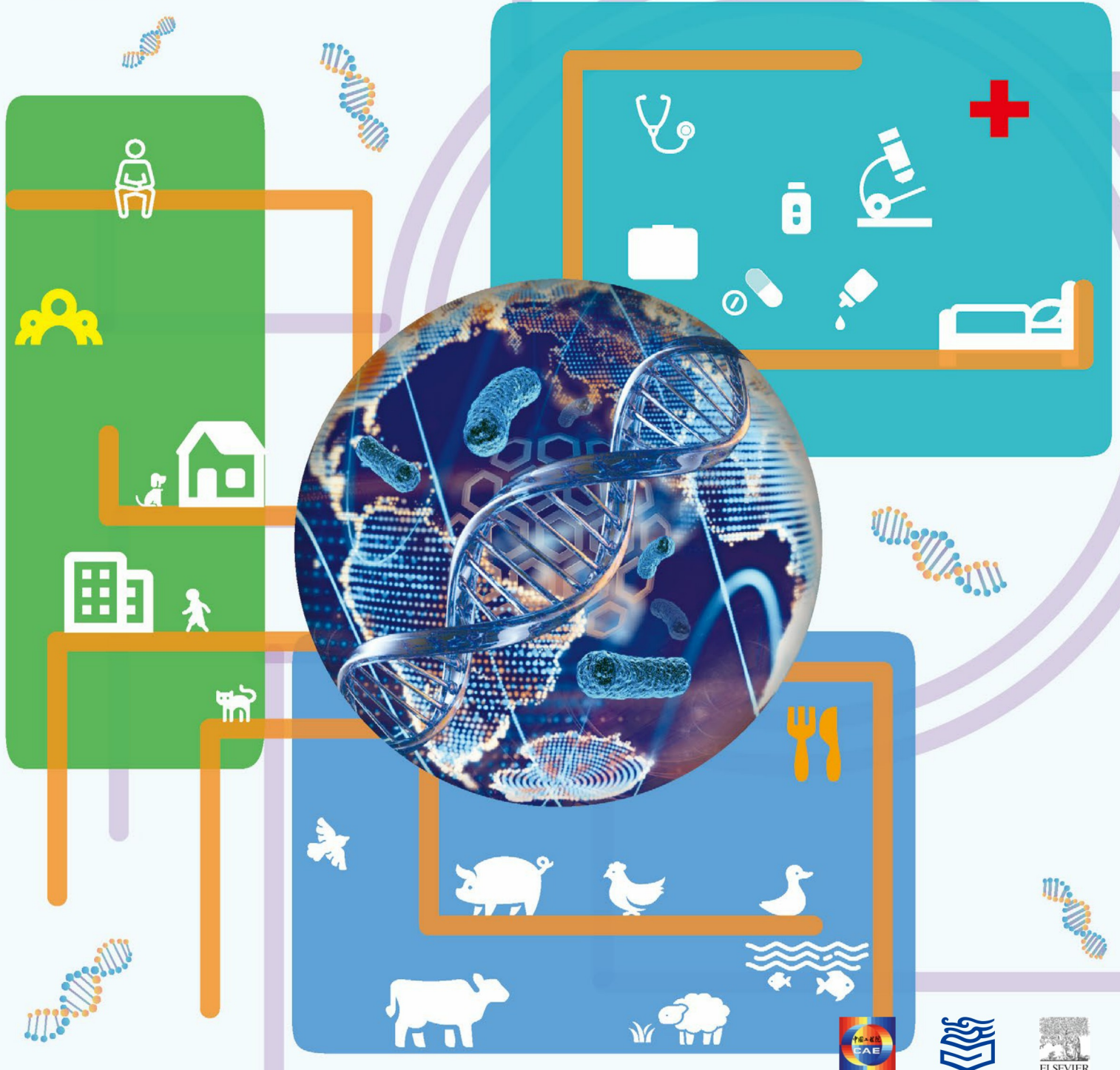


Engineering

August 2022

Antimicrobial Resistance

Pages 24–88



Editorial

- 1 Advances in Antimicrobial Resistance
Jiangzhong Shen et al.

News & Highlights

- 3 Access Issues Spur Local Vaccine Efforts in Developing World
Chris Palmer
- 6 US Regulators Clash Over 5G Rollout and Aircraft Safety
Mitch Leslie

Views & Comments

- 9 Ending the Use of Human Antimicrobials in Food Production: The Good, the Bad, and the Ugly
Timothy R. Walsh
- 11 Antimicrobial Resistance Exchange Between Humans and Animals: Why We Need to Know More
Julian Parkhill
- 13 Coordinated Control of Fine-Particle and Ozone Pollution by the Substantial Reduction of Nitrogen Oxides
Biwu Chu et al.

Engineering Achievements

- 17 The Three Gorges Project
Xinqiang Niu

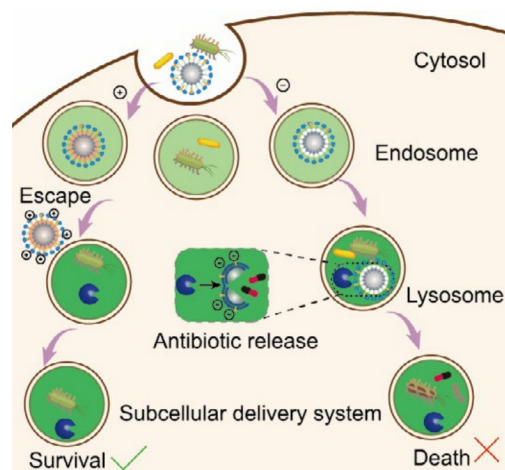
Research

Antimicrobial Resistance—Article

- 24 Transmission of Carbapenem Resistance Between Human and Animal NDM-Positive *Escherichia coli* Strains
Yingbo Shen et al.
- 34 Genomic Epidemiology of ST34 Monophasic *Salmonella enterica* Serovar Typhimurium from Clinical Patients from 2008 to 2017 in Henan, China
Yujiao Mu et al.

- 45 A One-Health Sampling Strategy to Explore the Dissemination and Relationship Between Colistin Resistance in Human, Animal, and Environmental Sectors in Laos
Yuqing Zhou et al.

- 57 A Rigid Nanoplatforrm for Precise and Responsive Treatment of Intracellular Multidrug-Resistant Bacteria
Shaoqi Qu et al.



Page 62

- 67 PAM-Expanded *Streptococcus thermophilus* Cas9 C-to-T and C-to-G Base Editors for Programmable Base Editing in Mycobacteria
Hongyuan Zhang et al.

- 78 Three-Year Consecutive Field Application of Erythromycin Fermentation Residue Following Hydrothermal Treatment: Cumulative Effect on Soil Antibiotic Resistance Genes
Ziming Han et al.

Gut Microbiota and Health—Article

- 89 Reconstruction and Dynamics of the Human Intestinal Microbiome Observed *In Situ*
Xiaolin Liu et al.

New Technology of Tumor Diagnosis and Treatment—Article

- 102 Prediction of Driver Gene Matching in Lung Cancer NOG/PDX Models Based on Artificial Intelligence
Yayi He et al.

Contents

Medical and Health—Article

- 115 Multi-Omics Analysis Provides Insight into the Possible Molecular Mechanism of Hay Fever Based on Gut Microbiota
Pei Han et al.

Public Health—Review

- 126 Vented Individual Patient (VIP) Hoods for the Control of Infectious Airborne Diseases in Healthcare Facilities
J. Patel et al.

Additive Manufacturing—Article

- 133 Formation Process and Mechanical Deformation Behavior of a Novel Laser-Printed Compression-Induced Twisting-Compliant Mechanism
Jie Gao et al.

Watershed Ecology—Article

- 143 Toward Sustainable Revegetation in the Loess Plateau Using Coupled Water and Carbon Management
Fubo Zhao et al.

Environmental Engineering—Article

- 154 Unraveling Membrane Fouling Induced by Chlorinated Water Versus Surface Water: Biofouling Properties and Microbiological Investigation
Li Zhang et al.

Civil Engineering Materials—Review

- 165 Molecular Simulation of Cement-Based Materials and Their Properties
Ashraf A. Bahraq et al.

Cyberspace Security—Article

- 179 Cyberspace Endogenous Safety and Security
Jiangxing Wu

Smart Grid and Energy Internet—Article

- 186 EV Response Capability Assessment Considering User Travel Demand and Cyber System Reliability
Yanli Liu et al.

3D Printing, Flexible Sensor, Superhydrophobic, Magnetic—Article

- 196 3D-Printed Superhydrophobic and Magnetic Device That Can Self-Powered Sense A Tiny Droplet Impact
Xuan Zhang et al.

Intelligent Manufacturing—Article

- 206 A Portable Noncontact Profile Scanning System for Aircraft Assembly
Bing Liang et al.

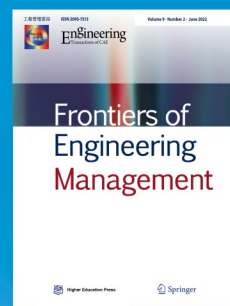
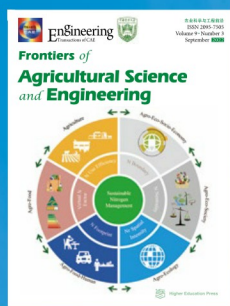
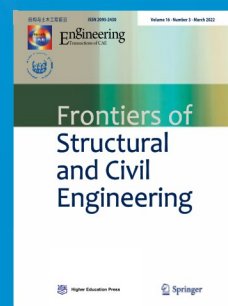
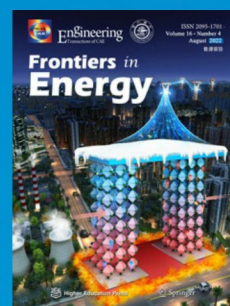
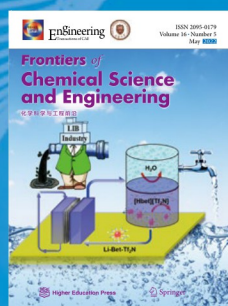


ON THE COVER

The cover image depicts a geomorphic bacterium carrying an antimicrobial resistance (AMR) gene. The branches around the bacterium extend in three different directions, toward representations of a clinical setting, the environment, and animals, some of which are used for human food. As indicated here, AMR can spread among humans, the surrounding environment, and animals; thus, when addressing the issue of AMR, it is necessary to consider the “One Health” concept and acknowledge the connections between human health and that of animals and our environment. This image was conceived by Dr. Lu Yang from the Beijing Center for Disease Control and Prevention.



Engineering



The *Engineering* series journals incorporate a cluster of the Chinese Academy of Engineering (CAE) journals, and are committed to playing the academic leading role of the CAE as the most prestigious academic institution and providing a high-level platform for results release and academic exchange for engineering innovations world-wide.

The *Engineering* series journals are co-published by the CAE, the Higher Education Press, and universities. A “1 + 9

+ 1” journal series has been formed since 2014, including one comprehensive journal of engineering, nine journals of engineering frontiers, and one journal on engineering strategy consultancy. Among the 11 journals, eight are indexed by SCI, five by Ei, and two by ESCI.

Based on the engineering development in China and holding an international vision, the *Engineering* series journals are becoming the most influential academic journal cluster among the engineering community in China.



www.engineering.org.cn