

# 包装工程

Packaging Engineering

第41卷 第6期 2020年3月20日

## 目次

### 专题：人工智能与创新设计

- 人工智能在非物质文化遗产中的创新设计研究：以景泰蓝为例  
覃京燕，贾冉 1
- 基于AI画作生成的个性化文化创意产品设计方法  
王晓慧，覃京燕，杨士萱，孙炜焱，全烘辰 7
- 人工智能语境下的情感交互设计  
颜洪，刘佳慧，覃京燕 13
- 基于深度学习的产品外观意象情感计算服务平台研究  
窦金花，覃京燕 20
- 基于智慧工厂的语音交互设计研究  
桂宇晖，刘婧，刘军，宋刚 26
- 基于文献分析的机器人面部表情评估量表研究  
吕菲，林知桦，席瑞，何思南，周茉莉，关岱松 32
- 用户体验研究的发展现状、研究模型与评价方法  
郑杨硕，朱奕雯，王昊宸 43

### 特别策划

- 群智创新：人工智能2.0时代的新兴创新范式  
罗仕鉴 50
- 设计的蝴蝶效应：当生活方式成为设计对象  
辛向阳 57

### 工业设计

- 工程机械内饰的情感评价方法研究  
易军，唐雪琳 67
- 纯电动汽车外饰造型影响因素及特征设计趋势研究  
李勇，武银路 72
- 基于多通道信息对无人驾驶信任度提升研究  
牛东方，陈腾飞，肖楚楚，赵健超，张翌迪 81
- 基于色彩模型的车载指挥方舱设计  
魏蓉，宋志强，苏胜 86
- 医养结合型智慧居家养老服务平台设计  
侯玉梅，傅勘，高秋烨，崔研，徐日，梁萧 94
- 基于情境的移动健身应用设计  
朱上上，郝铮远，董烨楠 104
- 通用视域下多感官通道的视障产品设计研究  
冯豫韬，杨泽辉，宋锦然，邢雅雯 110
- 基于格式塔原理的系列文创产品设计研究  
高洋，马东明，钱皓，智伟 115
- 基于用户特征的适老智能产品设计研究  
杨小静 123
- “契丹鞍”造型设计研究  
王赫德，李正安 127
- 基于地域文化特征的电热水壶造型设计  
陈璐，苏颜丽，朱伟 131
- 基于坐姿矫正器的“智慧书屋”交互系统设计  
李志春，郭志强，翟飞洪，苗秀，赵文帅 137
- 基于情感需求的小户型阅读家具设计研究  
钟光明 144
- 基于心理生理测量方法的座椅舒适性评价研究  
韩宇翔，贾玉岭，李维亮，赵静 150
- 明式椅凳类家具的模件化分析  
颜朝辉 157
- 基于可持续设计视角的社区内儿童玩具共享系统研究  
陈朝杰，钟慧娴，贺奕 162
- 近视运动防护眼镜舒适性评价体系设计研究与实践  
刘小路，丁虹月，韦鑫珠 169
- 快速捕捉目标情境下人机界面视觉工效评价指标体系研究  
冯纾，王军锋，支锦亦，蔡勇，冯登明，王文军，唐星 176

基于社会价值方向的产品迭代设计要素研究  
许晓云, 董姗姗, 张新宇 181

基于“事件”的图形语言模型与表征 张建羽, 易西多 187

基于人群行为特征绿色导向性设计创新研究  
钟蕾, 梁辰, 段松昕 193

基于用户体验的短视频APP设计研究 殷俊, 周梦洁 198

基于沉浸体验的标签式导航转场方式研究 张博, 胡莹 205

基于情感认知的童车前脸造型设计研究  
李闯, 张丙辰, 王艳群, 杨俞玲, 宋丽姝 211

基于荷特征的概念车仿生设计研究 杨明霞, 王崇东 218

可供性在产品中的应用研究 李帅, 冯荟 228

基于服务设计理念的家用呼吸机设计研究 李春, 张玉萍, 孙瑞 232

面向自由行旅游的导游服务设计  
唐星, 王军锋, 施金新, 蒋刚, 冯纾 239

基于眼动实验的电助力自行车电池盒隐蔽性设计评价  
汪柳, 邱越, 褚晓伟, 余琦佩 247

人工智能在艺术设计中的应用 银宇堃, 陈洪, 赵海英 252

艺术品牌设计助力精准扶贫发展  
刘钰舜, 李烁, 刘金得, 陈劲松 262

视觉传达设计

基于第十届全国残疾人运动会暨第七届特奥会会徽设计的  
创意研究 王芝湘 266

形式互动在平面广告创作中的运用研究 晏虹辉 270

公共信息导向系统标准实施的现状和思考 王静蕴, 吴慧兰 275

基于感性工学的糖果包装设计 申小娜, 冯乙, 陈凡, 于祥祥 280

高校设计研讨

论中国传统纹样在包装设计中的应用 相静 286

农产品包装设计研究 张康宁 289

平面设计中视觉与触觉的审美构建 李超 293

民族传统文化在艺术设计中的应用 雷雨 296

儿童书籍设计的新思维探析 林妍 300

基于数字摄影技术的平面设计策略 赵羽中 303

魏晋南北朝高士图中坐具的莲花纹饰特征和意义研究 付小利 307

新余夏布绣的创新与衍生设计 廖江波, 吴婉菁 313

陶瓷文创产品设计的创新表现与发展探析 刘娜娜 318

改性混凝土在公共坐具设计中的应用 刘莹, 王国光 322

优秀设计作品选

湖南工业职业技术学院杨璐、李河谕设计作品选 329

井冈山大学廖洪辉设计作品选 330

华南农业大学欧阳文昱设计作品选 331

东华大学林峰、魏三峡设计作品选 332

沈阳航空航天大学孙明磊、高宏博、刘思浩、王旭设计作品选 333

南京航空航天大学金城学院刘流设计作品选 334

武汉交通职业学院马菲设计作品选 335

湖州师范学院张禄、姜智翔设计作品选 336

东华大学黄更、赵强设计作品选 337

信息索引

封二 重庆五九期刊社简介

《人工智能与创新设计》专题主编、序言介绍

特别策划《群智创新：人工智能2.0时代的新兴创新范式》作者、序言介绍

特别策划《设计的蝴蝶效应：当生活方式成为设计对象》作者、序言介绍

# PACKAGING ENGINEERING

(Initial Issue 1980) (Semimonthly) Vol.41 No.6 (Total No.420) Mar.20, 2020

## Contents

### Special Subject: Artificial Intelligence and Innovative Design

Innovative Design of Artificial Intelligence in Intangible Cultural Heritage:  
Take Cloisonné as an Example *QIN Jing-yan, JIA Ran* 1

Cultural and Creative Product Design Method Based on AI Painting  
*WANG Xiao-hui, QIN Jing-yan, YANG Shi-xuan,  
SUN Wei-zheng, QUAN Hong-chen* 7

Emotional Interaction Design in Artificial Intelligence Context  
*YAN Hong, LIU Jia-hui, QIN Jing-yan* 13

Affective Computing Service Platform of Product Appearance Image  
Based on Deep Learning *DOU Jin-hua, QIN Jing-yan* 20

Voice Interaction Design Based on Smart Factory  
*GUI Yu-hui, LIU Jing, LIU Jun, SONG Gang* 26

Evaluation Scales Study for Robot Facial Expressions Based on Literature  
Analysis

*LYU Fei, LIN Zhi-hua, XI Rui, HE Si-nan, ZHOU Mo-li, GUAN Dai-song* 32  
Development Status, Research Model and Evaluation Method of User  
Experience Research

*ZHENG Yang-shuo, ZHU Yi-wen, WANG Hao-chen* 43

### Special Planning

Crowd Intelligence Innovation: a New Innovation Paradigm in the AI 2.0 Era  
*LUO Shi-jian* 50

Butterfly Effect: When Life Becomes Subject of Design *XIN Xiang-yang* 57

### Industrial Design

Emotional Evaluation Method for Construction Machinery Interior  
*YI Jun, TANG Xue-lin* 67

Trend of Influencing Factors and Feature Design of Exterior Styling for  
Battery Electric Vehicle *LI Yong, WU Yin-lu* 72

Improvement of Trust in Unmanned Driving Based on Multi-channels  
*NIU Dong-fang, CHEN Teng-fei, XIAO Chu-fan,  
ZHAO Jian-chao, ZHANG Yi-di* 81

Design of Vehicle-mounted Command Cabin Based on Color Model  
*WEI Rong, SONG Zhi-qiang, SU Sheng* 86

Smart Medical-integrated Home-based Care Service Platform Design  
*HOU Yu-mei, FU Kan, GAO Qiu-ye, CUI Yan, XU Ri, LIANG Xiao* 94

Design of Mobile Fitness Application Based on Context  
*ZHU Shang-shang, HAO Zheng-yuan, DONG Ye-nan* 104

Multi-Sensory Product Design for the Visually Impaired under the General  
Vision *FENG Yu-tao, YANG Ze-hui, SONG Jin-ran, XING Ya-wen* 110

Design of a Series of Cultural and Creative Products Based on Gestalt Principle  
*GAO Yang, MA Dong-ming, QIAN Hao, ZHI Wei* 115

Design of Intelligent Products for the Elderly Based on User Characteristics  
*YANG Xiao-jing* 123

Shape Design of “Khitan Saddle” *WANG He-de, LI Zheng-an* 127  
The Modeling Design of Electric Kettle Based on Regional Cultural  
Characteristics *CHEN Lu, SU Yan-li, ZHU Wei* 131

“Wisdom Book House” Interaction System Design Based on Sitting Correctors  
*LI Zhi-chun, GUO Zhi-qiang, ZHAI Fei-hong, MIAO Xiu, ZHAO Wen-shuai* 137

Design of Small Household Reading Furniture Based on Emotional Needs  
*ZHONG Guang-ming* 144

Seat Comfort Evaluation Based on Psycho-physiological Measurement Method  
*HAN Yu-hong, JIA Yu-ling, LI Wei-liang, ZHAO Jing* 150

Modularization of Ming-style Chair and Stool Furniture *YAN Zhao-hui* 157  
Children’s Toy Sharing System in Community Based on Sustainable  
Design Perspective *CHEN Chao-jie, ZHONG Hui-xian, HE Yi* 162

- Design Research and Practice of Comfort Evaluation System for Myopic Sports Protective Glasses *LIU Xiao-lu, DING Hong-yue, WEI Xin-zhu* 169
- Evaluation Index System of Visual Ergonomics for Human-computer Interface in the Situation of Quickly Capturing the Target  
*FENG Shu, WANG Jun-feng, ZHI Jin-yi, CAI Yong, FENG Deng-ming, WANG Wen-jun, TANG Xing* 176
- Product Iteration Design Elements Based on Social Value Direction  
*XU Xiao-yun, DONG Shan-shan, ZHANG Xin-yu* 181
- Model and Representation of Graphic Language Based on “Events”  
*ZHANG Jian-yu, YI Xi-duo* 187
- Green Oriented Design Innovation Based on Crowd Behavior Characteristics  
*ZHONG Lei, LIANG Chen, DUAN Song-xin* 193
- Design of Short Video APP Based on User Experience  
*YIN Jun, ZHOU Meng-jie* 198
- The Transition Modes of Tab Navigation Based on the Flow Experience  
*ZHANG Bo, HU Ying* 205
- Design of Baby Carriers’ Face Modelling Based on the Emotional Cognition  
*LI Chuang, ZHANG Bing-chen, WANG Yan-qun, YANG Yu-ling, SONG Li-shu* 211
- Bionic Design of Concept Car Based on the Characteristics of Lotus  
*YANG Ming-xia, WANG Chong-dong* 218
- Application of Affordance in Product Design *LI Shuai, FENG Hui* 228
- Design of Household Ventilator Based on the Concept Service Design  
*LI Chun, ZHANG Yu-ping, SUN Rui* 232
- The Design of Tour Guide Service for Independent Travel  
*TANG Xing, WANG Jun-feng, SHI Jin-xin, JIANG Gang, FENG Shu* 239
- Design Evaluation of Concealment of Electric Bicycle Battery Case Based on Eye Tracking Experiment  
*WANG Liu, QIU Yue, CHU Xiao-wei, YU Qi-pei* 247
- The Application of Artificial Intelligence in Art Design  
*YIN Yu-kun, CHEN Hong, ZHAO Hai-ying* 252
- Development of Precision Poverty Alleviation Promoted by Art Brand Design  
*LIU Yu-shun, LI Shuo, LIU Jin-de, CHEN Jin-song* 262

---

## Visual Communication Design

---

- Creative Research Based on the Design of the Emblem of the Tenth National Paralympic Games and the Seventh Special Olympics  
*WANG Zhi-xiang* 266
- Application of Formal Interaction in Print Advertisement Creation  
*YAN Hong-hui* 270
- Current Situation and Thinking of Implementation of Public Information Guidance System Standards  
*WANG Jing-yun, WU Hui-lan* 275
- Candy Packaging Design Based on Kansei Engineering  
*SHEN Xiao-na, FENG Yi, CHEN Fan, YU Xiang-xiang* 280

---

## Study of College Design

---

- On the Application of Chinese Traditional Patterns in Packaging Design  
*XIANG Jing* 286
- Packaging Design of Agricultural Products *ZHANG Kang-ning* 289
- Aesthetic Construction of Vision and Touch in Graphic Design  
*LI Chao* 293
- Application of National Traditional Culture in Art Design *LEI Yu* 296
- Analysis on the New Thinking of Children’s Book Design *LIN Yan* 300
- Graphic Design Strategy Based on Digital Photography Technology  
*ZHAO Yu-zhong* 303
- Analysis of the Decorative Features and Significance of Lotus in Seats Related to the Pictures of Lofty Scholars in the Wei, Jin, and Southern and Northern Dynasties  
*FU Xiao-li* 307
- Innovation and Derivative Design of Xinyu Grass Cloth Embroidery  
*LIAO Jiang-bo, WU Wan-jing* 313
- Innovative Performance and Development of Cultural and Creative Ceramic Product Design  
*LIU Na-na* 318
- Application of Modified Concrete in Public Seat Design  
*LIU Ying, WANG Guo-guang* 322