# GenMat: The Future of Physics Al



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#### **Every Human Being Is A Physics Genius**

- Intuitive understanding of classical physics
- Evolved intuition over billions of years
- <u>Sensing, simulation and engineering</u> are strong suits



#### Physics Is A Proxy To Economic Power

- Only 3 countries can build jet engines on their own:
  - USA, Russia and France
- Only 1 country can create the best semiconductor chips:
  - <u>Taiwan</u>

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- Rare Earth Element (REEs) controlled
  - <u>China</u>



### Physics AI Will Disrupt Geopolitics

 Better sensing combined with Physics AI enables faster, cheaper resource exploration

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- Engineering advancements will happen faster with Physics AI
- Physics AI will enable the onshoring of supply chains





#### **Commercializing The Manipulation Of Matter**

- Technology companies started in the 20th century focused on the <u>manipulation of information</u>
- Google, Apple, Microsoft are examples

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Technology companies of the 21st century will focus on the manipulation of matter!



#### Artificial General Physics Intelligence (AGPI)

- AGPI is the superhuman ability to <u>sense, simulate and engineer any form of matter</u>
  - Better, cheaper and more reliable:
    - Energy;

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- Transportation; and
- and Consumer Electronics.
- AGPI will cause the cost of energy and intelligence to <u>TREND</u> towards zero
- Countries who adopt Physics AI along the path to AGPI will secure their sovereignty
- America will be the birthplace of AGPI (if we succeed)



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- Creating products and services around new technical capabilities
- Starting with teaching AI about the world of atoms
- Researching and developing materials for photosynthesis, lithium ion batteries and superconductors **today**
- Reducing the cost of mineral exploration
- Engaged in enterprise discussions for use of our proprietary physics based AI product and materials synthesis services







GenMat Artificial Photosynthesis Materials and Reactor



#### What Our Physics AI (ZENO) Sees







# ZENO Imagines and Suggest New Materials

- Task: de novo generation of layered Li-ion cathode structures [Li (Ni, Mn, Co) O<sub>2</sub>] with low formation energy
- <u>Result</u>: Rapid generation of diverse low-energy candidates

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- ~ 1 second per structure out of
  ~ 1 million possible
  combinations of atoms
- Accelerate high-throughput screening and sampling





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#### **GENMAT-1 Satellite Developed**



GENMAT-1 Planned Launch **Early Nov, 2023** Going up on the **SpaceX Falcon 9** Rocket Will fly **over 500 km** above surface of the Earth Makes a trip around the planet **every 90 minutes** 

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#### **Next Steps**

- Using the GENMAT-1 Hyperspectral Remote Sensing Satellite, scan the <u>Comstock Lode District</u>
- Apply our Physics AI to GENMAT-1 Data + 150 Years of Comstock Historical Data (at surface and depth)
- Validate Existing Targets
- Exploit Targets More Effectively
- Partnering With Select Mines
- Engineering New Materials (solid-state electrolytes for lithium ion batteries, artificial photosynthesis nanoparticles and new superconductors)

