Linzhi Semiconductors

Linzhi Working Papers
No 1

About Linzhi.

by Sonia Chen

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Linzhi Ltd

Linzhi Ltd., known as **Linzhi**, is a semiconductor manufacturer based in Shenzhen, China founded by Chen Min, the co-founder of Canaan Creative who also designed the first Bitcoin Mining ASIC. It produces application-specific integrated circuits (ASICs) for initial use in accelerating Ethereum and Ethereum Classic's ethhash algorithm. The first product is called Lavasnow and is claimed to use 1/8th the electricity compared to the current competitor and computes 1,400 million hashes per second to generate roughly $20 per day. [1] Lavasnow is set to launch in April of 2019.[2][3][4]

Linzhi has spent $4 Million on production of Lavasnow.[5]

Linzhi Ltd.	
Type	Private company
Industry	Semiconductors Computer hardware
Founded	2018
Founder	Chen Min
Headquarters	Shenzhen, China
Area served	Global
Key people	Chen Min
Products	Semiconductors Computer hardware
Number of employees	Approximately 10
Website	Linzhi Ltd (https://linzhi.io/)

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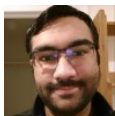
External links

- Official website (https://linzhi.io/)

A New Line of Powerful ASIC Miners Is Coming to Ethereum

Nikhilesh De

☐ Sep 13, 2018 at 16:05 UTC   Updated Sep 13, 2018 at 19:15 UTC

A chip designer with extensive experience in developing bitcoin mining devices is turning her sights on the ethereum protocol.

Chen Min, the former chief chip maker at bitcoin mining chip developer Canaan Creative, launched a new venture to build cryptocurrency mining devices called Linzhi. The firm's first project tackles the ethhash algorithm used by ethereum and ethereum classic, with a new line of application-specific integrated circuits (ASICs) miners set to be released sometime next year.

Dubbed Project Lavasnow, Linzhi's new ethereum miner claims to use 1/8th the amount of electricity as Bitmain's ethash miners, according to a presentation Chen developed for the Ethereum Classic Summit held this week. It also expects to run 1,400 million hashes per second, compared to 190 from one of Bitmain's AntMiners.

The increased hashpower means one of Linzhi's miners should generate roughly $20 per day, compared to a projected $3 from a Bitmain miner. As a result, the company expects customers to break even on the cost of a miner within four months of purchase.

Linzhi did not announce how much each miner would actually cost.

At present, the company is still working on developing the product. Customers may begin receiving their miners in April 2019, according to the presentation.

While many individual miners and members of the ethereum community at present are opposed to ASICs, Chen said in her presentation that hardware alone does not cause centralization.

Rather, "it is the style of the business," she said.

The leader in blockchain news, CoinDesk is a media outlet that strives for the highest journalistic standards and abides by a strict set of editorial policies. CoinDesk is an independent operating subsidiary of Digital Currency Group, which invests in cryptocurrencies and blockchain startups.

ASICs   Ethereum   Canaan   Canaan Creative   Linzhi   Lavasnow

A Multi-Million Dollar Bet Ethereum's Proof-of-Stake Isn't Coming Soon

Rachel Rose O'Leary

☐ Oct 4, 2018 at 23:00 UTC   Updated Oct 6, 2018 at 09:35 UTC

What if ethereum never switches its core consensus algorithm?

It's an idea that may sound blasphemous to developers building the world's second-largest blockchain, where plans have long been laid for a transition away from bitcoin's proof-of-work model to a more egalitarian alternative. Yet, entrepreneurs appear to be betting that between now and that bright future, a small fortune might be waiting.

Already, several mining companies have invested millions in building specialized mining chips for ethereum, machinery that will only function as long as the network pays out new cryptocurrency to those who dedicate computing hardware to the effort.

One such investor is Chen Min, CEO and founder of Linzhi, a Shenzhen-based, startup that has spent $4 million in pursuit of designing the fastest specialized mining chip, or ASIC, for ethereum. An industry veteran, Chen was previously the lead ASIC designer at Canaan Creative, one of three (largely bitcoin-focused) mining firms that have dominated the production of crypto hardware over the last decade.

However, she's since departed to try her hand in making machinery for ethereum, already investing amply in the goal.

"The cost to get to first silicon and sample machines is roughly $4 million. Additionally we have our ongoing cost of operations, salaries, office, which are all modest, lean and efficient," Chen said.

Announced in September, Linzhi's ASIC promises to overtake previous ethereum ASIC designs, featuring high improvements to energy efficiency and computing power. Still, the mining chip will only function on ethereum if the blockchain keeps its current code-base.

But Chen isn't too concerned.

"I don't know if [ethereum] will or will not switch to proof-of-stake," she told CoinDesk. "Proof-of-stake has a lot of problems."

Evidence exists that Linzhi isn't alone in this position. As detailed in CoinDesk, mining giant Bitmain released its ethereum miner, the Antminer E3, back in March, while Innosocilion announced three ethereum miners in July.

While Chen recognizes the inherent risk of introducing an ASIC in such an unpredictable environment, she told CoinDesk:

> "The information is open, we are not hiding that risk. Our customer can decide to buy or not."

High-risk climate

Also backing Chen's conviction is the idea that proof-of-work is simply a better system for managing the distribution of cryptocurrency rewards. In this way, Chen described a possible proof-of-stake switch as "not a smart thing."

"There are so many people, so many users, developers and hardware invested in that coin. If they ignore the work that has been done and switch to proof-of-stake, maybe later they can also ignore your stake and switch to proof-of-some other idea," Chen said.

But there's other risks facing ASIC mining on ethereum as well.

At a core developer call last week, the engineers behind ProgPoW – a proposal that would change the code to only allow GPU miners as an alternative to ASICs were in attendance. Though still in the proposal stage, if executed, ProgPoW would effectively disable ASICs from mining on ethereum – and momentum is building toward the implementation.

Chen, however, argued that such ideas are little more than knee-jerk reactions, ones that don't actually provide solutions to some of the concerns about how ether rewards are distributed in the community at large.

"ProgPoW is being pushed by large farms that have not disclosed their real intentions," Chen said, adding:

> "The fear of Bitmain is driving the [ethereum] community into the arms of some very powerful well-funded farms that they don't even know about."

Kristy-Leigh Minehan, a leading developer behind the ProgPoW switch, pushed back against this claim, arguing that "large-scale GPU farms don't really exist." In a sense, Minehan is making the case that GPUs can promote a larger number of participants in securing ethereum, something she argues ASICs, due to their cost and operational requirements, cannot.

Benefits to hardware

More broadly, the push for ProgPoW is typical of what has been termed crypto's "war on miners," in which several cryptocurrencies have moved to remove ASIC hardware manufacturers from their respective networks.

Yet according to Chen, much of the conversation about removing ASICs from ethereum lacks an awareness of the kind of advantages specialized hardware can bring to a cryptocurrency project.

"Our chip is optimized, specialized for ethereum, not only for mining, but also for verification and node operation, so I'm very curious about why people think it is wrong," Chen told CoinDesk.

Chen added that specialized hardware is often condemned on moral, not rational, scientific grounds.

Pointing to scaling challenges faced by ethereum, Chen theorized that advancements in mining hardware could even help ethereum overcome its current concerns about scaling to more people and more transactions.

"[Ethereum] is still so far away from the traditional banking system. I think hardware can contribute," she said.

In her mind, because ASICs will be able to mine ethereum faster and more efficiently, they will be able to process more transactions at a faster pace. "If we have a fast enough physical layer," the community won't have to rely on complex software scaling solutions, such as sharding, she argued.

Chen depicted Linzhi as deeply interested in participating in and assisting with the improvement of the ethereum protocol.

Indeed, pointing to a recent proposal by ethereum founder Vitalik Buterin that offers a scaling method based on hardware running zk-snarks, Chen said that Linzhi would be capable of producing such hardware in the future, although it's not on their roadmap.

Last resort

All in all, it's the latest sign that a larger argument is being had about how ethereum will secure its $22 billion blockchain. However, that argument may not break from the original roadmap anytime soon.

Speaking to CoinDesk, Hudson Jameson, a communications officers for the Ethereum Foundation, said he was unaware of any ASIC advocates in the ethereum developer community who might protest the plan to switch to proof-of-stake.

Much of the movement stems from the idea that the presence of ASICs optimized to only run one particular algorithm could interfere with a smooth transition to proof-of-stake, now dubbed "Shasper" due to its fusion with scaling method, sharding.

"That's the entire reason ProgPoW was created: to ensure [ethereum] could transition safely over to [proof-of-stake] without larger parties like Bitmain manipulating the coin and the price," Minehan told CoinDesk.

Still, Chen didn't express too much concern in this regard, emphasizing that such efforts are still very much within "the proposal state."

Irrespective, Chen urged that in the event of ProgPoW or proof-of-stake, Linzhi will switch to mining ethereum classic, a rival ethereum platform that split away from the blockchain in 2016, and that traditionally been more friendly to ASIC hardware.

She told CoinDesk:

> "We would like to reduce the power consumed to secure [ethereum], but if they want to stick with wasteful GPUs run by two companies and powerful secret farming concerns, then we will just press on with [ethereum classic]."

Database image via Shutterstock

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ASICs   Avalon   Mining   Ethereum   ETH   ProgPoW   Linzhi