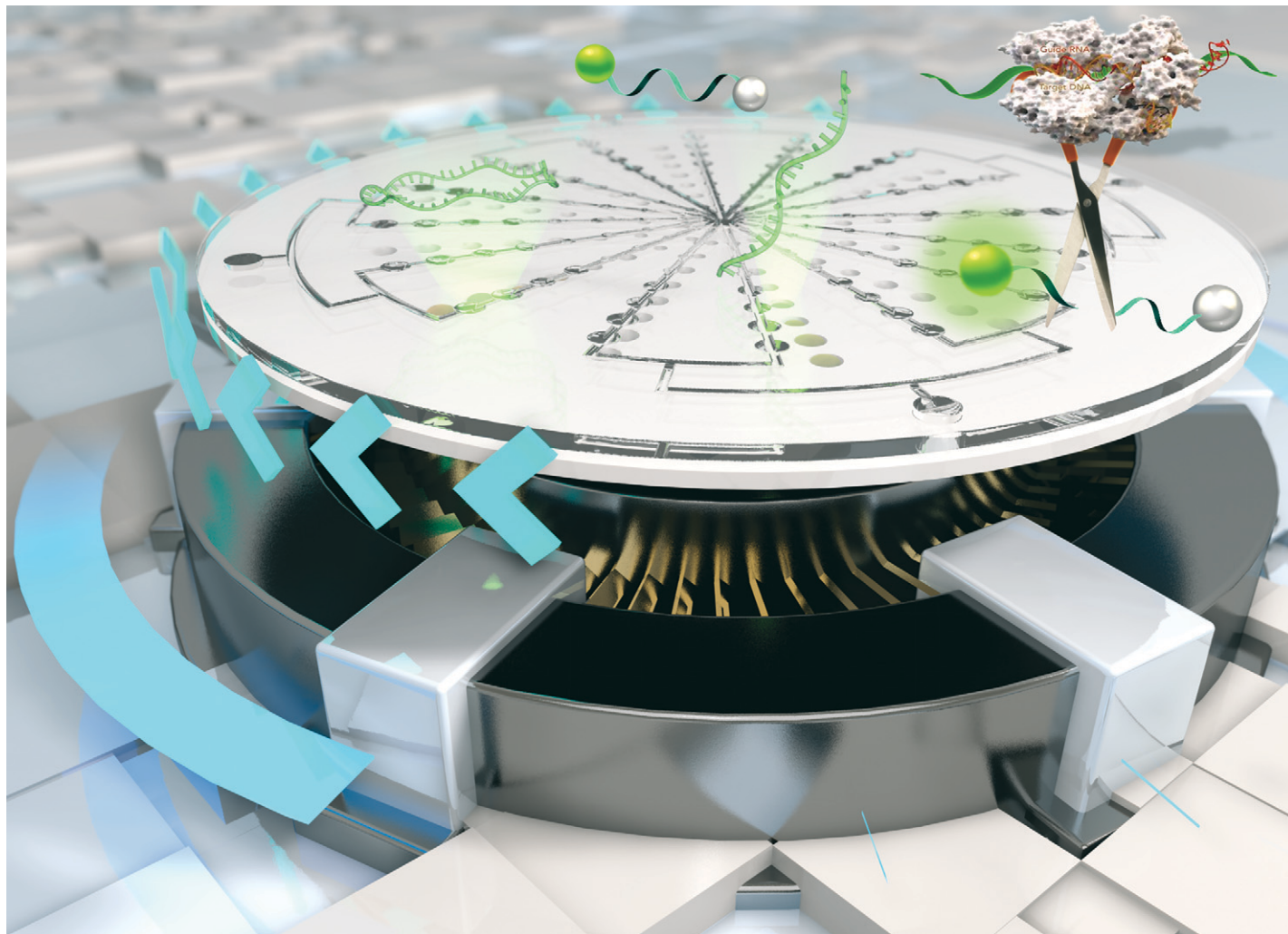




Showcasing research from Professor Jun Yang's laboratory, School of Bioengineering, Dalian University of Technology, Dalian, Liaoning, China.

Modular RCA-CRISPR/Cas12a amplification on a multi-volume SlipChip for ultrafast, single-copy quantification of circRNA and miRNA in ovarian cancer

This study introduces MIRACLE, a modular isothermal amplification method integrated with a microfluidic chip for the ultra-sensitive, rapid detection of ovarian cancer RNAs (circRNA and miRNA) without reverse transcription. The platform achieves detection limits below 1 copy/ μL within 35 minutes. Validated on cell lines and clinical blood samples, it effectively profiled biomarkers and distinguished cancer stages, showing strong correlation with RT-qPCR. This versatile CRISPR-based system offers a powerful tool for portable cancer diagnosis.

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As featured in:



See Jun Yang and Zaian Deng *et al.*, *Lab Chip*, 2025, **25**, 5762.