2021 2nd International Conference on Intelligent Design (ICID 2021)

Xi’an, China
19 October 2021

IEEE Catalog Number: CFP21AC3-POD
ISBN: 978-1-6654-0603-1

Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP21AC3-POD
ISBN (Print-On-Demand): 978-1-6654-0603-1
ISBN (Online): 978-1-6654-2065-5

Additional Copies of This Publication Are Available From:

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

2021 2nd International Conference on Intelligent Design (ICID)

ICID 2021

Table of Contents

Preface ..... **xv**
Conference Organizers ..... **xvii**
Reviewers ..... **xviii**

Session 1: Intelligent Architecture Design and Industrial Interaction Design

Research on Industrial Product Innovation Method Based on TRIZ and Patent Enhancement Design 1
Zhijuan Yin (South China University of Technology, China), Miao Li (South China University of Technology, China), Mengyun Hu (South China University of Technology, China), and Fengyun Xu (South China University of Technology, China)

Motion Control Method of Multi Degree of Freedom Industrial Robot for Intelligent Manufacturing 6
Guofen Xing (Tianjin Petroleum Vocational and Technical College, China)

Emotional Interactive Design of Industrial Products 10
Ming Zhao (Shenyang Jianzhu University, China) and Jia-Tong Chen (Shenyang Jianzhu University, China)

Research on Construction Information Collection System Based on BIM 14
Jiayin Gong (Wuhan University of Technology, China)

Remote Data Acquisition Model for Abnormal Operation of Power Equipment Based on .NET Technology 18
Ze Li (State Grid Liaoning Marketing Service Center, China), Linlang Guo (State Grid Liaoning Marketing Service Center, China), Hong Xue (State Grid Liaoning Marketing Service Center, China), Lin Ji (State Grid Liaoning Marketing Service Center, China), and Yuewei Qin (State Grid Liaoning Marketing Service Center, China)

Analysis Vehicle Steering Ability Using Computational Dynamic 22
Xiaoyong Wu (Sichuan University, China) and Chenwei Bian (University of Toronto, Canada)

Design of User Power Grid Information Bidirectional Interaction System Based on Mobile Terminal 28
Ke Wang (Guangdong Power Grid Power Dispatch Control Center, China), Bin Du (Guangdong Power Grid Power Dispatch Control Center, China), and Bin Lin (Guangdong Power Grid Power Dispatch Control Center, China)

Design of Multi-Target Workpiece Tracking System Based on Darknet29 32
Shengpeng Wang (Xi'an Polytechnic University, China), Jian Xu (Xi'an Polytechnic University, China), Xiuping Liu (Xi'an Polytechnic University, China), and Lin Han (Xi'an Polytechnic University, China)

Optimization Design of Remote-Field Eddy Current Sensor Based on Finite Element Simulation. 36
Wenguang Hu (Sinomach Sensing Technology Co., Ltd., China), Huadong Song (Sinomach Sensing Technology Co., Ltd., China), Jun Zhang (Sinomach Sensing Technology Co., Ltd., China), Yinlong Tang (Sinomach Sensing Technology Co., Ltd., China), Quanbo Cheng (Sinomach Sensing Technology Co., Ltd., China), and Zihan Wang (Sinomach Sensing Technology Co., Ltd., China)

Design of Spatial Energy Acquisition and Energy Consumption Optimization Model of Current Sensor 41
Zhong Liu (China Southern Power Grid, China), Qiancheng Lv (China Southern Power Grid, China), Bing Tian (China Southern Power Grid, China), Jiaming Zhang (China Southern Power Grid, China), Bofeng Luo (China Southern Power Grid, China), Hongdi Sun (China Southern Power Grid, China), and Zejie Tan (China Southern Power Grid, China)

Simulation of Chevy and BMW Turning Research 45
Shangran Xu (School of Yancheng Institute of Technology, China) and Yukun Xiong (Shaanxi University of Science & Technology, China)

A Study of Green and Intelligent Remodeling Methods of Existing Buildings in Lingnan Area: A Case Study of the Design of Global Villa Women's Health Club in Guangzhou 52
Yueling Liu (Guangdong University of Finance and Economics, China), Huabin Lv (Guangzhou Huashang College, China), Zishan Wu (Guangdong University of Finance and Economics, China), and Zhaoming Du (Guangdong University of Finance and Economics, China)

Reflections on Archisemiotics 56
Ke Xu (Sichuan University, China)

Research on Symbiosis of Modular Silage Equipment Based on TRIZ Theory 61
Hao Wei (University of Jinan, China), Bing Lv (University of Jinan, China), Yantao Li (University of Jinan, China), and Zhenpeng Xue (University of Jinan, China)

Research on Cooperative Sharing of Material Purchase Based on Vector Model 66
Lichong Cui (State Grid Hebei Procurement Co., China), Cailin Zhou (State Grid Hebei Procurement Co., China), Pengfei Cai (State Grid Hebei Procurement Co., China), Qi Wang (State Grid Hebei Procurement Co., China), Shuman Yang (State Grid Hebei Procurement Co., China), and Youkuo Lin (State Grid Hebei Procurement Co., China)

The Study of BMW M3 and Chevrolet Cavalier's Dynamics Performance 72
Keshu Cai (Changsha University of Science & Technology, China) and Zelin Wang (University College London, UK)

Research and Design of Bundling Device Based on Destructive Innovation Theory 79
Yantao Li (University of Jinan, China), Bing Lv (University of Jinan, China), Zhenpeng Xue (University of Jinan, China), and Hao Wei (University of Jinan, China)

Research on Optimization of Building Ventilation Environment Based on Simulation Analysis of PHOENICS: An Example of Global Villa in Guangzhou 84
LiNan Wu (Guangdong University of Finance and Economics, China), Jue Chen (Guangdong University of Finance and Economics, China), and ZhaoMing Du (Guangdong University of Finance and Economics, China)

Design of Variable Thickness Wing Based on Two-way Shape Memory Alloy Drive 88
Zijing Liu (Nanjing University of Aeronautics and Astronautics, China), Ning Dai (Nanjing University of Aeronautics and Astronautics, China), Hongtao Wang (Nanjing University of Aeronautics and Astronautics, China), and Liming Wu (Nanjing University of Aeronautics and Astronautics, China)

Design of Electromagnetic Situation Visualization System 93
Haojie Hu (Space Engineering University, China) and Shengliang Fang (Space Engineering University, China)

Analysis of the Influence of Han Dynasty Censers on Intelligent Environment Aesthetics Based on Taoist Aesthetic Thought 101
Di Ying (Hubei University of Technology, China) and Zhilai Song (Hubei University of Technology, China)

Research on Modern Urban Environment Design Based on Gradient Descent Method in Machine Algorithm 106
Dezhi Liu (China Three Gorges University, China)

The Changing Language of Interior Smart Space Design in the Post-Epidemic Era 111
Liqun Guo (Wuhan Institute of Technology, China) and Jingyi Yue (Wuhan Institute of Technology, China)

Research on Modeling Design of Happy Kitchen for Singles Based on User Requirements 115
Jiao Xu (Xi'an Polytechnic University, China), Awei Zhang (Xi'an Polytechnic University, China), Liping Liu (Xi'an Polytechnic University, China), and Lei Zhang (Xi'an Polytechnic University, China)

The Display and Dissemination of Qiantang River Poetry Road Culture Based on Virtual Reality and Human-Computer Interaction 120
Zizhen Fan (Zhejiang Tongji Vocational College of Science and Technology, China), Rui Dai (Zhejiang Tongji Vocational College of Science and Technology, China), Yiyi Xu (Zhejiang Tongji Vocational College of Science and Technology, China), Xiaoyi Wang (Zhejiang Tongji Vocational College of Science and Technology, China), and Shanshan Chen (Zhejiang Tongji Vocational College of Science and Technology, China)

Research on the Modeling Design of Intelligent Seal Based on Kansei Engineering 129
Lei Zhang (Xi'an Polytechnic University, China), Awei Zhang (Xi'an Polytechnic University, China), Jiao Xu (Xi'an Polytechnic University, China), and Liping Liu (Xi'an Polytechnic University, China)

Research on the Application of Laser Engraving Technology in the Design of Precious Metal Crafts 133
Feng Lyu (Shenyang Aerospace University, China) and Fan Yang (Shenyang Aerospace University, China)

Session 2: Artificial Intelligence Technology and Digital Design

Seismic Fragility Analysis under Multidimensional Limit State through Gaussian Mixture Model 137
DaWei Jia (Northwestern Polytechnical University, China), ZiYan Wu (Northwestern Polytechnical University, China), and Xiang He (Northwestern Polytechnical University, China)

Exploration on the Application of Artificial Intelligence Elements in Graphic Design 143
Shuye Li (Jiangxi Vocational and Technical University of Software, China)

Intelligent Furniture Design and Function Simulation Based on 3D Technology 147
Linyan Jiang (Sichuan University of Culture and Arts, China)

A Simple Verification of Non-Linear Dynamic Model Based on Python Simulation 153
Feifan Gao (Jilin University, China) and Yubo Liu (University of Warwick, UK)

Application of 3D Data Scanning Technology in the Restoration and Protection of Ancient Furniture 161
Jiayi Wang (Polus International College, China)

Study on College Students' Psychological Health Service System Design Based on Artificial Intelligence Techonology 166
Qiuyue Wang (Beijing Institute of Technology, China) and Chao Gong (Beijing Institute of Technology, China)

Design of Air Defense Deployment Optimization Model Based on Adaptive Nested PSO Algorithm. 172
Weijie Zhong (Air Force Engineering University, China), Xiaobing Li (Air Force Engineering University, China), Haotian Chang (Air Force Engineering University, China), and Fei Liang (Air Force Engineering University, China)

Research on the Importance of Passenger Car Design Elements Based on User Evaluation 178
Xun Gao (Guangzhou Academy of Fine Arts, China), Yong Li (Guangzhou Academy of Fine Arts, China), Fuyong Liu (Guangzhou Academy of Fine Arts, China), Ruimin Hao (Guangzhou Academy of Fine Arts, China), Wenjie Huang (Guangzhou Academy of Fine Arts, China), and Wanying Cheng (Guangzhou Academy of Fine Arts, China)

Intelligent Product Design and Its Platform Based on AI Hardware 184
Beibei Li (Nanchang Institute of Science & Technology, China)

Precise Motion Control Method of Electric Work Robot Manipulator 188
Yijiang Wu (Zhongshan Power Supply Bureau of Guangdong Power Grid Corp., China), Zhicong Dong (Zhongshan Power Supply Bureau of Guangdong Power Grid Corp., China), and Huibin Zhou (Zhongshan Power Supply Bureau of Guangdong Power Grid Corp., China)

Research on Intelligent Furniture Design Based on 5G Interconnection Technology 192
Wenming Liu (Shenyang Jianzhu University, China) and Zhenyu Wang (Shenyang Jianzhu University, China)

Research on Color Matching Method of Intelligent Tunneling Robot in Coalmines Based on Discrete Theory 196
Lishan Zhao (Xi'an University of Science & Technology, China) and Yuenan Xu (Xi'an University of Science & Technology, China)

Research on Intangible Cultural Heritage Amusement Space Design from the Perspective of Artificial Intelligence 203
Xiaoli Yu (Jingdezhen Ceramic Institute, China), Wei Shan (Jingdezhen Ceramic Institute, China), Hao Ding (Jingdezhen Ceramic Institute, China), and Ben Li (Jingdezhen Ceramic Institute, China)

Design and Research of UAV for Campus Express Delivery 208
Zhen Bai (Xi'an Mingde Institute of Technology, China), Qiang Feng (Xi'an Mingde Institute of Technology, China), and Ye Qiu (Xi'an Mingde Institute of Technology, China)

Research on the Delivery Mode of Rural E-Commerce Logistics Drones under the Background of "5G+AI" 214
Ying Zhou (Tianjin University of Technology, China), ZhiLan Song (Tianjin University of Technology, China), and SongHong Yan (Tianjin University of Technology, China)

Application Analysis of Three-Dimensional Real Scene Modeling of Substation Site Based on UAV Tilt Photography 220
Hailiang Wu (State Grid Hebei Electric Power Co., Ltd., China), Yamin Wang (State Grid Hebei Electric Power Co., Ltd., China), Lin Xing (State Grid Hebei Electric Power Co., Ltd., China), Jian Duan (State Grid Hebei Electric Power Co., Ltd., China), Nan Cheng (State Grid Hebei Electric Power Co., Ltd., China), Jizhi Su (State Grid Hebei Electric Power Co., Ltd., China), and WuChen Zhang (State Grid Hebei Electric Power Co., Ltd., China)

Product Service System Design of Agricultural Products Based on Distributed System 226
Pengfei Jing (Shandong Youth University of Political Science, China) and Lina He (Shandong Youth University of Political Science, China)

A Virtual Model Generation Based on Grasshopper-Wasp 230
Boyuan Yu (Chinese University of Hong Kong, China) and Lei Zhang (Harbin University of Science and Technology, China)

Research on Brand Digital Development and Design Method in Intelligent Era 234
Linglin Ma (Hunan Normal University, China)

Comprehensive Energy Optimal Coordinated Planning Algorithm Considering New Energy Grid Connection 238
Ke Chen (State Grid Zhejiang Electric Power Corp., China), Hongjie Gu (State Grid ZheJiang Marketing Service Center, China), Jiaqi Wang (State Grid Zhejiang Electric Power Corp., China), Chengxin Zhang (State Grid Zhejiang Electric Power Corp., China), and Zhangchi Ying (State Grid Zhejiang Electric Power Corp., China)

Multi-Attribute Decision Making Method for Product Design Schemes Based on Linguistic Z-Numbers 242
Zhongkui Liu (Linyi University, China), Qinghua Liu (Guizhou University, China), and Danhui Zhang (Linyi University, China)

Research on Improving Brand Image by Visual Symbol System Design -- Taking Shiying Hall in Jingdezhen as an Example 247
Jianglin Yang (Jiangxi University of Finance and Economics, China), Baoying Liang (Jiangxi University of Finance and Economics, China), YiHuan Tian (Jiangxi University of Finance and Economics, China), and LinShanShuo Tao (Jiangxi University of Finance and Economics, China)

Interactive Design of a Museum Website 251
Meng Yu (Hunan Normal University, China)

Research of Smart Door Lock Design Based on an Extended Kano Model and User Journey Map ... 255
ZhiYong Xiong (South China University of Technology, China) and JunXiong Xiao (South China University of Technology, China)

Emotional Design for Intelligent Products Using Artificial Intelligence Technology 260
Xuesong Li (LuXun Academy of Fine Arts, China) and Shixuan Cai (LuXun Academy of Fine Arts, China)

Research on Cognitive Differences between Chinese and Foreign Cross-Cultural Brand Communication Design Based on Big Data -- Taking Wahaha and Coca Cola as Examples 264
Hongyan Xu (Hubei University of Technology, China)

Analysis on the Fusion of Intelligent Digital Technology and Media Art 269
Jianwen Zhang (Chongqing College of Architecture and Technology, China)

Auxiliary Simulation Analysis of Micro Intelligent Sensor for Power Frequency Magnetic Field Distribution Characteristics of Typical Substation 273
Ke Zhou (Electric Power Research Institute of Guangxi Power Grid Co., Ltd., China), Qingren Jin (Electric Power Research Institute of Guangxi Power Grid Co., Ltd., China), Xiaoming Wang (Electric Power Research Institute of Guangxi Power Grid Co., Ltd., China), Bin Feng (Electric Power Research Institute of Guangxi Power Grid Co., Ltd., China), and Hongdi Sun (China Southern Power Grid Digital Power Grid Research Institute Co., Ltd., China)

Research on 3D Digital Model Design of the Sparrow Brace in Qingcheng Ancient Town 278
Zhiteng Zhang (Northwest Minzu University, China)

Scenario-Based Innovation Design of Mobile Internet Products 282
Miao Li (South China University of Technology, China), Mengyun Hu (South China University of Technology, China), Jiaxin Yu (South China University of Technology, China), and Tonglu Zhao (South China University of Technology, China)

Study on the Text Design of Highway Signs Based on Intelligent Identification 288
Zhuo Jin (Mahasarakham University, Thailand) and Ze Shi (Mahasarakham University, Thailand)

Research on the Interaction Design of Emotional Detoxification APP Based on Emotional Psychology 292
Fangyuan Li (South China University of Technology, China)

Feasibility Analysis of Digital Creation of Chinese Traditional Freehand Flower-and-Bird Painting 297
Yifan Du (Northwestern University Modern College, China)

A Study on Emotional Memory Activation in Art Product Design from the Perspective of Customer Co-Production 303
Yuan Cao (Penninghen, France)

Research on the Design of Traditional Kitchenware for People Living Alone Based on the FBS Model 307
Dongming Ma (Beijing University of Chemical Technology, China) and Jialing Peng (Beijing University of Chemical Technology, China)

Research on the Influencing Factors of Strategies for Design Innovation of Domestic Brands Based on the ISM Model 313
HuaMing Peng (South China University of Technology, China) and YuTang Tao (South China University of Technology, China)

Simulations of Car Dynamics: BMW M3 and Chevrolet Cavalier 321
Zhenchun Dong (Shanghai Jianqiao University, China) and Jiale Xue (University of Pittsburgh, USA)

An Asian Games Merchandise Display System with Online and Offline Modes Based on AR Technology 328
Rui Dai (Zhejiang Tongji Vocational College of Science and Technology, China), Zizhen Fan (Zhejiang Tongji Vocational College of Science and Technology, China), Shanshan Chen (Zhejiang Tongji Vocational College of Science and Technology, China), and Qi Li (Zhejiang Tongji Vocational College of Science and Technology, China)

Visual Performance Application of Gelled Patterning and Gilding Based on the Dynamic Theory of Visual Perception 335
Lishan Zhao (Xi'an University of Science and Technology, China) and Jinjing Wu (Xi'an University of Science and Technology, China)

Session 3: Computer Technology and Bionic Intelligent Design

Applications of Computer-Aided Manufacturing in Ceramic 3D-Printing-Path Design 339
Yanhong Jia (Tsinghua University, China)

Research on the Application of Computer Modeling Technology in Product Design -- Taking the Innovative Design of Children's Painting Appliances as an Example 343
Wenming Liu (Shenyang Jianzhu University, China) and Hengbo Huang (Shenyang Jianzhu University, China)

The Application of Computer-Aided Design in Clothing Design 348
Yalin Dong (Nanchang Institute of Science & Technology, China)

Motion Simulation and Force Analysis in Built Car Dynamic Model 352
Yuan Shi (Wuhan University of Technology, China) and Wentao Xu (Jiangsu University of Technology, China)

Exploration and Application of Design Method Based on TRIZ Bionic Functional Solution 365
Zhenpeng Xue (University of Jinan, China), Bing Lv (University of Jinan, China), Hao Wei (University of Jinan, China), and Yantao Li (University of Jinan, China)

Intelligent Search and Rescue Robot Design Based on KANO Model and TRIZ Theory 371
Zilong Yang (Xi'an University of Technology, China), Xiaomin Ji (Xi'an University of Technology, China), Xinyao Tang (Xi'an University of Technology, China), and Xu Li (Lan Zhou University of Technology, China)

Emotional Design and Evaluation of Intelligent Lighting in Family Restaurant Based on DIALux Software 378
Yi Wang (Xi 'an University of Technology, China), Min Zhang (Xi 'an University of Technology, China), and Yixiao Xuan (Xi'an University of Technology, China)

Analysis of the Working Posture of a Certain Type of Command Module Based on JACK 382
Sheng Su (Xi'an Technological University, China), Xuan Fu (Xi'an Technological University, China), Zhiqiang Song (Xi'an Fanyi University, China), Po Hu (Shaanxi University of Science and Technology, China), Ping Liu (Xi'an Technological University, China), and Sen Gu (Henan Mechanical and Electrical Vocational College, China)

Design and Implementation of the Imitation Human Shape Dance Robot 389
Shuiliang Xu (Jiangxi Science and Technology Normal University, China) and Limei Zhou (Jiangxi Science and Technology Normal University, China)

Research on Bicycle Shape Design Method Based on Kansei Engineering 393
Fuyong Liu (Guangzhou Academy of Fine Arts, China), Xun Gao (Guangzhou Academy of Fine Arts, China), Yong Li (Guangzhou Academy of Fine Arts, China), Ruimin Hao (Guangzhou Academy of Fine Arts, China), Wenjie Huang (Guangzhou Academy of Fine Arts, China), and Tao Yang (Guangzhou Academy of Fine Arts, China)

Research on the Construction of Function Model of Smart Sports Venues 399
Baochen Zhang (Nanchang Institute of Technology, China)

Research on the Design Improvement and Function Optimization for Portable Ironing Machine 403
Linzhen Feng (Xi'an University of Technology, China), Bo Li (Xi'an University of Technology, China), and Yu Sun (Xi'an University of Technology, China)

Research on Multi-Sensory Interactive Toy Intelligent Storage Box for Young Children's Behavioral Characteristics 407
Yi Wang (Xi 'an University of Technology, China), Yasong Xu (Xi 'an University of Technology, China), Yujia Jiang (Xi 'an University of Technology, China), Zhi Wang (Xi 'an University of Technology, China), and Jing Niu (Xi 'an University of Technology, China)

Research on Innovative Design Strategy of Intelligent Infusion Set Based on User Needs 412
Jieru Deng (Chengdu Technological University, China), Dengfeng Yang (CETC-30, China), Suixian Yang (Sichuan University, China), and Bingqin Zhu (Chengdu Technological University, China)

Design Method for Visually Impaired People Travel Aids Based on Kano Model 417
Jinge Xuan (Xi'an University of Technology, China), Biyang Xu (Xi'an University of Technology, China), and Bo Li (Xi'an University of Technology, China)

Research on the Design and Optimization Method for Denture Cleaning Machine 422
Jinhui Zhang (Xi'an University of Technology, China), Biyang Xu (Xi'an University of Technology, China), and Bo Li (Xi'an University of Technology, China)

Intelligent Soft Outfit Design under the Natural Experience Innovation of Fiber Materials: In the Case of Designs in a Design Poverty Alleviation Action by the Team 427
Shun Tian (Guangzhou Academy of Fine Arts, China)

Research on the Emotionalization of Shared Office Space Based on the Construction of Ecological Factors 431
Bei Fan (Wuhan Institute of Technology, China), Ying Zhou (Wuhan Institute of Technology, China), and ZheCheng Han (Wuhan Institute of Technology, China)

A Study of the Intelligent Material Towards Fashion Innovation 436
Wang Wen (Guangzhou Academy of Fine Arts, China)

Music Service System and Intelligent Product Design for the Elderly at Home Based on Social Needs 440
Ruibo Song (Shandong Youth University of Political Science, China), Zihui Li (Shandong Youth University of Political Science, China), Xining Yang (Shandong Youth University of Political Science, China), and Zhengxin Tan (Shandong Youth University of Political Science, China)

Diet Life Service System and Intelligent Product Design for the Elderly 445
Ruibo Song (SDYU, China), Pengfei Jing (SDYU, China), Zhengxin Zhao (SDYU, China), and Dongming Ding (SDYU, China)

Research on Intelligent Facility Design of Medical Indoor Space Based on Barrier-Free Design 451
Ning Xian (Shenyang Jianzhu University, China) and Wei Wang (Shenyang Jianzhu University, China)

Research on the Design of Intelligent Hand Hygiene Products Based on Lewin Behavior Model 458
Yangyang Liao (Beijing Institute of Technology, China), Chao Gong (Beijing Institute of Technology, China), and Zhenyu Liu (Beijing Institute of Technology, China)

Research on Technological Innovation Opportunities Based on Patent Analysis and Technological Evolution 466
Miao Li (South China University of Technology, China), Jiaxin Yu (South China University of Technology, China), Zhijuan Yin (South China University of Technology, China), and Qiao Liu (South China University of Technology, China)

Application Research of Intelligent Household Products in Residential Environment 472
Wenming Liu (Shenyang Jianzhu University, China) and Jinghui He (Shenyang Jianzhu University, China)

The Impact of Accessibility of Local Museums on the Visiting Experience under the Intelligent Design Framework 476
Sifan Guo (University of Nottingham, UK)

Design and Research of Intelligent Home Ventilator Based on Kano Model 482
Wei Sun (Xi'an Polytechnic University, China) and Dongfu Li (Xi'an Polytechnic University, China)

A Study on the Design of Smart Wearable Devices for Chronic Disease Monitoring 486
HanShu Yang (Beijing Institute of Technology, China) and Chao Gong (Beijing Institute of Technology, China)

Research on Aging-Adapted Renovation Design of Bathroom Space under the Background of Smart-Home 491
J D Liu (Shenyang Jianzhu University, China) and Y J Liu (Shenyang Jianzhu University, China)

Inheritance and Application of Chinese Traditional Cultural Elements in Modern Interior Intelligent Design 496
Ying Yu (Shenyang Jianzhu University, China) and Xinyi Liang (Shenyang Jianzhu University, China)

Study on Optimal Strategies of Art Design for Slow Travel Environment Oriented to Travel Mode Decision-Making 500
Wei Nie (Anhui Jianzhu University, China), Jin Sun (Anhui Jianzhu University, China), and Jiangxu Jia (Anhui Jianzhu University, China)

Research on Interesting Design in Smart Speakers 506
Jiaqi Wu (Beijing Institute of Technology, China) and Jiujun Cheng (Beijing Institute of Technology, China)

Study on the Design of Indoor Environment Intelligent Guidance System for Aging Based on the Concept of Green Ecology 510
Ying Yu (Shenyang Jianzhu University, China) and Xiaojie Ju (Shenyang Jianzhu University, China)

Research on Smart Home Product Design Driven by Big Data 515
Shengzan Yan (Nanjing Institute of Technology, China), Yajing Hou (Nanjing Institute of Technology, China), and Zhitian Han (Nanjing Institute of Technology, China)

A Tentative Exploration for the Design of Intelligent Household Furniture 520
Jiayi Zhang (Central South University of Forestry Science and Technology, China) and Xinyan Yang (Central South University of Forestry Science and Technology, China)

Research on Preschool Children's Painting Application in Children's Intelligent Furniture 524
Yanting Long (Sichuan Agricultural University, China), Wenying Dong (Sichuan Agricultural University, China; Central South University of Forestry and Technology, China), and Wenxue Luo (Sichuan Agricultural University, China)

Research on Emotional Design of Intelligent Sleep Products for the Elderly Based on Kano Model and Customer Satisfaction and Dissatisfaction Coefficients 528
Liping Liu (Xi'an University of Engineering, China), Awei Zhang (Xi'an University of Engineering, China), Lei Zhang (Xi'an University of Engineering, China), and Jiao Xu (Xi'an University of Engineering, China)

Author Index **533**