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Next generation intelligent, connected microfluidic platforms for precision, miniaturization and automation in Life sciences and healthcare

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Silicon microprocessor chips have been the cornerstone of technological breakthrough of modern society, empowering individuals and societies to take transformative strides through devices such as smartphones and personal computers. The digital transformation in life sciences and healthcare is driven by the convergence of such technologies that integrate the physical and digital realms while providing the information connectivity for proactive and preventative decision making, an essential aspect of healthcare. At Funai, we have leveraged and repurposed the infrastructure of our silicon and CMOS inkjet technology to create digital microfluidics platforms for applications in research, diagnostics and precision

drug delivery creating a new paradigm in personalized analytical instrumentation and medical devices. These low cost, integrated, miniaturized, connected, and personalized devices break the barriers will continue the momentum into making research productive and digital health mainstream. In this talk I will start with a historical perspective on the silicon inkjet print technologies in life sciences, then describe the building blocks of silicon microfluidics chips, their functionality, system embodiments, key applications and demonstrations and some of the limitations of the technology.

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