

# BIO-DESIGN AND MANUFACTURING

生物设计与制造

**Bio-Design and Manufacturing** (Founded in 2018, [www.springer.com/journal/42242](http://www.springer.com/journal/42242))

Volume 5 • Number 1 • January 2022

Special Issue: Smart Bioelectronics and Biomedical Devices

Guest Editors: N.J. Zhou · L. Ma

EDITORIALS

**Smart bioelectronics and biomedical devices**  
N.J. Zhou · L. Ma 1

**Industry news: the additive manufacturing of nerve conduits for the treatment of peripheral nerve injury**  
Y. Han · J. Yin 6

PERSPECTIVE

**Minimally invasive technology for continuous glucose monitoring**  
X.S. Huang · J.B. Yang · S. Huang · H.J. Chen · X. Xie 9

REVIEWS

**3D bioprinting: current status and trends—a guide to the literature and industrial practice**  
S. Santoni · S.G. Gugliandolo · M. Sponchioni · D. Moscatelli · B.M. Colosimo 14

**Bioreactor design and validation for manufacturing strategies in tissue engineering**  
D. Lim · E.S. Renteria · D.S. Sime · Y.M. Ju · J.H. Kim · T. Criswell · T.D. Shupe · A. Atala · F.C. Marini · M.N. Gurcan · S. Soker · J. Hunsberger · J.J. Yoo 43

**Emerging wearable flexible sensors for sweat analysis**  
W.Z. Heng · G. Yang · W.S. Kim · K.C. Xu 64

**From oral formulations to drug-eluting implants: using 3D and 4D printing to develop drug delivery systems and personalized medicine**  
N.G.A. Willems · M.A.J. Morsink · D. Veerman · C.F. da Silva · J.C. Cardoso · E.B. Souto · P. Severino 85

**The emerging technology of biohybrid micro-robots: a review**  
Z.N. Lin · T. Jiang · J.Z. Shang 107

RESEARCH ARTICLES

**From hardware store to hospital: a COVID-19-inspired, cost-effective, open-source, in vivo-validated ventilator for use in resource-scarce regions**  
M.H. Park · Y.J. Zhu · H. Wang · N.A. Tran · J. Jung · M.J. Paulsen · A.M. Imbrie-Moore · S. Baker · R. Wilkerson · M. Marin-Cuartas · D.M. Mullis · Y.J. Woo 133

**Introducing 3D-potting: a novel production process for artificial membrane lungs with superior blood flow design**  
F. Hesselmann · J.M. Focke · P.C. Schlanstein · N.B. Steuer · A. Kaesler · S.D. Reinartz · T. Schmitz-Rode · U. Steinseifer · S.V. Jansen · J. Arens 141

**Preparation of conductive and transparent dipeptide hydrogels for wearable biosensor**  
Y.F. Jing · A.H. Wang · J.L. Li · Q. Li · Q.Q. Han · X.F. Zheng · H.Y. Cao · S. Bai 153

**Hierarchical platinum-iridium neural electrodes structured by femtosecond laser for superwicking interface and superior charge storage capacity**  
L.Z. Li · C.Q. Jiang · L.M. Li 163

**Bioinspired soft actuators with highly ordered skeletal muscle structures**  
Y.J. Wang · C.B. Liu · L.Q. Ren · L. Ren 174

**Layout design and application of 4D-printing bio-inspired structures with programmable actuators**  
S.Y. Zeng · Y.X. Feng · Y.C. Gao · H. Zheng · J.R. Tan 189

**Epidermal self-powered sweat sensors for glucose and lactate monitoring**  
X.C. Huang · J.Y. Li · Y.M. Liu · T. Wong · J.Y. Su · K.M. Yao · J.K. Zhou · Y. Huang · H. Li · D.F. Li · M.G. Wu · E.M. Song · S.J. Han · X.G. Yu 201

**A 3D-printed microfluidic gradient concentration chip for rapid antibiotic-susceptibility testing**  
H.L. Zhang · Y. Yao · Y. Hui · L. Zhang · N.J. Zhou · F. Ju 210

**Novel pneumatically assisted atomization device for living cell delivery: application of sprayed mesenchymal stem cells for skin regeneration**  
L.X. Zhang · X.T. Yan · L. An · M.J. Wang · X. Xu · Z.L. Ma · M.T. Nie · F.Z. Du · J.Z. Zhang · S. Yu 220

Impact factor: 6.302 (2020)

Further articles can be found at [link.springer.com](http://link.springer.com)

Indexed/abstracted in CNKI, Chemical Abstracts Service (CAS), Chinese Science Citation Database, Current Contents/Engineering, Computing and Technology, Dimensions, EBSCO Discovery Service, EI Compendex, Google Scholar, INSPEC, Institute of Scientific and Technical Information of China, Naver, OCLC WorldCat Discovery Service, ProQuest-ExLibris Primo, ProQuest-ExLibris Summon, SCImago, SCOPUS, Science Citation Index Expanded (SciSearch), TD Net Discovery Service, UGC-CARE List (India), Ulrich's Periodicals Directory, WTI Frankfurt eG

Instructions for Authors for *Bio-des. Manuf.* are available at [www.springer.com/42242](http://www.springer.com/42242)



订阅联系方式

电话: 0571-87952783

邮发代号: 32-325

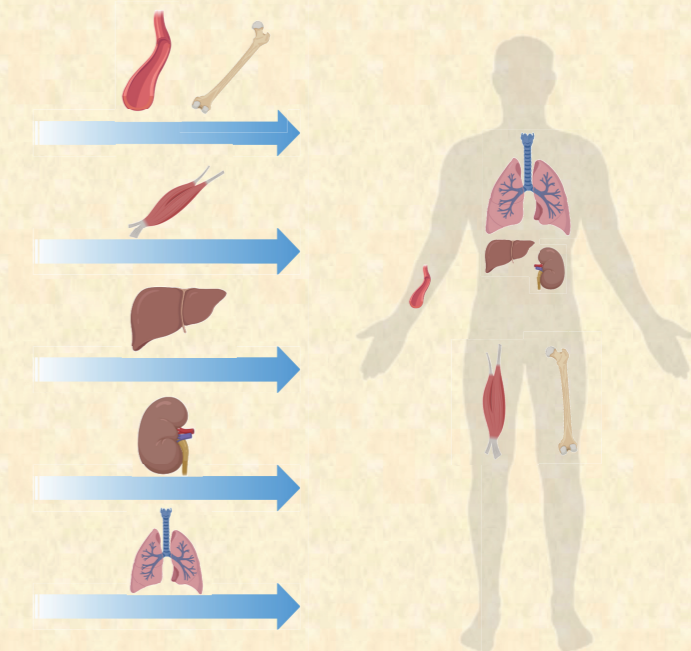
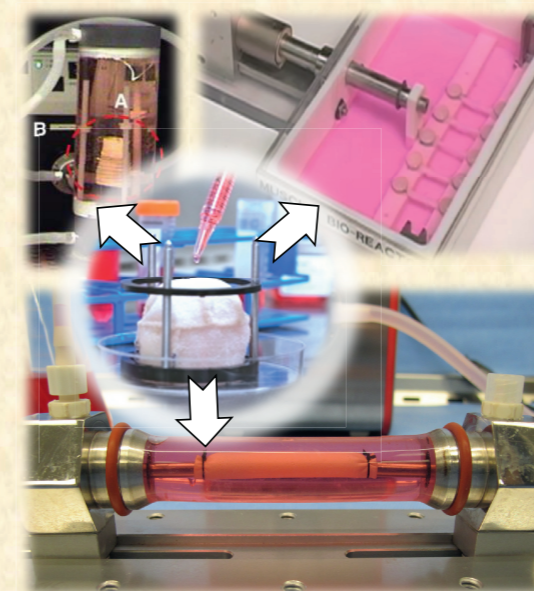
国内每期180.00元

4期/年

ISSN 2096-5524  
CN 33-1409/Q  
CODEN BMIAC3



Editors-in-Chief:  
H.Y. Yang · Z.F. Cui



**Bioreactor design and validation for manufacturing strategies in tissue engineering**

D. Lim · E.S. Renteria · D.S. Sime · Y.M. Ju · J.H. Kim · T. Criswell · T.D. Shupe · A. Atala · F.C. Marini · M.N. Gurcan · S. Soker · J. Hunsberger · J.J. Yoo

