

CONFERENCE PROGRAM



8th 3DBODY.TECH Conference & Expo Montréal, Québec, Canada · 11-12 October 2017

Organized by HOMETRICA CONSULTING · Switzerland

www.3dbody.tech/2017

Program Outline

3DBODY.TECH 2017 8 th International Conference and Exhibition on 3D Body Scanning and Processing Technologies Montreal, Quebec, Canada, 11-12 October 2017, www.3dbody.tech/2017				
Time	Wednesday 11 th October 2017		Thursday 12 th October 2017	
08:00	Registration		Exhibition Setup	Registration
09:00	Opening Session		Exhibition	Technical Session 7 Anthropometry & Scan Data Processing
10:00				Technical Session 8 3D Technologies for Apparel I
	Coffee Break		Coffee Break	
11:00	Technical Session 1 Full Body Scanning in Medicine & Health	Technical Session 2 Body Scanning for Apparel I	Exhibition	Technical Session 9 Medical Applications II
12:00	Poster Session & Live Demonstrations			Technical Session 10 3D Full Body Scanning Systems II
13:00	Lunch Break		Lunch Break	
14:00	Lunch Break		Exhibition	Technical Session 11 Body Scanning with Clothes on
15:00	Technical Session 3 3D Scanning Systems	Technical Session 4 Body Scanning for Apparel II		Technical Session 12 3D Technologies for Apparel II
16:00	Coffee Break		Coffee Break	
17:00	Technical Session 5 Medical Applications I	Technical Session 6 3D Full Body Scanning Systems I	Exhibition Breakdown	Technical Session 13 Scanning Methods & Technologies
18:00	Closing Session			Technical Session 14 3D Body Processing & Size Surveys

Conference Office

Conference office: HOMETRICA CONSULTING - Dr. Nicola D'Apuzzo
Via Collegio 28, CH-6612 Ascona, Switzerland

Conference website: www.3dbody.tech

Conference e-mail: info@3dbody.tech



HOMETRICA CONSULTING – Dr. Nicola D'Apuzzo
Ascona, Switzerland www.hometrica.ch

CONFERENCE PROGRAM



8th 3DBODY.TECH Conference & Expo
Montréal, Québec, Canada · 11-12 October 2017

Organized by HOMETRICA CONSULTING · Switzerland

www.3dbody.tech/2017

Wednesday 11th October 2017

08:00-09:30 **Registration** – Welcome Desk

09:30-10:30 **Opening Session** – Room C

09:30 Welcome Speech from the Conference Director
Nicola D'APUZZO
Hometrica Consulting, Switzerland

09:50 Premieres and Announcements from the Exhibitors
t.b.d.

10:30-11:00 **Coffee Break** – Foyer

11:00-12:30 **Technical Session 1: Full Body Scanning in Medicine & Health** – Room B

11:00 The Usefulness of a 3D Whole-Body Scanner for Uncommon Cosmetic Surgery Procedures
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #52

11:22 Correlation between Obesity Index and Body Fat Percentage Using 3D Body Scanning Technology
Suhana JAPAR^{1,2}, Thamilvaani MANAHARAN², Shaliza Mohd SHARIFF^{1,2,4}, Asma Ahmad SHARIFF^{2,3}
1 Institute of Graduate Studies, University of Malaya, Kuala Lumpur, Malaysia;
2 Centre of Research for Computational Sciences and Informatics for Biology, Bioindustry, Environment, Agriculture and Healthcare (CRYSTAL), University of Malaya, Kuala Lumpur, Malaysia;
3 Centre for Foundation Studies in Science, University of Malaya, Kuala Lumpur, Malaysia;
4 Fashion Departments, Faculty Art and Design, University Teknologi MARA, Malaysia #56

11:45 Title n.a.
Richard BARNES¹, co-authors² n.a.
1 Select Research Ltd, Malvern, UK;
2 Mayo Clinic, Rochester MN, USA #64

12:08 Aging Body Shapes
Henry LÖFFLER-WIRTH^{1,2}, Markus LOEFFLER^{1,2,3}, Hans BINDER^{1,2}
1 Interdisciplinary Centre for Bioinformatics, Leipzig University, Leipzig, Germany;
2 LIFE, Leipzig Research Center for Civilization Diseases; Leipzig University, Leipzig, Germany
3 Institute for Medical Informatics, Statistics and Epidemiology, Leipzig University, Leipzig, Germany #48

11:00-12:30 **Technical Session 2: Body Scanning for Apparel I** – Room C

11:00 From 3D Scans to Haptic Models: Apparel Design with Half Scale Dress Forms
Susan P. ASHDOWN¹, Arzu VURUSKAN²
1 Dept. of FSAD, Cornell University, Ithaca NY, USA;
2 Izmir University of Economics, Izmir, Turkey #54

11:22 From 3D Scan to Branding Journey
Nathon KONG
Nathon Kong, Montreal QC, Canada #40

11:45 Not All Body Scanning Measurements Are Valid: Perspectives from Pattern Practice
Simeon GILL, Maryam AHMED, Christopher J. PARKER, Steven G. HAYES
The University of Manchester, Manchester, UK #24

12:08 Producing Bespoke Apparel Patterns at Scale Using 3D Scanners and Data Mining
Marc C. CLOSE
Bespokify, Hong Kong #01

12:30-13:30 Poster Session & Live Demonstrations – Room t.b.d.

- 12:30 Innovative Applications of Fringe Pattern Projection
Dong HE1,2, Hailong CHEN1,2, Nan CHENG1, Bo PENG1, Menglong LIU1, Kaibing XIANG1, Xiaoli LIU2, Xiang PENG1,2
1 Shenzhen ESUN Co. Ltd., Shenzhen, China;
2 College of Optoelectronic Engineering, Shenzhen University, Shenzhen, China #47
-
- 12:30 Evaluation of Body Surface Area Formulae Based on 3D Body Scans
Grzegorz REDLARSKI, Marek KRAWCZUK, Aleksander PALKOWSKI
Department of Mechatronics and High Voltage Engineering, Gdansk University of Technology, Gdansk, Poland #15
-
- 12:30 Application of 3D Whole Body Scanning in Research on Human Body Surface Area
Grzegorz REDLARSKI, Marek KRAWCZUK, Aleksander PALKOWSKI
Department of Mechatronics and High Voltage Engineering, Gdansk University of Technology, Gdansk, Poland #16
-
- 12:30 Mirroring Procedures for the Assessment of Asymmetry of Different Anatomical Structures of the Cranium:
A Protocol Based on 3D-3D Superimposition
Daniele GIBELLI1, Valentina PUCCIARELLI1, Marina CODARI2, Luca PISONI1, Claudia DOLCI1, Chiarella SFORZA1
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 Unit of Radiology, IRCCS Policlinico San Donato, San Donato Milanese, Milan, Italy #20
-
- 12:30 The Study on Fitting Dress' Comfort of Vocality Performer Based 3D Technology
Zifei LI, Huanyun WEI, Li ZHOU
College of Textile & Garment, Southwest University, Chongqing, China #26
-
- 12:30 Improving Global Desirability of Apparel Design through Feel Factor with Anthropometry and Online Configurator
Kanwar Varinder Pal SINGH
Department of Textile Technology, National Institute of Technology, Jalandhar, Punjab, India #07
-
- 12:30 Virtual Garment Intelligent Design
LinXu PAN1, Huanyun WEI2, Li ZHOU1,2
1 College of Textile & Garment, Southwest University, Chongqing, China;
2 Chongqing Biomass Fiber Materials and Modern Textile Engineering Technology Research Center, Chongqing, China #34
-
- 12:30 Research on Optimal Efficiency of Data in Pattern Design
Caisen HUANG, Chunshan DENG, Li ZHOU
College of Textile & Garment, Southwest University, Chongqing, China #62
-
- 12:30 Study of Fashion Accessories Design Based on 3D Printing Technology
Siyu CHEN, Huanyun WEI, Li ZHOU
College of Textile & Garment, Southwest University, Chongqing, China #61

13:30-15:00 Lunch Break

15:00-16:30 Technical Session 3: 3D Scanning Systems – Room B

- 15:00 Title n.a.
Jean-Pierre GIBEAULT
Anatomi Metrix, Montreal QC, Canada #03
-
- 15:22 Comparison of Reliability of Different Foot Measuring Technologies
Alfredo BALLESTER, Ana PIÉROLA, Eduardo PARRILLA, Mateo IZQUIERDO, Beatriz NÁCHER,
Julio A. VIVAS, Jordi URIEL, Juan C. GONZÁLEZ, José MONTERO, Álvaro PAGE, Sandra ALEMANY
Instituto de Biomecánica de Valencia, Universidad Politécnica de Valencia, Valencia, Spain #37
-
- 15:45 Portable Scanner of a 3D Surface of a Curvilinear Object
Konstantin KARAVAEV
Elasizer, Kirov, Russia #11
-
- 16:08 *Available*

15:00-16:30 Technical Session 4: Body Scanning for Apparel II – Room C

15:00 Correspondence of Breast Measurements for Bra Design After Reconstruction Surgery
Krista M. NICKLAUS^{1,2}, Jevon CHU¹, Chi LIU^{1,3}, Greg P. REECE²,
Fatima A. MERCHANT⁴, Michelle C. FINGERET^{2,3}, Mia K. MARKEY^{1,6}
1 Department of Biomedical Engineering, The University of Texas at Austin, Austin TX, USA;
2 Department of Plastic Surgery, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
3 Apparel and Art Design College, Xi'an Polytechnic University, Xi'an, P.R. China;
4 Department of Engineering Technology, University of Houston, Houston TX, USA;
5 Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
6 Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston TX, USA #27

15:22 Reimagining Design of Golf Clothing: Addressing the Asymmetrical Pose
Arzu VURUSKAN¹, Susan ASHDOWN²
1 Izmir University of Economics, Izmir, Turkey;
2 Cornell University, Ithaca NY, USA #30

15:45 Fostering Student Engagement: Participatory and Experiential Pedagogy for 3D Technology Integration
Caron PHINNEY
School of Fashion, Ryerson University, Toronto ON, Canada #53

16:08 A Method to Develop Personalized Pattern of Pant from 3D Scanning Data
Junqiang SU¹, Bingfei GU², Caiyuan KUANG³
1 School of Textile and Clothing, Jiangnan University, Wuxi, Jiangsu, China;
2 Fashion College, Zhejiang Sci-Tech University, Hangzhou, Zhejiang, China;
3 College of Art, Jinling Institute of Technology, Nanjing, Jiangsu, China #05

16:30-17:00 Coffee Break – Foyer

17:00-18:30 Technical Session 5: Medical Applications I – Room B

17:00 Quantitative Analysis of Localized Changes in Breast Shape
Audrey L. CHEONG¹, Gregory P. REECE², Mia K. MARKEY^{3,4}, Michelle C. FINGERET^{2,5}, Fatima A. MERCHANT^{1,6}
1 Department of Electrical and Computer Engineering, University of Houston, Houston TX, USA;
2 Department of Plastic Surgery, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
3 Department of Biomedical Engineering, The University of Texas at Austin, Austin TX, USA;
4 Department of Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
5 Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston TX, USA;
6 Department of Engineering Technology, University of Houston, Houston TX, USA #32

17:22 3D Body Scanning – An Important Tool for Digital Archiving of Cosmetic Surgery Procedures
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #50

17:45 Analysing Single Photographic Images using Shape-From-Shading to Quantify Human Breast Profiles
Harvey MITCHELL
School of Engineering, University of Newcastle, Newcastle, Australia #33

18:08 Three-Dimensional Stereophotogrammetric Analysis of Adults Affected by Dravet Syndrome
Valentina PUCCIARELLI¹, Elena PIAZZA^{2,3}, Francesca RAGONA², Daniele GIBELLI¹,
Tiziana GRANATA², Claudia DOLCI¹, Chiarella SFORZA¹
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 Dipartimento di Neuroscienze Pediatriche, Istituto Neurologico C. Besta, Milano, Italy;
3 Dipartimento di Neuropsichiatria Infantile, Istituto Neurologico C. Mondino, Pavia, Italy #21

17:00-18:30 Technical Session 6: 3D Full Body Scanning Systems I – Room C

17:00 Title n.a.
David BRUNER
Size Stream LLC, Cary NC, USA #04

17:22 Title n.a.
Raj SAREEN
Styku, Los Angeles CA, USA #41

17:45 Title n.a.
Author(s)/Presenter(s) n.a.
Human Solutions GmbH, Kaiserslautern, Germany #39

18:08 Unification Process for Uniforms with Use of 3D Body Scanning
Łukasz MARKIEWICZ¹, Elżbieta MIELICKA², Krzysztof MULARCZYK¹, Lidia NAPIERALSKA², Robert SITNIK¹
1 Warsaw University of Technology, Mechatronics Faculty, 8 Boboli, Warsaw, 02-525, Poland
2 Textile Research Institute, Knitting and Clothing Research Department, 5/15 Brzezinska str., 92-103 Lodz, Poland #44

Thursday 12th October 2017

08:00-09:00 **Registration** – Welcome Desk

09:00-10:30 **Technical Session 7: Anthropometry & Scan Data Processing** – Room B

09:00 Automatic Detection of Body Landmarks in Human Body Scans – Lower Limb Analysis for Biomedical and Footwear Applications
Alessandra TURSI, Gregorij KURILLO, Ruzena BAJCSY
University of Berkeley, Berkeley CA, USA #29

09:22 Torso Shape Extraction from 3D Body Scanning Data using Automatic Segmentation Tool
Ola AHMAD^{1,2}, Philippe DEBANNÉ², Stefan PARENT², Hubert LABELLE², Farida CHERIET^{1,2}
1 Polytechnique Montréal, Montreal, Canada;
2 CHU Saint-Justine, Montreal, Canada #23

09:45 3D Bodyscanning as a Tool for Sports Diagnostics and Orthopedics
Author(s)/Presenter(s) n.a.
VITRONIC Dr.-Ing. Stein Bildverarbeitungssysteme GmbH, Wiesbaden, Germany #59

10:08 *Available*

09:00-10:30 **Technical Session 8: 3D Technologies for Apparel I** – Room C

09:00 An Exploratory Study of Clothing Fit for Male Consumers: Body Type, Clothing Fit and Anthropometric Scan Data
Osmud RAHMAN, Henry NAVARRO
Ryerson University, Toronto ON, Canada #06

09:22 NATO Research Task Group: 3D Scanning for Clothing Fit and Logistics
Allan KEEFE¹, James KUANG², Hein DAANEN³
1 Defence Research and Development Canada - Toronto Research Centre, Toronto, Canada;
2 Department of National Defence, Canada;
3 Sizing Science, Soesterberg, The Netherlands #35

09:45 Online Virtual Fit is not yet Fit for Purpose: An Analysis of Fashion eCommerce Interfaces
Monika JANUSZKIEWICZ, Christopher J. PARKER, Steven G. HAYES, Simeon GILL
The University of Manchester, Manchester, UK #22

10:08 *Available*

10:30-11:00 **Coffee Break** – Foyer

11:00-12:30 **Technical Session 9: Medical Applications II** – Room B

11:00 Third-Based Facial Similarities and Differences of Monozygotic Twins: A Stereophotogrammetric 3D Assessment
Valentina PUCCIARELLI¹, Daniele GIBELLI¹, Danilo DE ANGELIS², Pasquale POPPA²,
Marco CUMMAUDO², Marina CODARI³, Claudia DOLCI¹, Chiarella SFORZA¹
Fien BURG², Saartje DUERINCK², Jan SIJBERS¹, Toon HUYSMANS¹
1 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Milano, Italy;
2 Dipartimento di Scienze Biomediche per la Salute, Università degli Studi di Milano, Sezione di Medicina Legale, Milano, Italy;
3 Unit of Radiology, IRCCS Policlinico San Donato, San Donato Milanese, Milan, Italy #19

11:22 Three-dimensional Thermal Imaging in Medicine
Adam CHROMY, Ludek ZALUD
CEITEC - Central European Institute of Technology, Brno University of Technology, Brno, Czech Republic #17

11:45 A Survey of Measurement Templates used for Assessing Pre-Operative Body Contours and Evaluating Cosmetic Surgery Results using a 3D Whole-Body Scanner
David B. STEFAN¹, David A. GILBERT²
1 Novaptus Systems, Inc. Chesapeake VA, USA;
2 The Hague Plastic and Cosmetic Surgery Center, Norfolk VA, USA #49

12:08 *Available*

11:00-12:30 **Technical Session 10: 3D Full Body Scanning Systems II – Room C**

11:00 Title n.a.
Chris LANE
3dMD Ltd., London/Atlanta GA, UK/USA #55

11:22 Applications for a Laser Triangulated Bodyscanning Solution
Author(s)/Presenter(s) n.a.
VITRONIC Dr.-Ing. Stein Bildverarbeitungssysteme GmbH, Wiesbaden, Germany #58

11:45 Title n.a.
Manfred OSTERMEIER
botspot GmbH, Berlin, Germany #63

12:08 Active 3D Imaging Based on White Light Scanning: from Single Sensor to Sensor Networks
Xiang PENG1,2, Hailong CHEN1,2, Dong HE2, Xiaoli LIU1, Bo PENG2, Nan CHENG2
1 College of Optoelectronic Engineering, Shenzhen University, Shenzhen, China;
2 Shenzhen ESUN Co. Ltd., Shenzhen, China #43

12:30-14:00 **Lunch Break**

14:00-16:00 **Technical Session 11: Body Scanning with Clothes on – Room B**

14:00 New Improvements to Millimeter-Wave Body Scanners
Douglas MCKAKIN, David SHEEN, Thomas HALL, Jonathan TEDESCHI, A. Mark JONES
Pacific Northwest National Laboratory, Richland WA, USA #45

14:24 BodiData's Multi-Sensors Handheld 3D Body Scanner
Tuoc LUONG, Albert CHARPENTIER, Michael BOYLAN, Young HARVILL
BodiData Inc., Sunnyvale CA, USA #12

14:48 Towards Automatic Human Body Model Fitting to a 3D Scan
Alexandre SAINT1, Abd El Rahman SHABAYEK1,2, Djamilia AOUADA1,
Björn OTTERSTEN1, Kseniya CHERENKOVA3, Gleb GUSEV3
1 University of Luxembourg, Interdisciplinary Centre for Security, Reliability, and Trust, Luxembourg, Luxembourg;
2 Computer Science department, Faculty of Computers and Informatics, Suez Canal University, Egypt;
3 Artec 3D, Luxembourg, Luxembourg #51

15:12 A Model-based Approach to Rapid Estimation of Body Shape and Postures Using Low-Cost Depth Cameras
Byoung-Keon D. PARK, Matthew P. REED
University of Michigan, Transportation Research Institute, Ann Arbor MI, USA #09

15:36 Shape Customisation of Human Subjects Based on Human Parsing Technology
Shuaiyin ZHU, Yanghong ZHOU, P.Y. MOK
Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hunghom, Hong Kong #36

14:00-16:00 **Technical Session 12: 3D Technologies for Apparel II – Room C**

14:00 The Digital (R)evolution - Solutions to Drive through Tumults Times
Author(s)/Presenter(s) n.a.
EFI Optitex, New York NY, USA #42

14:24 Slow Adoption of Technology in the Apparel Manufacturing Industry's Implementation of Mass Customization
Jocelyn BELLEMARE
University of Quebec in Montreal (UQAM), Department of Management & Technology Management, Montreal QC, Canada #60

14:48 Proving 3D Body Scanning is Suitably Reliable:
A Case Study for Garment Construction Appropriateness
Christopher J. PARKER, Simeon GILL, Steven G. HAYES
The University of Manchester, Manchester, UK #02

15:12 *Panel - Discussion*
Retail & 3D Tech: Bridging the Gap
Elizabeth STEFANKA1, Stephen CROSSLAND2
1 STEFANKA TECH, Montreal QC, Canada;
2 Point Vision LLC, Pittsburgh PA, USA #65

16:00-16:30 **Coffee Break – Foyer**

16:30-18:00 Technical Session 13: Scanning Methods & Technologies – Room B

- 16:30 Deep Learning based Aesthetic Evaluation of State-Of-The-Art 3D Reconstruction Techniques
Gernot STUEBL, Christoph HEINDL, Harald BAUER, Andreas PICHLER
PROFACTOR GmbH, Steyr-Gleink, Austria #18
- 16:52 Design and Development of a Rotary 3D Scanner for Human Body Scanning
Khalil KHALILI, Mojtaba ZERAATKAR
Mechanical Engineering, University of Birjand, Birjand, Iran #08
- 17:15 Multi-Projector Multi-Camera Structured Light 3D Body Scanner
Tomislav PETKOVIĆ1, Tomislav PRIBANIĆ1, Matea ĐONLIĆ1, Nicola D'APUZZO2
1 University of Zagreb, Faculty of Electrical Engineering and Computing, Zagreb, Croatia;
2 Hometrica Consulting, Ascona, Switzerland #13
- 17:38 High Speed Measurement for Handheld 3D Imaging System Based on Triple Epipolar Constraint
Qijian TANG1, Xiaoli LIU1, Yang YANG1, Chang LIU1, Menglong LIU2, Kaibing XIANG2, Xiang PENG1,2
1 Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen Guangdong, China;
2 Shenzhen ESUN Co. Ltd., Shenzhen Guangdong, China #46

16:30-18:00 Technical Session 14: 3D Body Processing & Size Surveys – Room C

- 16:30 Working Group Progress for IEEE P3141 - Standard for 3D Body Processing
Carol MCDONALD1, Michael STAHL2, Luciano OVIEDO3, Alfredo BALLESTER4
1 Gneiss Concept, Woodinville WA, USA;
2 Intel Israel Ltd., Israel;
3 Intel Corp., USA;
4 Instituto de Biomecánica, Universitat Politècnica de València, Valencia, Spain #14
- 16:52 Statistical Learning of Human Body through Feature Wireframe
Tsz-Ho KWOK
Department of Mechanical and Industrial Engineering, Concordia University, Montreal QC, Canada #25
- 17:15 Body Type Classification of 3-D Torso Shape of Japanese Men Aged 20 to 70 for Efficient Clothing Design
Keiko WATANABE
Kyoto Women's University, Kyoto, Japan #31
- 17:38 Development of Women Shoe Sizing System Using 3D Foot Scanner: Malaysian vs Taiwanese
Shaliza Mohd SHARIFF1,2,5, Suhana JAPAR1,2, Asma Ahmad SHARIFF1,3
1 Centre of Research for Computational Sciences and Informatics in Biology, Bio industry, Environment, Agriculture and Healthcare (CRYSTAL), University of Malaya, Kuala Lumpur, Malaysia;
2 Institute of Postgraduate Studies, University of Malaya, Kuala Lumpur, Malaysia;
3 Centre for Foundation Studies in Science, University of Malaya, Kuala Lumpur, Malaysia;
4 Institute of Biological Sciences, Faculty of Science, University of Malaya, Kuala Lumpur, Malaysia;
5 Fashion Departments, Faculty of Art and Design, University Technology MARA, Malaysia #57

18:00-18:15 Closing Session – Room B1

- 18:00 Closing Speech and Announcements for 2018 from the Conference Director
Nicola D'APUZZO
Hometrica Consulting, Switzerland

Conference Venue

Venue Plaza Centre-Ville (by Evo Vieux-Montreal), floor level C (2 floors below the lobby)
777 Blvd. Robert-Bourassa, Montréal QC, H3C 3Z7, Canada, www.plazacentreville.com
Underground parking available, indoor access to Square Victoria subway station

