

# Frontiers of Mechanical Engineering

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- 2** Trajectory planning and base attitude restoration of dual-arm free-floating space robot by enhanced bidirectional approach

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Haitao YANG, Chongyang LI**

- 3** Ultrasound-guided prostate percutaneous intervention robot system and calibration by informative particle swarm optimization

**Jiawen YAN, Bo PAN, Yili FU**

- 4** Extended model predictive control scheme for smooth path following of autonomous vehicles

**Qianjie LIU, Shuang SONG, Huosheng HU,  
Tengchao HUANG, Chenyang LI, Qingyuan ZHU**

- 8** Different manipulation mode analysis of a radial symmetrical hexapod robot with leg–arm integration

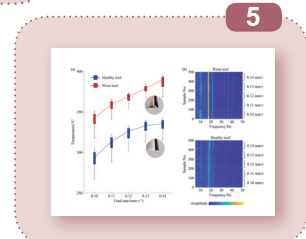
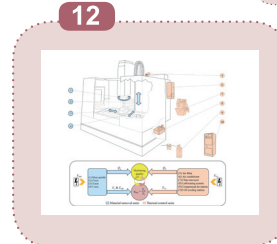
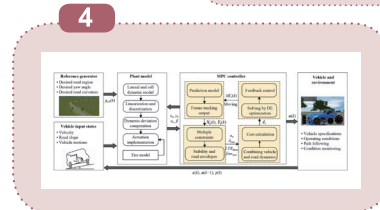
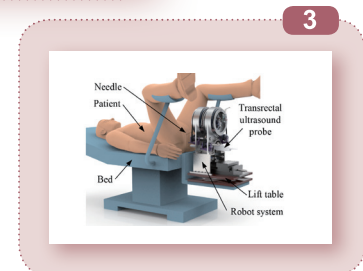
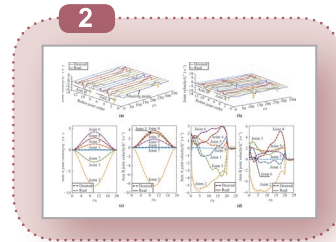
**Yi ZHENG, Kun XU, Yaobin TIAN, Xilun DING**

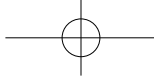
- 12** Coupling evaluation for material removal and thermal control on precision milling machine tools

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- 5** Real-time tool condition monitoring method based on *in situ* temperature measurement and artificial neural network in turning

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- 11 Optimization of aero-engine pipeline for avoiding vibration based on length adjustment of straight-line segment

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- 14 Implicit Heaviside filter with high continuity based on suitably graded THB splines

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- 10 Acoustic fault signal extraction via the line-defect phonic crystals

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- 9 Mesh relationship modeling and dynamic characteristic analysis of external spur gears with gear wear

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- 6 Development of lunar regolith composite and structure via laser-assisted sintering

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- 7 Ultrasonic measurement of tie-bar stress for die-casting machine

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- 1 Integrated slipper retainer mechanism to eliminate slipper wear in high-speed axial piston pumps

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