

# 20 FOR 20

The technologies with the greatest potential to transform the world over the next decade

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## 5G NETWORKS

Will be critical for IoT uses, from robotic surgery to self-driving cars

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## SHARED MOBILITY

Conventional car ownership models are failing to meet urban mobility trends

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## ADVANCED PLASTIC RECYCLING

Mission-critical for firms from CPGs to chemicals

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## SOLID-STATE BATTERIES

Incumbent Li-ion batteries are hitting a performance plateau

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## PROTEIN PRODUCTION

Next-generation protein are needed to feed a population of almost 10 billion

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## COMMERCIAL VEHICLE AUTOMATION

Improvements in operator efficiency and safety will lower operation costs

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## POINT-OF-USE SENSING

Individualized, real-time data enables new business models for B2B and B2C alike

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## 3D PRINTING

Increasingly being used to manufacture production parts

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## ENERGY TRADING PLATFORMS

Threaten to disrupt conventional electricity retail

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## NATURAL LANGUAGE PROCESSING

Scalable solution to reduce repetitive tasks and improve efficiency

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## HYDROGEN & FUEL CELLS

Will be integral for growing renewables and decarbonizing industry

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## MATERIALS INFORMATICS

Can dramatically speed development time for materials & formulations

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## QUANTUM COMPUTING

Addresses problems that are unsolvable by conventional computers

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## LAST-MILE DELIVERY

Mobility is shifting to incorporate new modes of last-mile transport

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## BLOCKCHAIN

A tool for establishing trust where regular databases can't

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## BATTERY FAST CHARGING

Infrastructure to quickly add range is becoming a need-to-have

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## OMICS

Biological digital twins can address key challenges in medicine, materials, and agriculture

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## 2D MATERIALS

Graphene is displacing conventional materials from composites to electronics

19

## FLOW BATTERIES

Offer support to daily wind and solar fluctuations without relying on natural gas

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## VERTICAL FARMING

Meets consumer demand for local produce using less water, pesticides, and energy