Contents

Part I  Design for Inclusion and Product Development

“Tutti a Tavola!” Project. A Didactic Experience on Design for All Applied to Ceramic Objects for Food and Beverage .................. 3
Giuseppe Di Bucchianico and Stefania Camplone

From “Liquid Kitchen” to “Shared Kitchen”: Human-Centred Design for Innovative Services of Social Inclusion in Food Consumption ................................................................. 13
Alessandra Rinaldi, Francesca Tosi and Daniele Busciantella Ricci

Does Design for All Need Marketing? ................................. 27
Daniela Gilardelli and Avril Accolla

Alessia Brischetto and Francesca Tosi

Part II  Designing for Inclusion in the Public Sector and Cultural Heritage

Making Voting by Mail Usable, Accessible and Inclusive ............. 53
Kathryn Summers, Whitney Quesenbery and Amy Pointer

Bringing Universal Usability to All Users: A Case Study on Public Realm Locations of Tourist Interest in Bhopal, India ........... 65
Shweta Vardia, Rachna Khare and Poonam Khan
### Part III Design for Disability and Social Inclusion

**Design for People Affected by Duchenne Muscular Dystrophy.**
Proposal of a New Type of Ankle Foot Orthosis [AFO] Based on 3D Indirect Survey and 3D Printing .......................... 81
Alessandra Tursi and Giuseppe Mincolelli

**Design for Duchenne. Guidelines for Dwellings’ Construction or Renovation for Muscular Dystrophy—Affected Families.** 87
Michele Marchi and Giuseppe Mincolelli

**IESAMSI: An Intelligent Environment to Support the Academic Monitoring and Inclusion of Students with Disabilities in University.** 97
Paola Ingavélez-Guerra, Fernando Pesántez-Avilés, Vladimir Robles-Bykbaev, Jennifer Yépez-Alulema, Cristian Timbi-Sisalima and José Ramón Hilera

**Communication Support with the COMUOON Communication Support System** 109
Shinichiro Nakaishi

### Part IV Designing for Inclusion: Methodology and Future Trends

**Building Bridges Between User and Designer: Co-creation, Immersion and Perspective Taking** 117
Santiago Martínez, John Isaacs, Fabiola Fernandez-Gutierrez, Daniel Gilmour and Ken Scott-Brown

**Ask Yourself the Right Question. To Know and Understand the Beauty of Human Diversity It Is the First Design Step: A Design for All Structured and Autopoietic Tool** 131
Avril Accolla and Luigi Bandini Buti

**User Knowledge Creation in Universal Design Processes.** 141
Elke Ielegems, Jasmien Herssens and Jan Vanrie

**Light: Towards an Inclusive Perspective** 155
Kim Janssens, Jan Vanrie, Katelijn Quartier and Stefan Danschutter

### Part V Multisensory Design and Mobility for Special Needs

**A Design Toolkit for Visually Impaired People on Travelling Experience** 169
Jing Guan and Clifford Sze-Tsan Choy
Sensory—Friendly Grocery Store for the Visually Impaired Shoppers ................................................................. 181
Doaa Khattab

Can You Hear Architecture: Inclusive Design and Acoustics in the Nordic Region .................................................. 191
Camilla Ryhl

An Experimental Study on Fused-Deposition-Modeling Technology as an Alternative Method for Low-Cost Braille Printing ............................................................... 201
Claudio Loconsole, Daniele Leonards, Massimo Bergamasco and Antonio Frisoli

Using a Mobile Application to Help Visually Impaired Individuals Explore the Outdoors ......................................... 213
Shelby K. Long, Nicole D. Karpinsky, Hilal Döner and Jeremiah D. Still

Part VI Inclusive and Universal Fashion Design in Clothing, Footwear and Accessories

Inclusive Fashion Design: Interdisciplinary Practice in the Fashion Design Degree Program at SENAC-PE College ........ 227
Christianne Falcão and Danielle Simões-Borgiani

The Importance of Ergonomic Design in the Inclusion of Women with Mastectomies with Lymphedema ..................... 235
Maria Grave, Miguel Carvalho and Fernando Ferreira

WearAbility .................................................................................................................... 247
Gianni Montagna and Cristina Carvalho

Fashion Design and Life Experience: Reduced Mobility in Ageing ............................................................................ 257
Cristina Carvalho, Gianni Montagna and Carla Morais

Open Inclusive Fashion: New Insights for a Co-design Platform ................................................................. 265
António Lucas Soares, Eric Costa, Solange Mazzaroto, Miguel Carvalho, David Allen, Kathleen Wachowski, Eric Gehl, Veronique Barreau, Deza Nguembock and Fernando Nunes Ferreira

Part VII Design for Inclusion: The Japanese Perspective

Applicability of HAPTICS for Universal Design: A Study to Develop a New System for Visually Impaired People ........ 279
Masayoshi Kubo
Panasonic Group’s Universal Design Measures .......................... 291
Yoko Nakao

Built Environment Design Toward an Inclusive Society:
How Can We Improve the Existing Infrastructure in Cities? ........ 307
Satoshi Kose

Effect of Cross-Sectional Shape of Small Level Change
on Walkability .......................................................... 315
Yoshiaki Goto, Mai Miyake, Katsushi Sato and Satoshi Kose

Part VIII  Designing for Inclusion in Learning Experiences

Inclusive Design for Children at the Master Education .............. 325
Rita Assoreira Almendra and Gonçalo Falcão

Mobile Device Development and Its Contribution
to the Treatment of Young Dyslexic Brazilian Children ............. 339
Teresa Bittencourt, João Savino, Helena Fernandes
and Luiza Helena Boueri Rebbelô

Design and Evaluation of a Universally Accessible Academic
Course Search Portal .................................................. 351
Omíd Elliyoun Sardroud and Young Mi Choi

Assessing the Reading Level of Web Texts for WCAG2.0
Compliance—Can It Be Done Automatically? ......................... 361
Evelyn Eika and Frode E. Sandnes

Cultural and Creative Industries of the Color and Design
of Packaging .......................................................... 373
Chih-Chun Lai and Lung-Wen Kuo

Color Size and Design of Computer Peripheral Products of Black .... 381
Chih-Chun Lai and Lung-Wen Kuo

Part IX  Designing for Inclusion for Ageing Population

Agder Living Lab: From Ideas to Large-Scale Deployment
and Long-Term User Adoption of Inclusive Health Solutions ........ 391
Santiago Martínez, Silje Bjerkås, Ann-Elisabeth Ludvigsen
and Rune Fensli

Ergonomics and Inclusive Design: Innovative Medical Devices
for Home Care ......................................................... 401
Francesca Tosi, Alessandra Rinaldi and Daniele Busciatella Ricci

Creating Inclusive Living Environment in Urban Residences
for Indian Elderly ....................................................... 413
Sandeep Sankat and Rachna Khare
Research Methods Applied to Studies with Active Elderly:  
A Literature Review .................................................. 425  
Laura Martins, João Baptista and Pedro Arezes

Part X Designing for Inclusion in the Information Society
Towards Universal Design Criteria for Design of Wearables ....... 439  
Vladimir Tomberg and Sebastian Kelle

Alternative and Augmentative Communication for People  
with Disabilities and Language Problems: An Eye Gaze  
Tracking Approach ................................................... 451  
Emmanuel Arias, Gustavo López, Luis Quesada and Luis Guerrero

Web Accessibility for People with Reduced Mobility: A Case Study  
Using Eye Tracking ...................................................... 463  
Emmanuel Arias, Gustavo López, Luis Quesada and Luis Guerrero

Virtual Accessibility Guide in Brazil ................................ 475  
Regina Cohen and Cristiane Rose S. de Duarte

Multimedia Interfaces for People Visually Impaired ................. 487  
Alexiei Dingli and Isaac Mercieca

Improving Deaf People Accessibility and Communication  
Through Automatic Sign Language Recognition Using  
Novel Technologies ...................................................... 497  
Luis Quesada, Gustavo López and Luis Guerrero

Analysis of Interaction Patterns in the Use of High-Tech  
Prompting Technologies by People with Intellectual Disabilities .... 509  
Jeannie Roux, Dany Lussier-Desrochers, Yves Lachapelle,  
Bruno Bouchard and Julie Bouchard

Accessibility of MOOCs for Blind People in Developing  
Non-English Speaking Countries ...................................... 519  
Mexhid Ferati, Njomza Mripa and Ridvan Bunjaku

An Eye Tracking Experiment on Strategies to Minimize  
the Redundancy and Split Attention Effects in Scientific  
Graphs and Diagrams .................................................. 529  
Azam Majooni, Mona Masood and Amir Akhavan

Evaluation of Health Services Received by People with Autism  
Spectrum Disorders by Means of an Adapted iPad® Questionnaire . . . 541  
Dany Lussier-Desrochers, Nancy Milette, Valérie Godin-Tremblay,  
Jeannie Roux and Yves Lachapelle
Part XI Dissing the Dis—The Swedish Concept

A Design Research Lab—An Integrated Model to Identify Conscious and Unconscious Behavior in the Design Process .......................... 553
Morteza Abdipour, Lena Lorentzen and Håkan Olin

(In)spectors—Presentation of Education, Training and Professional Practice of Professional Test Persons ........................................... 565
Lena Lorentzen and Klas Tviksta

How the Swedish Rheumatism Association Uses the Design for All Tests to Approve Easy to Handle Packages and Products .......................... 573
Lena Lorentzen and Johan Eklund

How to Categorize Users from a Design Point of View? ........................ 585
Lena Lorentzen

Vital Minutes—Cardiac Arrest and the Essence of Time .................... 599
Lise Johansson, Ana Popa, Hanif Bahari, Muzammil Aslam and Sanna Amjadiian

Part XII Design for Inclusion in the Living Environment and Ageing Population

Davide Fassi, Laura Galluzzo and Annalinda De Rosa

The Digital Crystal Ball: A Service Recommendation System for Designing Social Participation Experiences Among the Elderly ........ 623
Koji Kitamura, Yoshihisa Shirato, Mikiko Oono, Yoshihumi Nishida and Hiroshi Mizoguchi

Handrail-Shaped IoT Sensor for Long-Term Monitoring of the Mobility in Elderly People .................................................. 631
Yoshihumi Nishida, Yusuke Takahashi, Koji Kitamura and Hiroshi Mizoguchi
Advances in Design for Inclusion
Di Bucchianico, G.; Kercher, P.F. (Eds.)
2016, XVI, 638 p. 238 illus., 183 illus. in color., Softcover
ISBN: 978-3-319-41961-9