

RSC Applied Interfaces

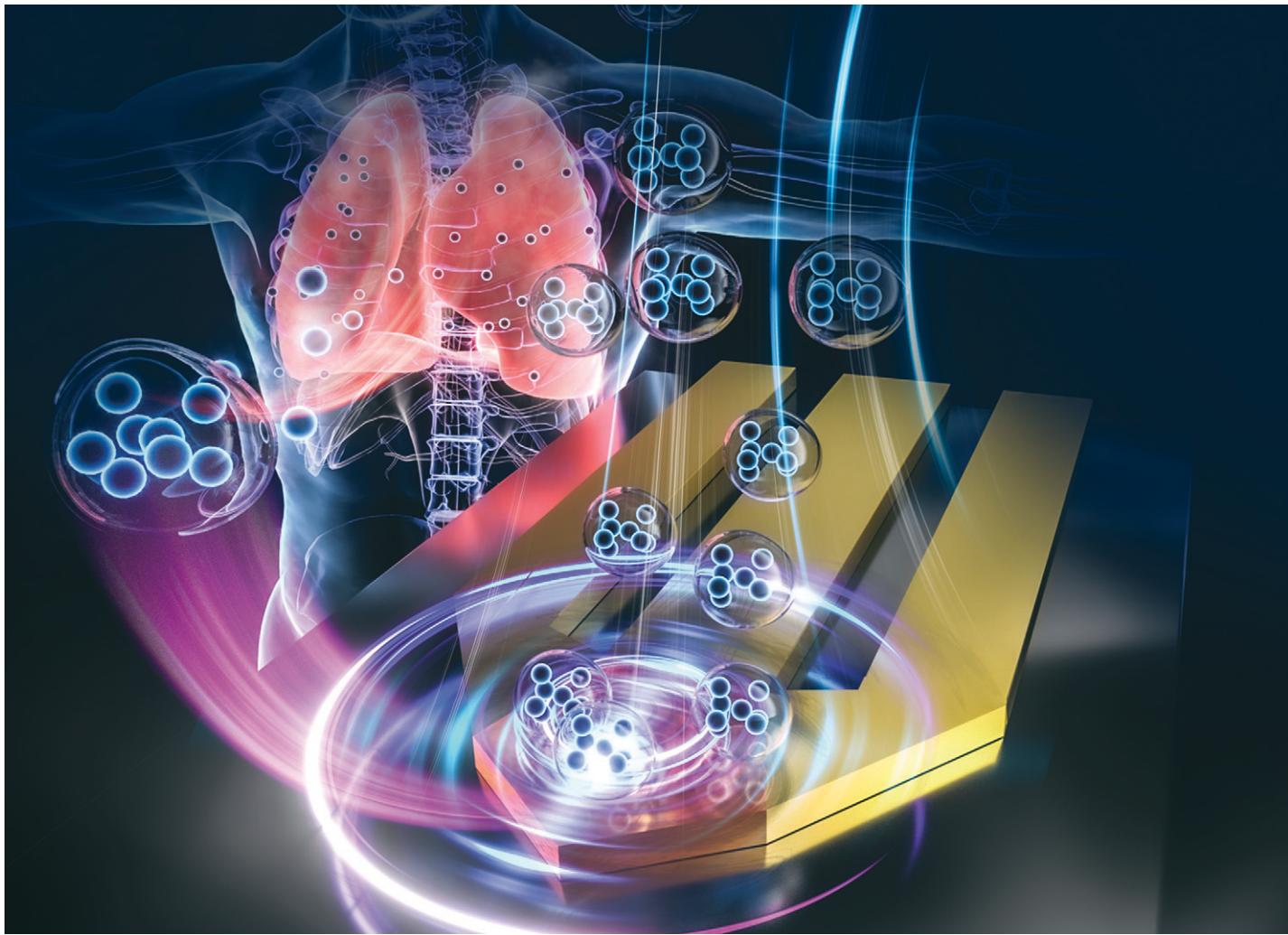
GOLD
OPEN
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Interfacial and surface research
with an applied focus

Interdisciplinary and open access

rsc.li/RSCApplInter

Fundamental questions
Elemental answers



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High frequency capillary wave-enabled ultra-small droplets for inhaled drug delivery

Revolutionizing Inhaled Therapy with GHz Acoustofluidic Nebulization

This work unveils a GHz bulk acoustic wave (BAW) nebulizer that overcomes decades-long limitations in pulmonary drug delivery. By harnessing capillary wave breakup, our portable device generates ultra-small (96% $<5\text{ }\mu\text{m}$), near-monodisperse droplets at ultra-low power ($<1\text{ W}$). This technology pioneers GHz-driven acoustofluidics for next-generation inhaled therapeutics, from nanomedicines to gene therapies.

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As featured in:



See Xuexin Duan *et al.*,
Lab Chip, 2025, **25**, 4898.