BraneCell

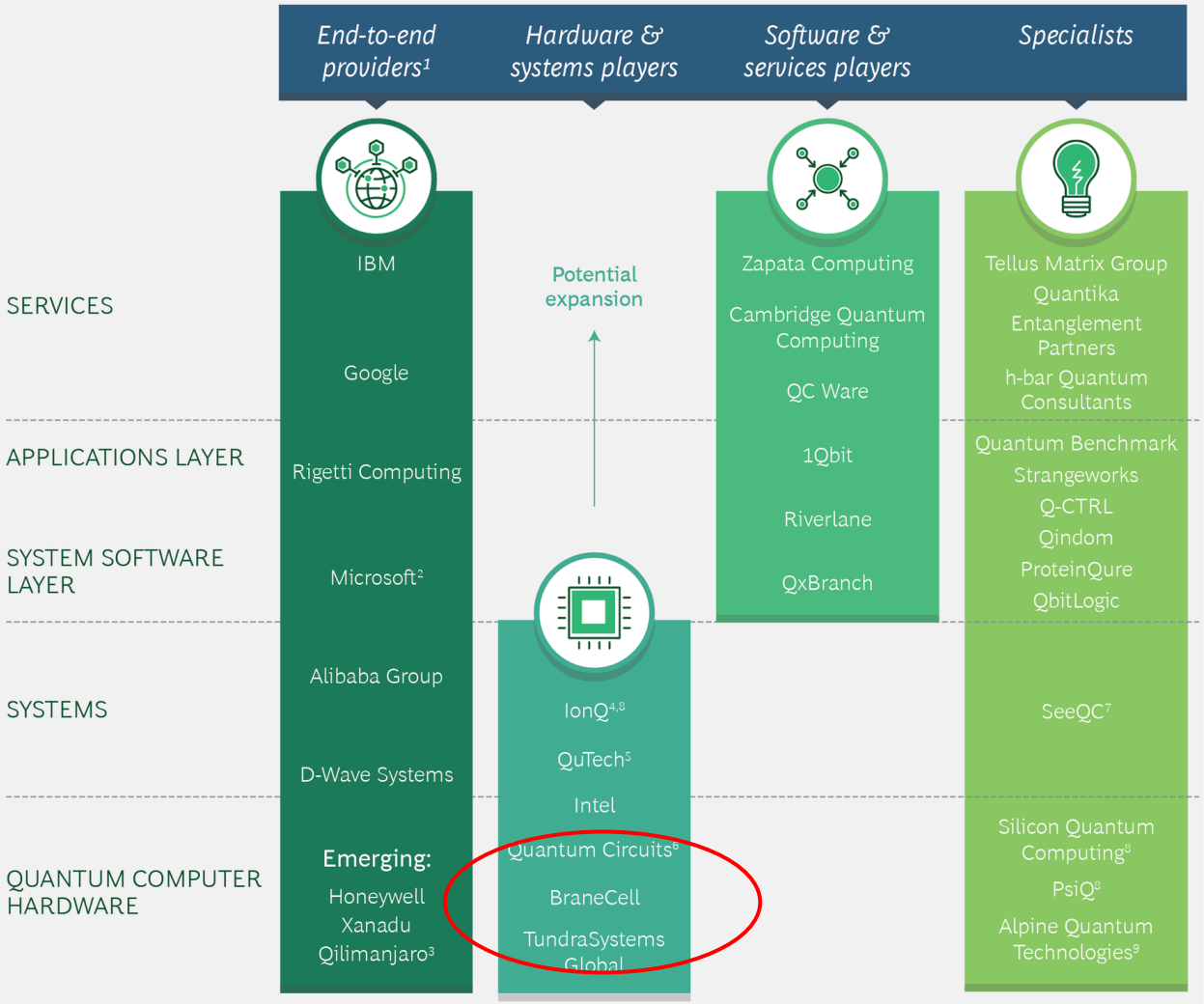
A new basis for Quantum AI, Remote Sensing and Communications.

To: Introduction

5/5/2026

Info@BraneCell.com

EXHIBIT 1 | Companies Assume Four Roles Across Layers of the Stack in the Quantum Computing Ecosystem



Sources: Quantum Computing Report (quantumcomputingreport.com); BCG analysis.
[1]Based on player's ambition with varying levels of maturity and service activities.
[2]Multiple technologies in the labs with focus on topological qubits.
[3]Qilimanjaro is a spinoff from the University of Barcelona.
[4]AWS is invested in IonQ.
[5]QuTech was founded by TU Delft and TNO, and has collaborations with Intel and Microsoft.
[6]Quantum Circuits (qci) is a spinoff from Yale University.
[7]SeeQC is a subsidiary of Hypres.
[8]Vision to become end-to-end provider.
[9]Alpine Quantum Technologies (AQT) is a spinoff from University of Innsbruck.

BCG

BraneCell

10-year Established Brand

*[See **Appendix**.]*

Collaborates with Established US Defense Contractor

[confidential]

Early Quantum Hardware Patents

[Priority date 2012]

Experienced Team

[Credentialed and practical]

New Edge-capable Qubits

[Quantum-advantaged AI, QSDC, Q-Remote Sensing]

(Excerpt from Boston Consulting report)

Info@BraneCell.com | + 1 857 529 7151

Today's Radar, AI, Quantum Technology Challenges

BraneCell

+1 857 529 7151 | Info@BraneCell.com

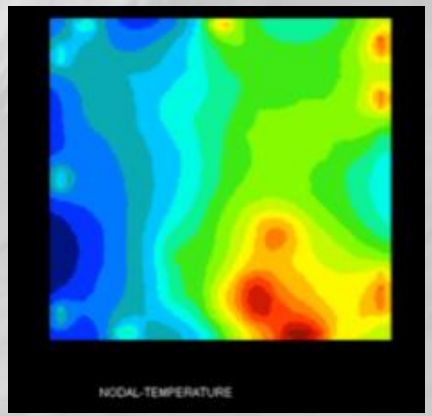
Radar and Spatial AI

1. RAM-surface stealth, plasma sheath, hypersonic glide trajectory, and Aurora all challenges to conventional
2. Quantum X-band radar has issues with background microwave and low energy of echo signal
3. Competitors' quantum anything (too big and too cold) to put onboard (aircraft, drones, trucks, robots…)

Stealth

AI

1. Excessive heat-up, internal temperature gradients lower (40 %) chip life in 24/7 cloud use
2. Excessive investment cost in new fabrication facilities
3. Oligopoly
4. Energy consumption, while AI Chips in use, ultimately hurts nature and people



Conventional AI Chip internal local heating

Quantum Chips

1. Single photon gate operations are delicate
2. Cold temperatures or large footprints---competition not edge capable
3. Specific applications provide exponential speedup (many apps not accessible)

Smaller than Classical

Warmer than Quantum

BraneCell Approx. 110 X smaller Node + Interconnect Feature Size		
	Interconnect + Node (nm^2)	BraneCell shrinkage (improved density)
BraneCell	9	1
3 nm, Samsung	1,010	1/**112**
5nm, Classical	1,530	1/**171**

-We can fit our complete quantum network on their chip replacing only 2 of their transistors.
-We have quantum properties at ambient temperature.

Info@BraneCell.com

New Class of Material for Quantum Information Processing

BraneCell

Our Materials:

Low Cost

Abundant in the USA

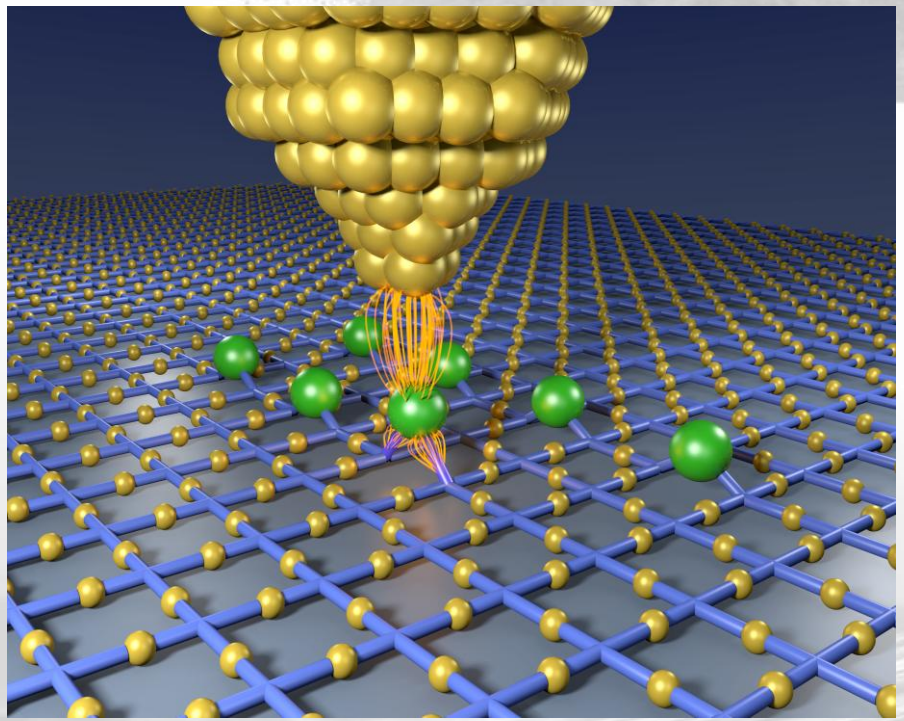
No disposal issues

No heat degradation

Quantum biomimetic.

We will Onshore the Neural Network Fab at 1/100th CAPEX

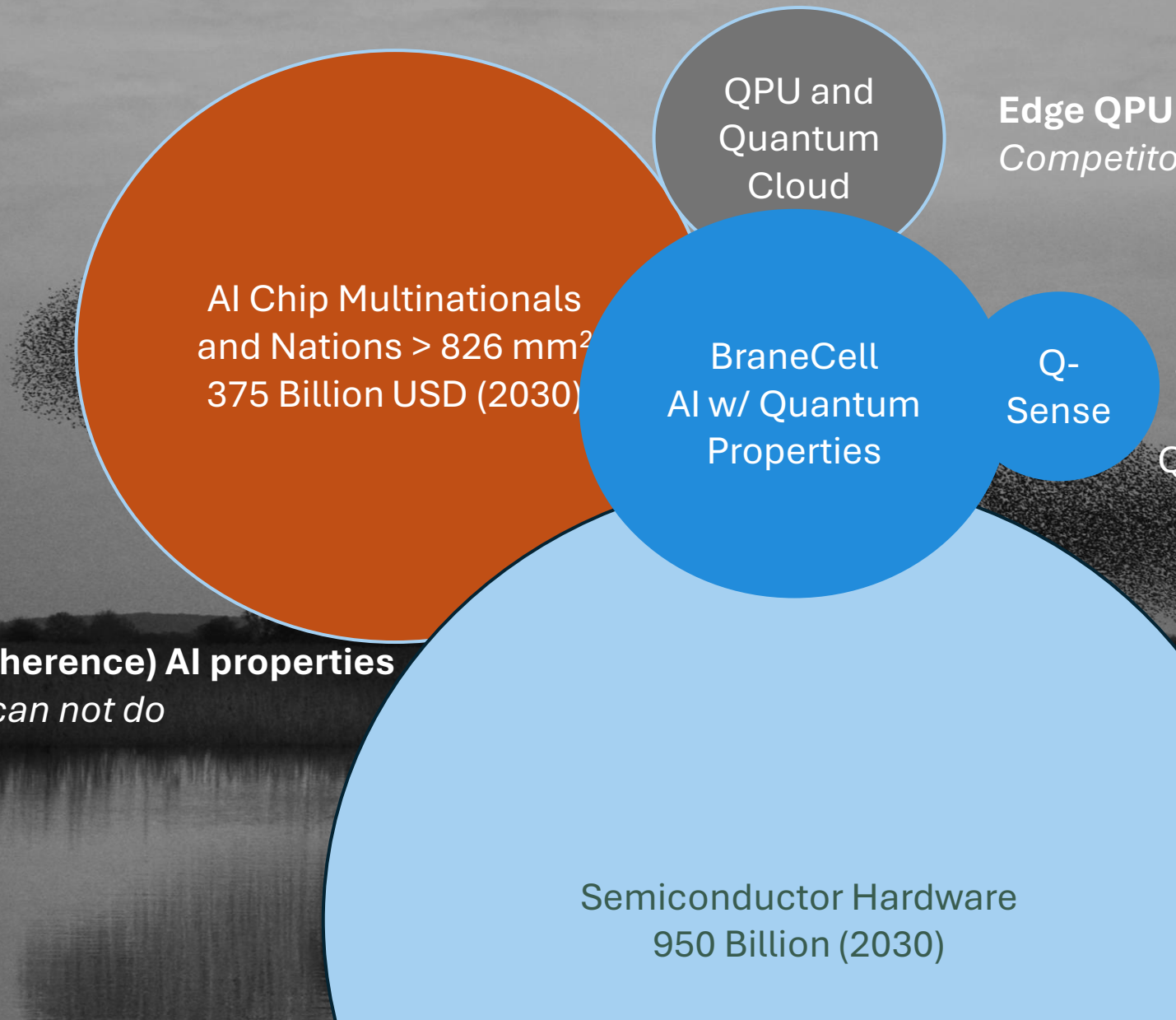
BraneCell



Surface of molecular placement

Development of the newest methods in Atomically Precise Manufacturing (APM) changes the game of chip fabrication, from a > $ 8 Billion CAPEX to a < $ 80 Million Fab facility (at same $/chip, lower throughput per facility). Such Fabs can be distributed/decentralized and application-specific, tailor-made quantum AI chips. This is the frontier of AI chip manufacturing.

Taking a portion of existing chip markets and expanding the QPU, AI and semiconductor chip markets.



BraneCell

Edge QPU
Competitors can not do

$375 Billion TAM Q-AI
$ 50 Billion/yr
Quantum LiDAR/Radar.

Quantum (coherence) AI properties
Competitors can not do

Chiplet may Enhance Classical
Competitors can not do

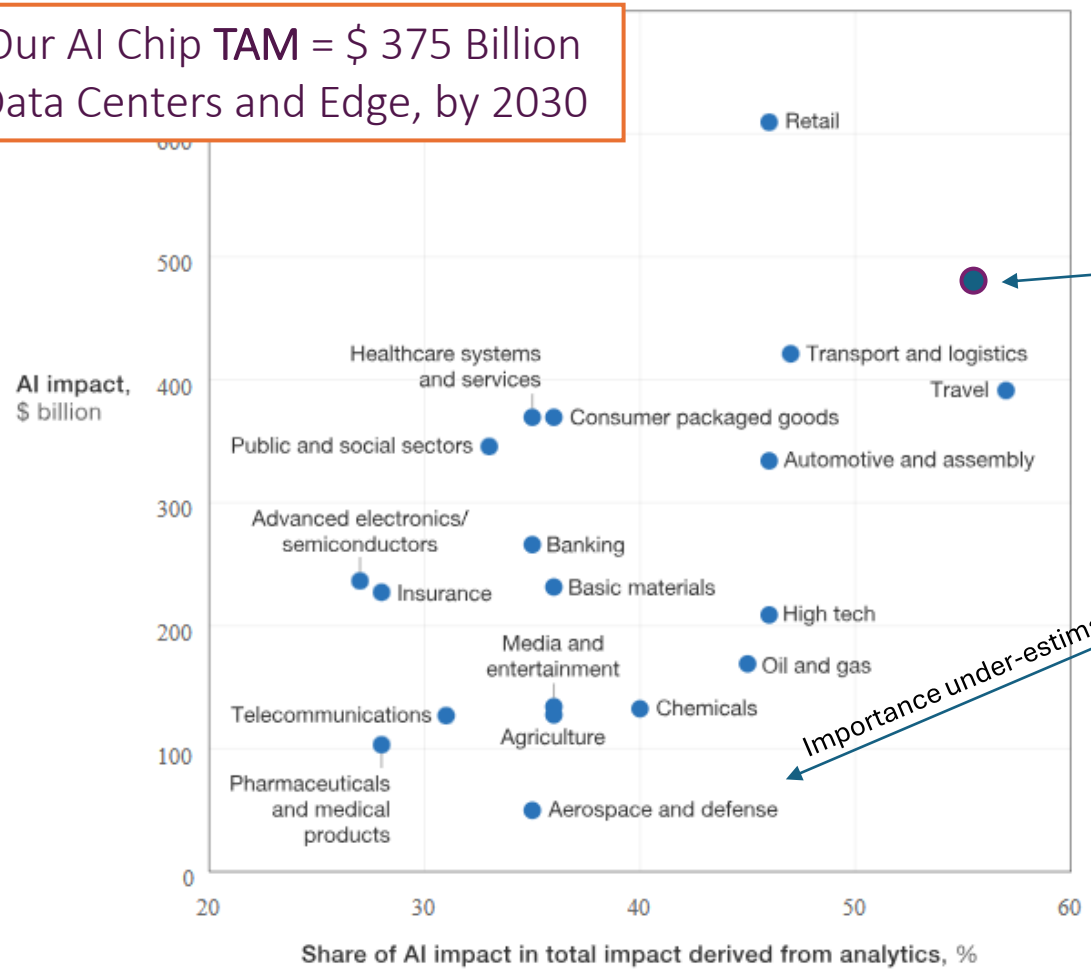
Info@BraneCell.com | + 1 857 529 7151

Markets: Big Revenue and Big CAGR

BraneCell

Artificial intelligence (AI) has the potential to create value across sectors.

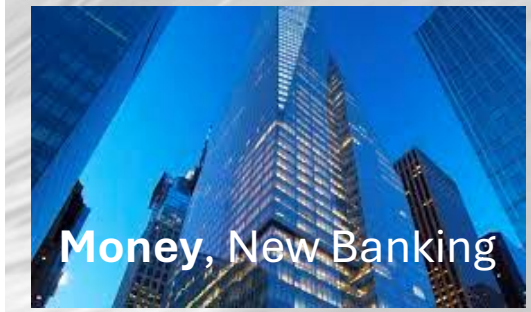
Our AI Chip **TAM** = $ 375 Billion
Data Centers and Edge, by 2030



McKinsey&Company | **Source:** McKinsey Global Institute analysis

NLP $ 49.4 Billion,
CAGR 25.7

Importance under-estimated by McKinsey



Quantum and AI Companies' Valuations

Buyers and Partners

BraneCell

- **IonQ** Market Cap = **$ 19.3 Billion**
- **Rigetti** Market Cap = **$ 11.7 Billion**
- **Quantinuum** Valuation = **$10 Billion**
- **PsiQuantum** Valuation = **$ 7 Billion**
- **Xanadu** valuation = **$ 3.6 Billion**
- **Nvidia** Market Cap **= $ 4,380 Billion**
- **OpenAI** Market Cap = **$ 510 Billion**
- **xAI** Valuation = **$ 200 Billion**
- **Groq** (AI Chip) valuation = **$ 6.9 Billion**

Key BraneCells

Christopher Papile, Ph.D.

Inventor and Investor

- Advisor to the leadership of **PsiQuantum**
- Global Head ThyssenKrupp New Technology Task Force; we did an IPO, became **TK Nucera** (XETR:NCH2)
- Led part R&D **ExxonMobil**/Technip 50/50 JV, developed billion-dollar product, BPA.
- Co-started Arthur D. Little's spinout (**Nuvera**), a startup that became today's established, profitable company.
- Co-started, from Novartis, **Solvias** AG, a startup that became established company that is still successful today.
- Offered a solution to the oldest (150-year-old) Quantum Paradox, *Loschmidt*
- Won & Principal Investigator for $ 28 Million federal grants; > 60 patents & scientific peer-reviewed articles.
- **Ludwig-Maximilians-Universität, NATO, U. of Delaware Ph.D.,** research precise atomic structures on surfaces, **Brookhaven National Lab Synchrotron Light Source.**

Lauren Sammes, Ph.D.

SVP Materials

- Distinguished and Chaired Professor **Colorado School of Mines**
- Chaired Professor **University of Connecticut**
- Co-founder and CTO of **LERC**, the start-up raised $ 43 Million
- Previous **Max Planck** Alexander von-Humboldt Fellow
- Frequently USA Grant Principal Investigator
- Visiting scholar in S. Korea, Japan, Germany (world-class scientist)
- > 200 peer-reviewed scientific publications; Ph.D. **Imperial College, London.**

BraneCell

Info@BraneCell.com | +1 857 529 7151
HUBZone

Dr. Christopher Papile
and BraneCells (team)

Reassessing Hamiltonian Mechanics:

Implications for Quantum Technology Product Design

Where: WVU Department of Physics and Astronomy, Condensed Matter Physics (CMP)

When: May 15

Christopher Papile, Ph.D., BraneCell

Career Bio: Ludwig-Maximilians-Universität NATO Fellowship; Ph.D. University of Delaware; EXAFS at Brookhaven National and Cornell University Synchrotron; former Global Head New Technologies Thyssenkrupp (we did IPO as Nucera); co-started Nuvera Fuel Cells; Director of Portfolio Growth ExxonMobil/Technip 50/50 licensing JV; advisor to PsiQuantum; 60 patents, publications, books and Open Access articles.

Abstract:

Multipartite entangled systems are key for building products, but solution strategies are hampered by a gap in design tools, which are still maturing. Frontier physics is asked by market-place expectations to build-and-cross a bridge at the same time. In this seminar a new approach to the governing quantum correlation (QC) equations is described, which provides design insights for practical products. The new fundamental approach delineates QC features; wavelength-pathlength comparable regime, pre-first wavelength structure; spin and orbital angular momenta; superposition; Hadamard insights; and normalized wave velocity. Further we map quantum neural network synchrony/complexity basis towards useful quantum-enhanced machine learning. Reformulation of Hamiltonian Mechanics provides a new vantage point to assess product potential. Surprisingly, some of the heavily invested modes in the global, industrial, quantum-technology ecosystem will likely reach an impasse. With over a decade of industrial quantum technology experience, Dr. Papile will touch-on quantum-product strategies: what can be built now and what quantum-based products physicists/engineers should hope to build.

Selected Brand Links

(2) BraneCell (@BraneCell) / X	Twitter
https://www.dropbox.com/scl/fi/c85qz1p53kn6jerm4pegq/program-IMS-Summit.pdf?rlkey=2m54de3rtsp0t7ip780o7md4p&st=7k8l3tz8&dl=0	IMS Summit Keynote
https://www.dropbox.com/scl/fi/fjj53ljq07pdaltyjkebs/Reformulating_Hamiltonian_Mechanics_by_C_Papile-BraneCell_at_WVU_2026.pdf?rlkey=7hcq28phspf5157nt5pvry0vi&st=qb8k43ab&dl=0	May 15, 2026 seminar at WVU Physics Department
(8) Post | Feed | LinkedIn	Dr. Papile speaking at Universität Düsseldorf, Institut für Theoretische Physik
IQT Europe Announces Dr. Papile, CEO of BraneCell, Will Speak on 'Quantum Chips, Quantum Memory and Quantum Materials' Panel 10/29 - Inside Quantum Technology	Dr. Papile speaking at IQT, The Hague, Netherlands
BraneCell on X: "Come join the fun and the future! Panel is in 2 hours. #Zukunft #KuenstlicheIntelligenz #Duesseldorf #Industry40 #Deutschland #California" / X	Keynote Speaker at the Artificial Intelligence Conference, AI in Quantum Computing
PMI-KSA-20181219-AwardCeremony-DrChristopherPapile.mp4	Dr, Papile for quantum computing in Saudi Arabia
https://t.co/7UTXTy2HXn" / X	BraneCell award received in Saudi Arabia
PMI - KSA Symposium on X: "#المشاريع_اداره_موتمر_2018 https://t.co/modYxWkZtq" / X	Dr. Papile speaking in Saudi Arabia
https://www.dropbox.com/scl/fi/uyotkcbn40pk938innrp7/Lockheed-examination-of-BraneCell.pptx?rlkey=lcv27nr9prihiklnwg5h52rox&st=e9p1wnh4&dl=0	Lockheed Martin working together email, with permission to show.
AST's Partnership With BraneCell, LLC Extends Benefits Received from Improved Information Processing Technologies – Allegheny Science and Technology	BraneCell and AST (women-owned Federal contractor)
AST and BRANECELL Announce Their Partnership to Improve Critical Government Functions Through the Power of Quantum Computing – Allegheny Science and Technology	BraneCell partnership with AST
BraneCell Presents On-location Quantum Processors for Chemical, O&G and Industry 4.0	Announcing new BraneCell partner
Natural Quantum:. Science, Paradigms and Products | by BraneCell Systems | Medium	BraneCell Medium post
BraneCell Systems – Medium	7 Medium posts by BraneCell
BraneCell | VentureRadar	Venture Radar
BraneCell | Morgantown, WV, USA Startup	GUST Profile a year out of date
BraneCell Systems Presents Distributed Quantum Information Processing for Future Cities	BraneCell Dubai, UAE, guest speaker and press release.
Digital-catalysts for Chemical, Energy and O&G | by BraneCell Systems | Medium	Medium, Chemical, Oil, Gas Industry Applications for Quantum
Digital Transformation and Quantum-DX for EPC | by BraneCell Systems | Medium	Quantum computing for the EPC industry
BraneCell: Overview | LinkedIn	BraneCell Linkedin
(8) Post | Feed | LinkedIn [year 2024]	Dr. Papile remote server and data center power.
https://www.dropbox.com/scl/fi/v68ej1p5kisi7cgthokuz/BCG-Graph-BraneCell.png?rlkey=yxbfjxwodrf3rrwiwcqqjk8sh&st=3qk2cx6i&dl=0	BCG Lists BraneCell, a quantum hardware company to watch.