, is environmentally friendly. In a nutshell, it is not only about developing, producing and buying eco textiles, but also about reducing consumption. This means that it is more important to buy fewer, more responsible, possibly more expensive products that are used for a longer period of time, than purchasing a large number of less expensive but lower quality products. One of the positive side effects of the current economic and recession context has been a growing awareness of the limited natural resources. This is one of the reasons why people are more anxious than ever to reduce their carbon footprint and protect the earth and also our environment, health and well being. In conclusion, literature suggests that sustainable practices in the textile and apparel industry include mainly: - the use of renewable materials (Joergens, 2006; Poole, Church&Huson, 2009; Solomon & Rabolt, 2004)' - and/or non-harmful materials (Chen & Burns, 2006; Poole et al., 2009), - apply low-impact processes (Allwood, Laursen, Russell, Malvido de Rodrı´quez, & Bocken, 2008; Chen&Burns, 2006; Poole et al., 2009; Solomon&Rabolt, 2004), - promote the reuse or recycling of waste materials (Chen & Burns, 2006; Fletcher, 2008; Joergens, 2006; Poole et al., 2009). 1. McLennan, J. F. (2004), The Philosophy of Sustainable Design 2. http://en.wikipedia.org/wiki/Sustainable_design

This training material is available in English

Contact person: Prof. Antonela Curteza; e-mail: ACurteza@gmail.com

This course is meant for Researchers, Master students, PhD students, SME's, Industry, Other

44 Biomimetic inspiration for functional textiles

Type of Material: Electronic

Summary:

Biomimetic inspiration for functional textiles Biomimetics - is the study of the structure and function of biological systems used as models for the design and engineering of materials and machines. It is widely regarded as being synonymous with biomimicry, biomimesis, biognosis and similar to biologically inspired design (from Wikipedia, the free encyclopedia). Biomimetics is a new science where nature becomes a source of inspiration, providing solutions for human problems, for obtaining added value or creating new products and functionalities. There are many examples of inventions drawing their inspiration from different biological systems. Textiles provide unique opportunities in developing new functionalities by mimicking the nature. The reason lies in the attributes of some textile products that make them more open to biomimetic concepts and inspiration than others. Nature is a never-ending well of surprises. It has been a constant source of inspiration for inventors. More and more researchers and designers are turning to nature for developing "biomimetic textile products" that achieve better performances and functionalities by transposing the wonders of the biological world developed over thousands of years of evolution. So, the importance of “learning from nature” is a prevailing knowledge in each field of science and technology. Nature has created materials, objects and processes that can be observed at both micro and macro levels. This is the reason why the biomimetic research is a rapidly growing field. Its true potential in the development of new and sustainable textiles can only be realized through interdisciplinary researches based on a holistic understanding of nature. Applying biomimicry in research and design can be done in two ways: proceeding from design to nature or vice versa, going from nature to design. There are many examples of inventions drawing their inspiration from biological systems. Today, the range of textiles products developed by the biomimetic approach goes beyond fibers, continuing with camouflage military products, swim suits, smart fabrics, self cleaning textiles, velcro, just to mention some of the most important achievements. Regarding the functionalisation of textiles, for instance, the inspiration can be drawn from the most prominent functions of the boundary layer on a hydrophobic microstructured plant surface (Koch et al. 2009), such as: - transport barrier limitation of uncontrolled water loss, - surface wettability, - anti-adhesive, self-cleaning properties: reduction of contamination, pathogen attack and reduction of attachment/locomotion of insects, - signaling: cues for host–pathogens/insect recognition and epidermal cell development, - optical properties: protection against harmful radiation, - reduction of surface temperature, - mechanical properties: resistance against mechanical stress and maintenance of physiological integrity. Future Trends. The future holds an exciting new world of inventions created by observing nature; textiles are an area of interest that takes the spotlight under such circumstances. The multidisciplinary collaboration of research, biology, chemistry, physics, engineering and others, is required in order to align the textile and garment industry to the futuristic tendencies and developments. It seems that nanotechnology and biotechnology will be the key to unlock the huge potential for biomimicking textiles in the future.

This training material is available in English

Contact person: Prof. Antonela Curteza; e-mail: ACurteza@gmail.com

This course is meant for Researchers, Master students, PhD students, SME’s, Industry, Other

45 e-learning course on Smart Textiles

Type of Material: Electronic

Summary:

The research laboratory GEMTEX of ENSAIT and the Textile Department of Ghent University have joined their training and research skills to make your innovation project a success.Through TRITex, they offer you seminars and e-learning modules on smart textiles. Module 1 on Functional & Smart Textile Materials is now 24/7 online available. Module 1 consists of 2 chapters: Functional Textile Materials and Smart Textile Materials. If you are new to smart textiles, the module offers you a headstart in smart textile materials but it also provides in-depth insight in smart textile technologies for more advanced learners. On top of the e-course, online interaction with experts and participation in seminars/workshops are included in the registration fee. A certificate is awarded after successful completion of tests.

This training material is available in English, French

Contact person: Johanna Louwagie; e-mail: johanna.louwagie@ugent.be

This course is meant for Researchers, PhD students, SME's, Industry

More info can be found on the training material site.

46 Technical Textiles TIRE INDUSTRY CHALLENGES & EMERGING TRENDS

Type of Material: Electronic, Hardcopy

Summary:

Technical Textiles TIRE INDUSTRY CHALLENGES & EMERGING TRENDS ERTUĞRUL BAHAN Tire Reinforcement Technologies Manager Global R&D Center • Seamless Production Process • Industry Leader • Technical Textiles • Tire Industry • Tire Market • Light tires- Ratings • Light tires- Regulations/Labelling • Application Areas • Light tire components – functions • Light tires- Rolling Resistance • Light Tires Conclusions • Kordsa New Products & Mobiltech Applications • http://twixtra.com/ • http://www.monolyx.com/ • http://www.capmax.com.tr/ • Kordsa Global Wins Two Environment Awards

This training material is available in English

Contact person: ERTUĞRUL BAHAN; e-mail: Ertugrul.BAHAN@kordsaglobal.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

More info can be found on the training material site.

47 SMART TEXTILES - How smart are they now and how smart could they become?

Type of Material: Electronic

Summary:

Evolution and definition of smart (intelligent) materials. What is available now? What can we expect to see in the future?

This training material is available in English

Contact person: Roger H Wardman; e-mail:

This course is meant for BSc students, Master students, PhD students

48 TTEA&EURATEX “THE FUTURE OF TECHNICAL TEXTILES”

Type of Material: Electronic, Hardcopy

Summary:

TTEA&EURATEX “THE FUTURE OF TECHNICAL TEXTILES” “NONWOVEN AS A TECHNICAL TEXTILE APPLICATION” HUSEYIN CEVAHIROGLU - 16.11.2012 PRESENTATION PLANNING • Future expectation • Nonwoven in Turkey • How to succeed in technical textiles • Nonwoven as a technical textile application FUTURE EXPECTATION THE STATUS OF THE WORLD IN 2050 THE STATUS OF THE WORLD IN 2050 HOW TO SUCCEED IN TECHNICAL TEXTILES NONWOVEN AS A TECHNICAL TEXTILES APLICATION AGRICULTURE, LIVESTOCK, SHOES, MOTOR VEHICLES, TEXTILES, HOME TEXTILES, MEDICAL, CONSTRUCTION, OTHER AGRICULTURE MOTOR VEHICLES MEDICAL CONSTRUCTIONSTHANK YOU VERY MUCH hsyncevahir@gmail.com

This training material is available in English

Contact person: Hüseyin Cevahiroğlu; e-mail: hsyncevahir@gmail.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME’s, Industry

49 Cyclodextrin in Textile Finishing in Eco-Friendly Textile Dyeing and Finishing

Type of Material: Electronic

Summary:

Chemical finishing is crucial for giving textiles new functionalities and making them appropriate for special applications, such as antimicrobial resistance, flame retardancy and others. Textile finishing is also an important process as it improves appearance, performance or hand. Cyclodextrins can act as hosts and form inclusion compounds with various small molecules. Such complexes can be formed in solutions, in a solid state as well as when cyclodextrins are linked to various surfaces where they can act as permanent or temporary hosts for small molecules that provide certain desirable attributes. This characteristic makes cyclodextrin a promising reagent in textile finishing.

This training material is available in English

Contact person: Prof. Bojana Voncina; e-mail: Bojana.voncina@um.si

This course is meant for

50 Enzymatic processes

Type of Material: Electronic

Summary:

1. Development of advanced functional and intelligent fibre-forming polmers and materials (antibacterial, bioactive, hidrophilic/hydrophobic, etc) by modification or functionalization (grafting) of their surfaces with desired active/functional compounds or polymers using bio-chemical (enzymes, microorganisms) and green-chemistry (biomimetic compounds, functional proteins) approaches. 2. Upgrading/promoting of bio-catalyse processes using chemical (plasma, photochemistry) and/or physical (US, MW, MF) methods. 3. Nano-engineering of bio-materials (eg nanocellulose, nanolignin) and bio-responded (drug) carriers colloidal hydrogels, nano/micro-capsules and spheres, self-assembled structures 4. Biodegradation of biomaterials. 5. Biocatalytically-induced dyeing processes.

This training material is available in English

Contact person: Vanja Kokol; e-mail:

This course is meant for Researchers, BSc students, Master students

51 ZAŠČITA PRED VROČINO IN OGNJEM

Type of Material: Hardcopy

Summary:

This training material is available in Slovene

Contact person: Olivera Sauperl; e-mail:

This course is meant for BSc students

52 Surface Characterization of Polysaccharides Solid Matrices

Type of Material: Electronic

Summary:

CHARACTERISATION METHODS •Polysaccharide surface chemical composition •Polysaccharide surface morphology: Roughness and layer thickness •Polysaccharide interaction ability characterisation INTERACTION ABILITY AND SURFACE CHARACTERISATION Cellulose model films •Cellulose nano structures and usability of polysaccharides in nano-particle synthesis •Textile and pulp cellulose fibres and foils •Cellulose charge modification •Polysaccharide hybrid materials •Modified polymer surfaces with bioactive polysaccharides

This training material is available in English

Contact person: Karin Stana Kleinschek; e-mail:

This course is meant for Researchers, Master students, PhD students

53 Recycling of textile materials

Type of Material: Hardcopy

Summary:

Apparel and textiles account for approximately 10% of the total carbon footprint impact, further, more than 60 million tons of textiles annually are still sent to landfills or burned; on the other hand, textile recycling industry is able to process 93% of the waste without the production of any new hazardous waste or harmful by-products. The main burden in textile recycling is the fact that post-consumer textile waste consist of various types of fibres, which can vary according to their chemical structures (cellulose, polymers containing proteins, PET, PA, PP, PE,…), size and density, different fibres can be treated and post-treated (dyed, finished, functioned etc) by using different dyes and reagents – all these make recycling of textile waste of unknown content very difficult (even impossible).

This training material is available in English

Contact person: Prof. Bojana Voncina; e-mail: Bojana.voncina@um.si

This course is meant for BSc students, Master students

54 Geotextiles - Applications and Functions of Production Techniques

Type of Material: Electronic, Hardcopy

Summary:

Dokuz Eylül University Technical Textiles-Geotextiles Geosynthetics - Geotextiles - Geosynthetic foams - Geomembranes - Geocomposites - Geonets - Geogrids - Geotubes - Geosynthetic clay Geotextiles; Geotextiles Application Areas Roads, (Highways, railways, airport runways, parking areas), Tunnels, underpasses, subways, retaining walls, dams, water channels, ponds, coastal protection, erosion control, land filling, Garbage Collection Areas, Agricultural Fields, gardens, terraces, sport fields (golf, tennis, football) Geotextile Production Parameters Geotextile Functions General Properties of Geotextiles and Methods of Analysis

This training material is available in Turkish

Contact person: Dr. Ümit Halis ERDOĞAN; e-mail: umit.erdogan@deu.edu.tr

This course is meant for Researchers, BSc students, Master students, SME’s, Industry

55 Overview to Nonwovens

Type of Material: Electronic, Hardcopy

Summary:

Definition Nonwoven Surfaces and Technical Textiles Technical Textiles Applications

This training material is available in Turkish

Contact person: Prof. Dilek KUT; e-mail: dilek@uludag.edu.tr

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

56 ELECTROSTATIC PROTECTION

Type of Material: Electronic

Summary:

The term 'electrostatic' or 'static' electricity refers to the phenomenon associated with the build up of electrical charges generated, for example, by contact and/or rubbing of two objects. Static electricity is generated by unbalancing the molecular configuration of relatively non-conductive materials. Many years ago, problems arising from static charges were relatively small with natural fibres in high humidity environments, but these problems became recognized as serious when synthetic fibres of a hydrophobic nature were introduced. The need for in-depth understanding of the fundamentals of electrostatics in several industries has been growing fuelled by the proliferation of synthetic fibres the use of atmospherically controlled environments, highspeed manufacturing, and static-sensitive devices.

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for BSc students, PhD students, Industry

57 BALLISTIC PROTECTION

Type of Material: Hardcopy

Summary:

Ever since people have developed weapons, they simultaneously have produced armour; protective clothing that would deflect or cushion the impact of a weapon. For many years, the textile industry has been focusing on and committing resources to technologies for developing new materials to improve performance, comfort, efficiency, durability and reliability of body armour.

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for BSc students, PhD students, Industry

58 TEXTILES FOR UV PROTECTION

Type of Material: Electronic

Summary:

In the last decades, an alarming increase in skin cancer incidence worldwide has been revealed. A primary reason for this is ozone layer depletion. Because ozone is a very effective UV-absorber, each 1% decrease of ozone concentration can lead to an increase in skin cancer rate by 2 to 5%. Other reasons for the skin cancer epidemic can be traced to lifestyle changes such as excessive exposure to sunlight during leisure activities. These activities include playing outdoors and swimming in case of childeren, golfing and fishing in case of adults. In the case agricultural and other outdoor workers, exposure to the sun is an occupational hazard as they have no choice about the duration of their exposure to the sun.

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for BSc students, PhD students

59 Microorganism Protection

Type of Material: Electronic

Summary:

Microorganisms are very small organisms which may transferred easily by - Contact (direct and indirect) - Respiratory Droplets - Airbone Droplets Contact transmission is considered the most common one. Direct contacts occur, when microorganisms are transferred directly from one person to another. It can be coughs, sneezes, talking in short distance, body fluids etc. Among healthcare professionals today, there is an increasing concern over exposure to and transfer of various microorganisms. Therefore, protective apparel has a leading role to create a barrier to eliminate or reduce contact between patients and health care workers.

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for BSc students, PhD students

60 CIVILIAN PROTECTION AND PROTECTION OF INDUSTRIAL WORKERS FROM CHEMICALS

Type of Material: Electronic

Summary:

The evaluation of chemical protective clothing (CPC) designs, design features, performance, and applications requires an understanding of the types of chemical protective clothing available for protection. Chemical protective clothing exists in a variety of designs, materials, and methods of construction, each having advantages and disadvantages for specific protection applications. It is important to realize that chemical protective clothing that appears to be similarly designed may offer significantly different levels of performance. Relating chemical performance directly with possible exposures mandates a need for rigorously tested protective clothing. This clothing must also demonstrate acceptable integrity for overall protection and provide sufficient strength, durability, and physical hazard resistance. These three characteristics of chemical protective clothing will permit the end user to understand the type of CPC item being considered or used, as well as indicate its potential limitations. Classification by design Classification by performance Classification by service life

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for BSc students, PhD students

61 Dokusuz Yüzeyler (Nonwovens)

Type of Material: Hardcopy

Summary:

Dokusuz Yüzeyler (Nonwovens), published by Teknik Fuarcılık in 2004, presents basic information on nonwoven technology. Some parts of this book will be used as a training material for the seminar 'Functional Fabrics' which will be organised by Ege University.

This training material is available in Turkish

Contact person: ; e-mail:

This course is meant for Master students, PhD students

62 The Dynisco Extrusion Processors Handbook

Type of Material: Hardcopy

Summary:

The Dynisco Extrusion Processors Handbook, published by Dynisco Insturments, presents some technical data on melt blown nonwovens. Some parts of this book will be used as a training material for the seminar ‘Functional Fabrics’ which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

63 BIOLOGICAL PROTECTION

Type of Material: Electronic

Summary:

Garments that provide both total and partial protection of the body in environments (workplaces or elsewhere), where a risk assessment has revealed the presence and possibility of skin coming into contact with hazardous biological agents such as viruses, bacteria, funguses, etc. Current technical standards combine specifications for protection against biohazards with those set forth for protection against hazardous chemical agents, according to the various classifications.

This training material is available in English

Contact person: Selin Hanife ERYURUK; e-mail: eryuruk@itu.edu.tr

This course is meant for Researchers, BSc students, Master students, PhD students, Industry

64 SMART MATERIALS IN TEXTILES

Type of Material: Electronic

Summary:

This training material is available in English

Contact person: Nuray Ucar; e-mail: ucarnu@itu.edu.tr

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

65 Nonwovens Functionalization by Resin Bonding

Type of Material: Electronic

Summary:

In resin-bonding technology, adhesives from aqueous solutions may be applied to render fabrics from soft to harsh, from weak to strong, from water repellent to hydrophilic, compact to bulky. Latex binders have been commonly used. Application technologies such as padding, dip-squeeze saturation, spray bonding, foam bonding, print bonding may be applied. Reference text book: Batra, S. K. (2012). Introduction to Nonwovens Technology. Destech Publications, Inc. Lancaster, PS, U.S.A.

This training material is available in English

Contact person: Burcak Karaguzel Kayaoglu; e-mail: bkayaoglu@itu.edu.tr

This course is meant for Researchers, Master students, PhD students, Industry

66 Encyclopedia of clothing production

Type of Material: Hardcopy

Summary:

This encyclopedia was prepared by teaching staff of the Kiev National University of Technologies and Design. "Encyclopedia of clothing production" is the first edition of this type in the Ukraine. The Encyclopedia includes information concerning many disciplines - modeling, design and technology of clothing, apparel equipments, materials science, quality management, economics and organization of enterprises, labor protection. The Encyclopedia contains more than 2,000 articles. A list of English terms is also given.

This training material is available in Ukrainian

Contact person: Sergii Bereznenko; e-mail: bersenik@mail.ru

This course is meant for Researchers, BSc students, Master students, PhD students, Industry

67 Textiles and multifunctional textile composites for the disabled and seriously ill patients

Type of Material: Hardcopy

Summary:

The monograph is devoted to the selection of textiles for garment and other items for application of disabled and seriously ill patients. This book analyzes the features resulting of illness or injury, and lead to changes in the physique human, as well as analyzes of physiologic-hygienic characteristics that should be considered while developing specific medical textiles. There are innovations considered in the field of textiles with specific predetermined properties for people with special needs. This publication presents a wide range of textile products for disabled and seriously ill people, taking into account their illness or injury features, as well as specifics of their applications. A special attention was given to the development of sports suits and special accessories.For the latest, the concept of 'bodymapping' was used as a base. Principles of textile composites development for medical products (for example bedridden patients with urine uncontrolled emission) are described. Textile products developed have been tested in the medical institutions of the Ukraine.

This training material is available in Ukrainian

Contact person: Vlasenko Victoria; e-mail: vlasenko@ekma.kiev.ua

This course is meant for Researchers, BSc students, Master students, PhD students, Industry

68 Fundamentals and advances in knitting technology

Type of Material: Hardcopy

Summary:

‘Fundamentals and advances in knitting technology’ published by Woodhead, in 2012, presents general principles of advanced knitting technology. Some parts of this book will be used as a training material for the ‘spacer fabrics’ part of the seminar ‘Functional fabris’ which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

69 Specialist yarn and fabric structures: Developments and applications

Type of Material: Hardcopy

Summary:

‘Specialist yarn and fabric structures, Development and applications’ published by Woodhead, in 2011, presents the developments in the manufacturing of specialist yarns, woven and knitted fabrics such as hybrid and fancy yarns, 3D fabric structures, etc. Some parts of this book will be used as a training material for the ‘spacer fabrics’ part of the seminar ‘Functional fabrics’ which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

70 Adaptive and Functional Polymers, Textiles and Their Applications

Type of Material: Hardcopy

Summary:

‘Adaptive and Functional Polymers, Textiles and Their Applications’ published by Imperial College Press, in 2011, presents general properties of adaptive polymers and their use in functional textile materials. Some parts of this book will be used as a training material for the ‘electromagnetic shielding’ part of the seminar ‘Functional fabrics’ which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

71 Microencapsulation-Methods and Industrial Applications

Type of Material: Hardcopy

Summary:

‘Microencapsulation: Methods and Industrial Applications’ published by Taylor & Francis, in 2005, presents general principles of microencapsulation process. Some parts of this book will be used as a training material for the seminar ‘New developments on functional textiles: Microencapsulation and functionalization’ which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

72 Functional Coatings by Polymer Microencapsulation

Type of Material: Hardcopy

Summary:

Functional Coatings by Polymer Microencapsulation, published by Wiley-WCH Verlag GmbH&Co, in 2006, presents a general perspective of microencapsulation and encapsulation methods. Some parts of this book will be used as a training material for the seminar 'New developments on functional textiles: Microencapsulation and functionalization' which will be organised by Ege University.

This training material is available in English

Contact person: ; e-mail:

This course is meant for Master students, PhD students

73 Materials and Properties of Technical Textiles

Type of Material: Electronic, Hardcopy

Summary:

Technical textile is a textile product manufactured for non-aesthetic purposes, where function is the primary criterion. Technical textiles can be divided into different fields in respect to their functional application. In the first part of the book, types, properties, modifications of fibers and yarns for technical applications are presented. In the second part, technical textiles and fields of their application are presented.

This training material is available in Lithuanian

Contact person: Rimvydas Milašius; e-mail: rimvydas.milasius@ktu.lt

This course is meant for Researchers, Master students, PhD students, Industry

More info can be found on the training material site.

74 Nanoparticles: nanomaterials classes, cross-cutting issues, nano-toxicity aspects

Type of Material: Electronic

Summary:

A didactically structured PowerPoint presentation on nanomaterials, nanomaterials classes, cross-cutting issues, required properties of nanoparticles, critical characteristics as well as applications fields and potential hot-spots

This training material is available in English

Contact person: ; e-mail: v.dutschk@utwente.nl

This course is meant for Researchers, Master students, PhD students, SME’s, Industry

75 Technical Textile Coating

Type of Material: Hardcopy

Summary:

Tanatex will present a technical seminar about the latest developments in their coating product range and show coated fabric samples prepared for different technical purposes. Tanatex's versatile coating product range EDOLAN® is composed of water based polyurethanes, acrylics, crosslinkers, thickeners, dulling agents, slip additives, handle modifiers and other types of additives. From military applications to nonwovens, automotive industry to medical textiles, EDOLAN products can be used in almost every aspect of the Technical Textile world.

This training material is available in English, Turkish

Contact person: Işıl Bayram Ersin; e-mail: isil@spot.com.tr

This course is meant for Researchers, Master students, PhD students, SME's, Industry

More info can be found on the training material site.

76 Conductive Electroactive Polymers: Intelligent Polymer Systems

Type of Material: Hardcopy

Summary:

Rapid advances in synthetic polymer science and nanotechnology have revealed new avenues of development in conductive electroactive polymers that take greater advantage of this versatile class of materials' unique properties. This third edition of Conductive Electroactive Polymers: Intelligent Polymer Systems continues to provide an in-depth understanding of how to engineer dynamic properties in inherently conducting polymers from the molecular level.

This training material is available in English

Contact person: Nilda Yildirim; e-mail: nilda.yildirim@itaarge.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

77 Textiles in automotive engineering

Type of Material: Hardcopy

Summary:

This book presents a comprehensive treatment of both functional and decorative textiles used in the automotive industry including seat covers, headliners, airbags, seat belts and tyres. Written in a clear, concise style it explains material properties and the way in which they influence manufacturing processes as well as providing practical production details.

This training material is available in English

Contact person: Nilda Yildirim; e-mail: nilda.yildirim@itaarge.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

78 Plasma Processes and Polymers

Type of Material: Hardcopy

Summary:

Plasma Processes & Polymers focuses on the interdisciplinary field of low temperature plasma science, covering both experimental and theoretical aspects of fundamental and applied research in materials science, physics, chemistry and engineering in the area of plasma sources and plasma-based treatments.

This training material is available in English

Contact person: Nilda Yildirim; e-mail: nilda.yildirim@itaarge.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

79 Coated Textiles: Principles and Applications

Type of Material: Hardcopy

Summary:

Initially written to pull together scattered literature in polymer science and textile technology, the first edition of Coated Textiles: Principles and Applications became a gold standard resource in this field. Completely revised and updated, this second edition reflects not only the latest developments in the field, but also explores future possibilities. The book covers the materials used in coatings and their chemistry, textile substrates, coating methods, properties of fabrics after coating, rheology of coating, applications of coated fabrics, and test methods in chronological order.

This training material is available in English

Contact person: Nilda Yildirim; e-mail: nilda.yildirim@itaarge.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME's, Industry

80 Nanofibers and nanotechnology in textiles

Type of Material: Hardcopy

Summary:

Nanotechnology is revolutionising the world of materials. This important book reviews its impact in developing a new generation of textile fibers with enhanced functionality and a wide range of applications. The first part of the book reviews nanofiber production, discussing how different fiber types can be produced using electrospinning techniques. Part two analyses the production and properties of carbon nanotubes and polymer nanocomposites and their applications in such areas as aerospace engineering. The third part of the book considers ways of using nanotechnology to improve polymer properties such as thermal stability and dyeability. The final part of the book reviews the use of nanotechnology to modify textile surfaces, including the use of coatings and films, in order to improve hydrophobic, filtration and other properties.

This training material is available in English

Contact person: Nilda Yildirim; e-mail: nilda.yildirim@itaarge.com

This course is meant for Researchers, BSc students, Master students, PhD students, SME’s, Industry

81 Olympics Textiles Report

Type of Material: Electronic

Summary:

A brief report discussing textiles used during London 2012.

This training material is available in English

Contact person: Brian J. McCarthy; e-mail: brianmccarthy@technitex.org

This course is meant for Researchers, BSc students, SME’s, Industry

More info can be found on the training material site.

82 Advanced Skills for Advanced Materials

Type of Material: Demonstrator

Summary:

A sector specific flexible training programme in New Product Development and Balanced Sourcing Frequently Asked Questions: What is this training programme about? It is about developing skills in the Advanced Flexible Materials sector (sometimes known as technical textiles). What skills areas are going to be developed? New Product Development and Overseas Sourcing. Why these two areas? An independent report found that the sector as a whole could improve both turnover and profit margins if it improved its performance in product development and outsourcing. Who has written the training materials, and what do they know about these subjects? Roger Warburton has written the training modules, in conjunction with the North West Textiles Network. Roger was a director of an American sportswear business, Griffin Manufacturing, which was threatened with closure in 1995 when its biggest customer decided to place all future orders with a manufacturer in Honduras. In response to this, Warburton developed a technique called 'balanced sourcing' which persuaded the customer to continue placing its orders with Griffin and allowed Griffin to decide where the products should be made. By concentrating on areas where its own manufacturing could be profitable, taking the hassle out of managing offshore suppliers for its customer, and by developing new products more effectively, Griffin was able to fend off the threat of closure and retain almost its entire original manufacturing capacity. Who will be doing the training, and what do they know about the industry? We have recruited 12 industry professionals with a strong background in the industry, plus a genuine commitment to the success of the client and an ability to deliver high quality training. Roger Warburton 'trained the trainers'. We have compiled a short profile of each of the trainers to help you choose the best fit for your company. Who should attend the course? Anyone who has responsibility for developing new products or purchasing outsourced goods. The training modules have been written with a variety of different learners in mind, and the people who deliver the training will make sure as far as possible that each group of trainees is matched in terms of job function. The trainers will need to contact each candidate before training starts to make sure that the training is suitable for the student and vice versa. What will my company get out of it? A set of tools and techniques that will enable you to increase the effectiveness of product development and/or outsourcing, plus an understanding of how these disciplines can work together to strengthen your competitive position. How long is the course? We recommend five days in total: three days 'classroom' learning – probably in groups of six or eight – plus two days '1-to-1' in-company coaching working on a related project of the candidate's choice. However, we can tailor the length of the course to suit individual companies on request. How much does it cost? The standard 5 day course costs £2,000 per learner.

This training material is available in English

Contact person: Steve Kay; e-mail: steve.kay@nwtexnet.co.uk

This course is meant for

More info can be found on the training material site.

83 Textiles in Sport

Type of Material: Electronic

Summary:

The material uploaded by me presents only a part of the book edited by: Shishoo, R. © 2005 Woodhead Publishing. If you are interested in the whole book, please visit Knovel Library and download for free the rest of the chapters. If you face any problem by doing so, contact me and I will be happy to support you in reaching more training materials. Functional sport footwear M NEBO, Hame Polytechnic, Finland Functional features of sport footwear are comfort, performance, protection, support and shock absorption. The primary function of all shoe types is protection. Shoes provide the feet with a firm hold, protect them from injury and improve sporting performance.1 Optimal functionality is achieved through correct design of the upper and lower parts of the shoe, correct last shape with technically chosen materials and components, correct shoe construction and the appropriate shoemaking technique. The prime functions of the foot are to serve as a base for supporting the body and as a lever for locomotion. Our feet are, however, unique, and they have special requirements. One style will not fit all and therefore it is difficult to make a general prescription for appropriate sport footwear. Sport shoe manufacturers are developing customised footwear. Specially designed insoles (footbeds) are one example of mass tailoring. High-level end users prefer a customised last which gives optimal fitting for the individual athlete. The sport footwear industry is producing competitive, profitable and fashionable shoes. Their styles not only influence high street fashion but are also appearing in the most innovative fashion designs. As Sports Edge magazine has declared, fashion and function have become one family. Below is a list of different types of sport shoes, and it shows how prevalent footwear is in this field. Various sports are divided into seven categories; athletic sport, court sports, field sports, winter sports, track and field sports, outdoor activities and special sports. Athletic sport means running, training, hiking walking, jogging and exercise walking. Court sports include indoor and outdoor sports such as racket sports and team court sports (volleyball and basketball). Field sport includes football, rugby, softball, soccer and baseball. Winter sports includes skating sports such as ice hockey and figure skating, and bobsleigh, cross-country skiing and ski-jumping. Track and field sport includes shoes for individual athletes who compete on the field or track (sprint, javelin, high jump, etc.). Outdoor sport includes hunting, fishing, climbing, parachuting, boating and other recreational activities.3 Finally, there is speciality sport such as golf, aerobics, cycling, dancing, etc. All the sports mentioned above, and many others, have their own type of sport footwear which has special demands. This chapter looks at the functionality of sport footwear in general. Its purpose is to explain what is generally meant by functional footwear design, functional shoe fitting, and functional materials and components in sport footwear. Construction and materials maximise or minimise the performance. Functional shoe

fitting is about comfort, shock absorbency and biomechanical features of the shoe. It is also about stability, support and protection. Important fitting areas are joint area, heel area, toe and arch area. Last shape is an important feature of good functional footwear. An optimal fastening system provides good fitting during performance. The most common sizing systems are also discussed. The last part of the chapter covers functional materials and components.

This training material is available in English

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This course is meant for

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Part V (Bibliography and References)