

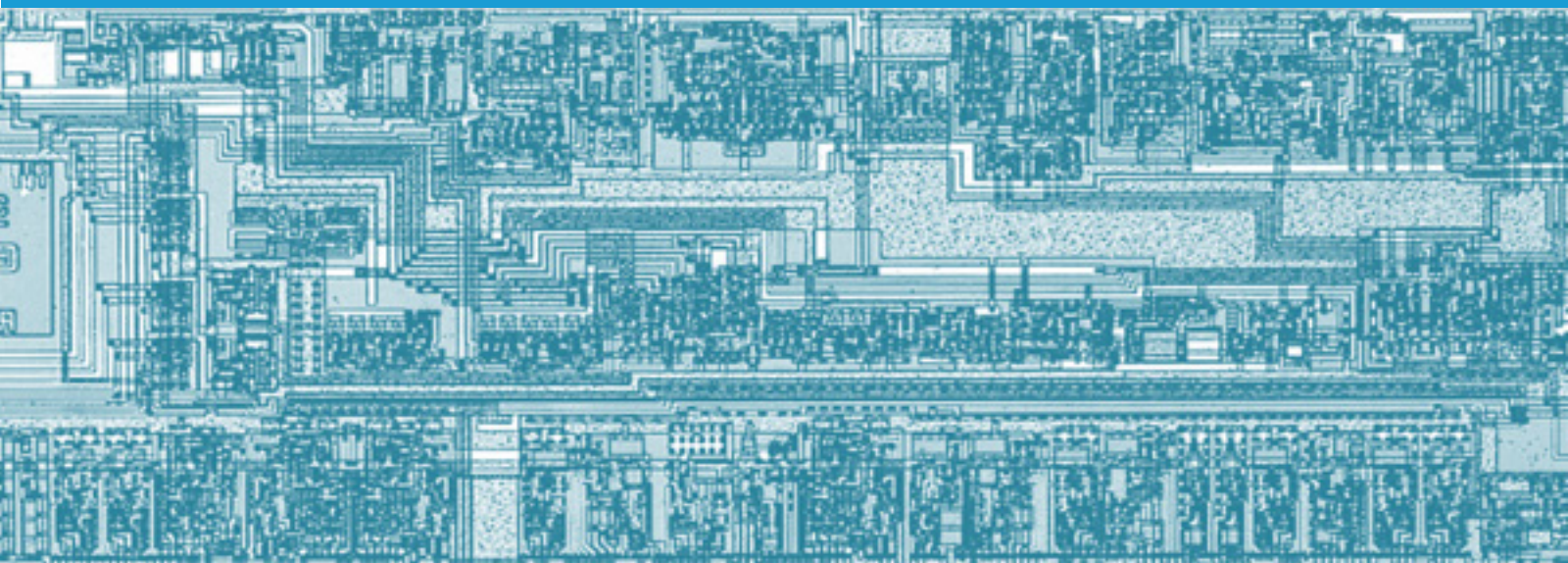


[www.siliconcatalyst.com](http://www.siliconcatalyst.com)

# SILICON STARTUP SOLUTIONS

A SILICON CATALYST NEWSLETTER

A VALUABLE RESOURCE FOR THE SEMICONDUCTOR STARTUP COMMUNITY





## RICK LAZANSKY

ceo - silicon catalyst  
serial entrepreneur  
and startup fanatic

# WHAT'S UP?

### An update from Silicon Valley: It's getting hot in here.

I thought I'd write this quarter about the increase in semiconductor startup investing here in the USA. In as few words as possible: **it's booming.**

We often hear how fast the industry is growing in China, where we will likely see some great successes in the next decade. I was informed last month by a partner of Silicon Catalyst that there are 1600(!) IC-developing hardware startups in China. Here in Silicon Valley (and the rest of the US) we are seeing even faster growth, not in the absolute number of startups, but in year-over-year, quarter-over-quarter investment. That's my perception. It's hard to know for certain, though, and I'll get back to that momentarily.

The great news is obvious - hardware is once again hot. That's not just more interest in the maker movement, which has been a fantastic leading indicator of what some of us have been predicting for a decade - a return to investing in hardware. Entrepreneurs like to create new, exciting products, and the industry was stalled for a decade, while demand for innovation rose, unfulfilled. The investment has been focused on a few areas - deep learning and LIDAR foremost, both of which will help fuel the transition to advanced driver-assistance systems and then fully autonomous vehicles. "AI chip" startups, both learning and inference processing, are numerous - in the range of 100 startups. These include Nervana, Graphcore, and Cerebras, collectively have raised almost \$200M, which we shouldn't find surprising given the appetite of Intel and others for acquisition, and the rapid rise in valuation of NVIDIA which stands at \$115B.

The rise of LIDAR startups has been equally fast, with some early acquisitions, even with the frequent changing of the frontrunners in the field. LIDAR

role in general robotics, especially in manufacturing and logistics, also helps fuel the investment interest. In both markets investment is led not only by well-known traditional venture capital firms, but also corporate VC and newcomers to the venture business.

Hopefully the interest will spread wider soon. There is need for more than self-driving taxis and improved manufacturing, certainly. Food safety, health and safety for a greying population, come to mind as great fields for new entrepreneurs to develop solutions. The startup environment here is less well publicized, and estimating its size is difficult. Sources for information range from Pitchbook, Crunchbase, and lesser used sources such as AngelList, as well as articles in EETimes and TechCrunch. Many of the startups are helped along by corporate venture capital, strategic investment, and there are plenty of 'in-house' projects which may become promising spin-outs. These are far less well covered by these sources.

**If you know of some, we'd love to have them mentioned here in our newsletter, so please do let us know at:**  
[webinfo@siliconcatalyst.com](mailto:webinfo@siliconcatalyst.com).

All of this is good for the semiconductor industry, and promising for the future of hardware here and what it may bring to consumers, industry, health-care, and environmental safety.

Enjoy time with your friends and families this holiday season. Let your mind be quiet, and let those you choose to be with, and they with you, know you appreciate and love them. Surprise them with a poem over dinner, perhaps.

In the words of W.H. Auden, "In times of joy, all of us wished we possessed a tail we could wag." Let them all know you wag for them.

VOLUME 3

## IN THIS ISSUE

We are pleased to bring you our third Silicon Startup Solutions, a newsletter published by Silicon Catalyst to foster meaningful dialogue within the semiconductor startup community. We hope you enjoy our current newsletter and find it both insightful and informative. We welcome your feedback. [Contact Us](#)



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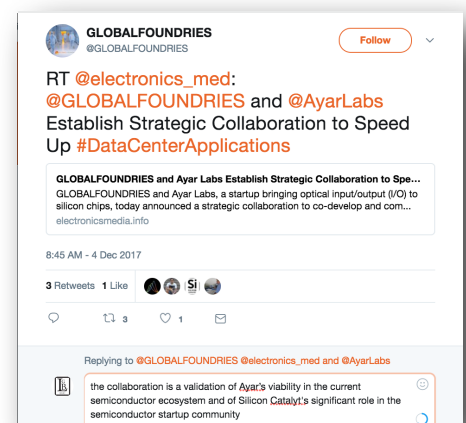
### SiC Advisory Program

On November 8th, Silicon Catalyst held its third Portfolio Company update. The event was a testament to the growth and viability of our incubator's unique model. The two day event saw the majority of CEO's from our 14 Portfolio Companies along with representatives from our 20 ecosystems partners, as well as prominent members of both the investment community and the press. Also in attendance was Pete Rodriguez, Silicon Catalyst's new COO, whose storied career offers a wealth of talent and knowledge.

A segment of the event featured industry veterans who offered up their wisdom to our startups. One of those was John East, former CEO of Actel Corp. John pointed out that only one in six startups have a chance for survival. It was in that moment that one of the truest value propositions of Silicon Catalyst came to light. A study of our startups and their technologies coupled with the priceless and persistent guidance offered by our team members, mentors, and ecosystem partners de-risks the equation and delivers an entirely new paradigm in semiconductor startups. Case in point: Ayar Labs. One of the initial startups screened which eventually became a Silicon Catalyst Portfolio Company was Ayar Labs headed by the dynamic Alexandra Wright-Gladstein

(featured in our last newsletter). She pre-screened with us over Skype the day she was moving out of her apartment at MIT just two years ago. With moving boxes in the background, she forcefully made her case why Ayar should be admitted to the incubator. They joined Silicon Catalyst and received guidance from our team members to help land their first round of funding with Founder's Fund. Fast forward: last week they announced that semiconductor behemoth GLOBALFOUNDRIES has invested in their company and will be offering their unique photonics solution to its customers.

### From PowerPoint to Prototype to Powerhouse ... that's the Silicon Catalyst story.







A CONVERSATION WITH FREDERIC NABKI, CEO, SPARK MICROSYSTEMS, A SILICON CATALYST PORTFOLIO COMPANY



SPARK Microsystems has developed a unique wireless technology that is more energy efficient than incumbent technologies. It significantly lowers the energy used by the wireless communications function of a device in order to dramatically lower its reliance on batteries.

**Q. PLEASE TELL ME ABOUT YOUR STARTUP AND GOALS**

**A.** SPARK Microsystems is a fabless semiconductor company that is leading the way towards ultra-low power wireless communications for the Internet of Things revolution. With its patented technologies, SPARK Microsystems is bringing to market a high performance wireless transceiver that allows for orders of magnitude improved power consumption and shortened communication latency, or delay, while providing higher data rates than competing technologies. The technology has the potential to disrupt many different markets from wireless audio to wireless sensing. Our goal is to become the technology of choice for ultra-low-power short range (50 meters) communications. SPARK strives to enable solutions that require constant wireless connectivity that precludes them from achieving sufficient battery life by using today's wireless technologies. We are also pushing to enable devices that need data rates or communication latencies that cannot be achieved by today's low-power wireless technologies or that cannot coexist in today's overcrowded wireless spectrum. Moreover, we aim to enable new applications. For instance today in many wireless sensors, the wireless function is the only part that prevents battery-less operation using emerging energy harvesting technologies while maintaining continuous connectivity. Microcontrollers and many sensors are efficient enough, but wireless is

lagging. SPARK's technology fills that gap, and such battery-less sensors have huge potential to drive the Internet of Things revolution.

**Q. PLEASE TELL ME ABOUT YOUR SPECIFIC ROLE/TITLE AND BACKGROUND?**

**A.** I am the co-founder and CEO of SPARK Microsystems. I come from the academic background, having done a Ph.D. at McGill University in radio frequency integrated circuits and microelectromechanical systems (MEMS). In 2009, I decided with my colleague Dominic Deslandes, our CTO and an RF and microwave circuits Ph.D., to investigate a transceiver architecture that would dramatically reduce the power consumption of wireless communications. Many years later and lots of sweat later, SPARK Microsystems was born and now we have a one-of-a-kind wireless chip that we believe will make a dent in the universe.

**Q. WHAT INSPIRED YOU TO START THIS COMPANY?**

**A.** Insanity perhaps? More seriously, what inspired us to start SPARK was the energy inefficiency in wireless technology out there, which today is becoming even more apparent to the end users. If one forgets the different protocols for a second, and closely looks at the core of an RF integrated circuit, one will notice that all wireless transceivers are all fundamentally off-shoots of an architectural innovation made



**Frederic Nabki,**  
CEO, SPARK Microsystems

back in 1901. At the onset of this endeavor, we were convinced there was a better way to design a wireless transceiver, and while the underlying idea is simple, like most good ideas, the devil was in the details. It took many little innovations around this idea for or us to get this chip to work right, and be able to do outlandish things like stream audio with more than 10 times less power and latency than the competition, or stream sensor data once per second with a few microwatts.

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A CONVERSATION WITH SPARK MICROSYSTEMS  
CEO FREDERIC NABKI ... CONTINUED



## Q. WHAT INSPIRED YOU TO START THE COMPANY? A. INSANITY PERHAPS?

### Q. WHY ARE YOU PART OF SILICON CATALYST?

A. Silicon Catalyst makes it much easier to build a semiconductor startup. Building a startup is hard, and making it succeed is even harder. Building a semiconductor startup is worse: burn rates are horrendous and the mask set cost is always a daunting issue for investors and even for large semis. Silicon Catalyst's many in-kind partners offer valuable goods-and-services that allow us to reduce our burn rate to the point where we burn cash very much so like a software startup, and that will help our future financing rounds and increase our chance of success. Also, the investor network that we have access to through Silicon Catalyst, and its rich advisors network, are a really important part of the equation for us.

### Q. WHAT HAVE YOU LEARNED IN THE PAST YEAR?

A. I have learned that making a prototype turn into a mass-producible chip is not just a technology-centric affair and that engaging customers and listening to them is paramount to developing the right product.

### Q. WHAT ARE YOUR GOALS FOR 2018?

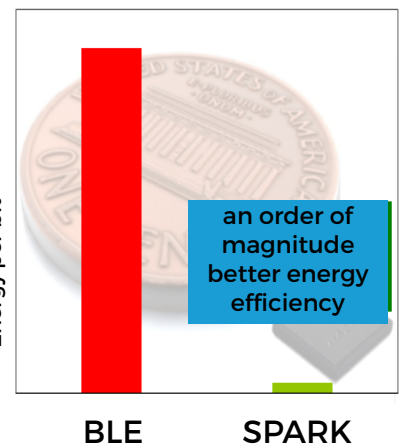
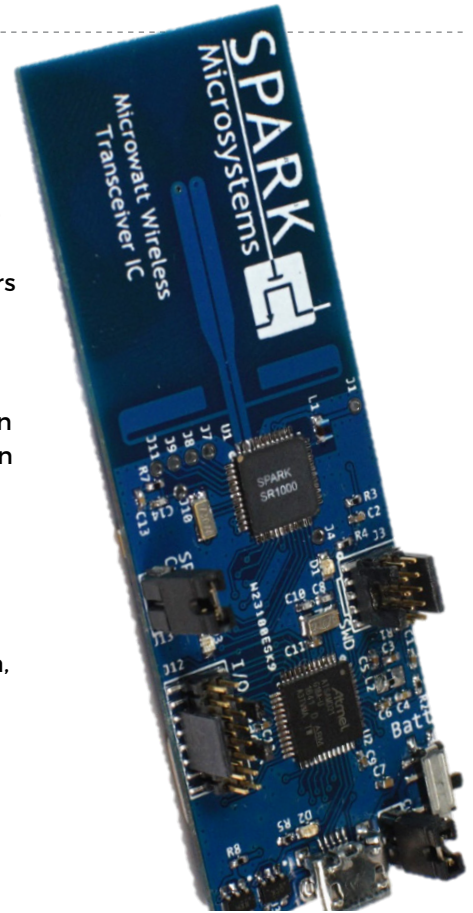
A. Continue to strengthen our relationships with customers and strategic partners, sample our chip broadly early next year and have our first product in production ramp by year-end.

### Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR SEMICONDUCTOR ENTREPRENEURS?

A. 1). Do not underestimate the time it will take to raise your first round.  
2). Start talking to potential customers very early.  
3). Don't just pitch a technology, but also credibly cover its application potential, and don't base a business plan just on market size projections, but on potential customer engagements.

### Q. WHAT IS IT LIKE WORKING IN SILICON VALLEY?

A. We are based in Montreal, Canada, so while I can't speak for day-to-day life in the Valley, I can say that I enjoy the dynamism I see in entrepreneurs every time I visit. After having been there a few times now, I still have the outsider's perspective, but what I see is a highly conducive location to foster innovation, to broker technology deals, and where risk taking is something that is definitely part of the culture. I am always impressed with the diversity of great ideas and the amazing startup ecosystem I see in the Valley, with a wide range of investors and a vast number of great ideas. It's remarkable for a place to have been a leader in so many cornerstones of innovation worldwide.



## EVENTS



### 1/27/2018 SPIE PHOTONICS WEST

The Moscone Center  
The most comprehensive technical conference and exhibition spanning biophotonics for brain research and healthcare, lasers for research and advanced manufacturing, sensors and camera systems, imaging and displays, communications and optoelectronics.  
[Click here to register.](#)

### 3/4/2018 IEEE APPLIED POWER ELECTRONICS CONFERENCE AND EXPOSITION

Henry B. Gonzalez Convention Center  
San Antonio, TX, USA - APEC focuses on the practical and applied aspects of the power electronics business. The conference addresses issues of immediate and long term importance to practicing power electronics engineer.

[Click here to register.](#)

### 4/30-5/3/2018 SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE

Saratoga Hilton - Saratoga Springs, New York  
The conference provides an unparalleled platform for semiconductor professionals to network and learn the latest information in the practical application of advanced manufacturing strategies and methodologies.

[Click here to register.](#)

### 1/30/2018 PROTECTING YOUR IP: DO'S AND DON'TS

To be held with Mark White and David Smith at Techcode in Mountain View, CA .  
This event is presented under the auspices of Silicon Catalyst.

[Click here to register.](#)

### 3/14-16/2018 SEMICON CHINA

Sniec, Shanghai  
The conference will have nine symposiums to cover all aspects of semiconductor technology with focus on manufacturing and advanced technology.

[Click here to register.](#)

### 5/20/2018 THE CONFAB 2018

THE COSMOPOLITAN of LAS VEGAS  
The semiconductor industry is on the cusp of a new era of growth, driven by a diverse array of applications. Much of the growth will come from the need for better connectivity and more intelligent data analysis.

[Click here to register.](#)

### 3/3/2018 PSMA SPONSORING CAPACITOR WORKSHOP

The PSMA Magnetics Committee and IEEE PELS will conduct the third "Power Magnetics @ High Frequency" workshop on Saturday, March 3 2018, which is the day before and at the same venue as APEC 2018 in San Antonio, TX.

[Click here to register.](#)

### 4/8/2018 CPES

CPES research activities are dedicated to improving electrical power processing and distribution that impact systems of all sizes - from battery-operated electronics, to vehicles, to regional and national electrical distribution systems.

[Click here to register.](#)

### 6/5/2018 PCIM EUROPE CONFERENCE

Nuremburg, Germany  
PCIM Europe Conference is an outstanding user-oriented platform with current lectures of leading companies and universities of all sectors of power electronics. Silicon Catalyst partner Raul Camposano will deliver one of the keynotes.

[Click here to register \(registration opens in February\).](#)





# ADVANTEST®

## Interview with Doug Lefever, Director, President and CEO of Advantest America and Managing Executive Officer on the Board of Directors of Advantest Corporation



**Doug Lefever**  
Director, President and CEO of Advantest America and Managing Executive Officer on the Board of Directors of Advantest Corporation

global semiconductor industry. We manufacture measuring instruments used in the design, production and maintenance of electronic systems including fiber-optic and wireless communications equipment and digital consumer products. In addition, we offer nanotechnology products that address the early stages of the semiconductor development process for the 14-nm node and beyond. In total, we have more than 20,000 systems installed worldwide.

For over 60 years, Advantest has led the way in developing new and innovative test and handling solutions. We have been named among the 10 BEST companies in VLSI Research's Customer Satisfaction Survey for 29 consecutive years — every year since the survey was begun.

Our global headquarters is in Tokyo, but we have subsidiaries as well as R&D facilities around the world. Advantest currently has approximately 4,400 employees worldwide.

solutions, wafer and nanotechnology tools, and burn-in test systems. We deliver innovative test solutions to the world's leading Integrated Device Manufacturers (IDMs), fabless companies and outsourced semiconductor assembly and test houses (OSATs). Our products are used by all of the world's 20 largest semiconductor companies.

As the semiconductor industry has evolved and grown, so have we. Today, Advantest's industry-wide involvement extends beyond our core capabilities in test and measurement to include areas such as lithography, data logging, consulting and more.

When I talk with portfolio companies at Silicon Catalyst, it's usually about some engineering problem that they're trying to solve. So I try to help them come up with possible solutions and to identify partners that can provide a quote and work with them. I've found that many of the folks at portfolio companies have never done that. They may have done engineering development, but not broader business operations so Advantest helps to bring them along the learning curve. In early stage companies there typically isn't a need for a deep dive into test technology or to get a device onto a tester.

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### Q. WHO IS ADVANTEST?

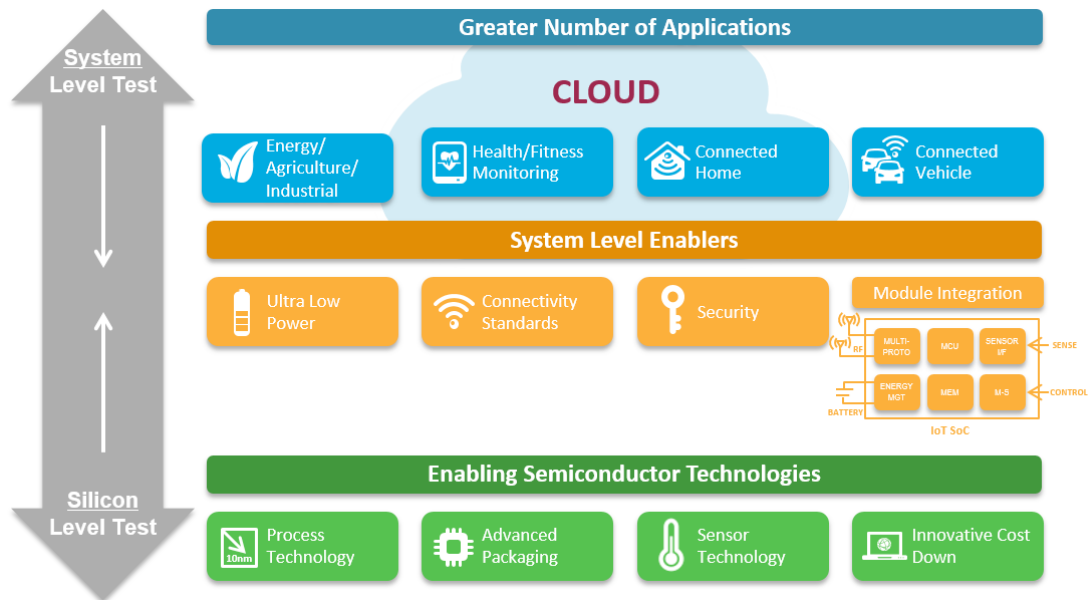
**A.** Advantest Corporation is a leading supplier of Automatic Test Equipment (ATE) - including memory, system-on-chip (SoC) and radio-frequency (RF) test systems - for the

### Q. HOW DOES ADVANTEST FIT INTO THE SEMICONDUCTOR ECOSYSTEM?

**A.** Our primary business is automated test equipment (ATE). We offer both wafer and final test

## SILICON CATALYST IN-KIND PARTNER PROFILE

# ADVANTEST®



Advantest is active throughout the entire semiconductor ecosystem, offering solutions from silicon-level testing up to system-level testing. (See graphic above.)

### Q. WHY DOES ADVANTEST PARTNER WITH SILICON CATALYST?

**A.** As the world's first incubator focused exclusively on semiconductor solution startups, Silicon Catalyst provides very early-stage companies with access to goods, services and – I think, most importantly – experience from our network of in-kind partners. These partners are businesses that have been through the startup process.

As an established company, Advantest wants to give back by supporting new startups through our in-kind commitment. Our involvement comes to 160 hours per month in sharing insight, technical education, management guidance and mentoring. That amounts to the equivalent of one month's work by a full-time experienced industry member.

Initially I thought that, within a year or two, the portfolio companies

would begin maturing and using Advantest's equipment on their nascent IC designs. But these are very, very early-stage ventures and no one has needed our actual test resources yet. We are giving them advice and consulting on test strategies and how to develop manufacturing flows. And on a broader scale, we are sharing our hard-won experience in running a company. As a proficient business, we can see where young ventures have weaknesses and we can help them to address those weaknesses.

Through Advantest's involvement with Silicon Catalyst, we are a member of an ecosystem populated by portfolio companies and in-kind partners. The young companies have promising technologies or application ideas, but generally need to gain "ground floor," startup-level experience. Silicon Catalyst provides opportunities for them to begin building out their teams and to make real connections with equip-

ment and technology providers or financial people, depending upon their stage of development.

The industry has found it challenging to fund any kind of new technology or anything semiconductor-related. One of the reasons that we jumped in is to help figure out ways to reduce the cost of development and finance new semiconductor startups.

### Q. WHAT ARE THE BENEFITS OF THIS PARTNERSHIP?

**A.** With over 100 startups evaluated since Silicon Catalyst's inception and 14 companies in the current portfolio, Advantest has gained an early look at some very intriguing technology trends that help to inform our market research as we develop new methodologies, features and products.

**continued on next page**





## SILICON CATALYST IN-KIND PARTNER PROFILE

# ADVANTEST®

Silicon Catalyst has given us insight into emerging technology trends in areas such as optical, materials, power management, memory cells, MRAM, low-power memory technology and more. It's a strategic benefit that we get to see the pluses and minuses of new technologies popping up.

We recognize that we're not going to be selling test systems right away. But maybe five years down the road, if some portfolio companies become successful and since they've had access to our technology and our support services, they may gravitate toward our platforms.

Although Advantest does not fund any of these companies or sit on their boards, we are the only ATE company that gets to help evaluate new companies and new technologies when they ask to join Silicon Catalyst. We also can talk to companies that don't make it into the portfolio, but whose technologies or IP are interesting to Advantest.

Being part of this ecosystem and having exposure to what's coming gives us insight into where our industry is headed, what type of equipment customers will need and maybe even the types of performance we might expect from future electronic products. It gives us ideas about what is important.

**Q. WHERE ARE YOU SEEING MOMENTUM IN SEMICONDUCTOR STARTUPS? (FOCUS ON ICS)**

**A.** There are many optical-related companies that are leading the next wave of high-bandwidth connectivity and low-power computing. While some are building a single chip and others are developing whole modules, the volume of optical products is starting to grow and we can foresee high-volume manufacturing (HVM) after that.

In terms of applications, consumer optical-based communications are arising. In this area, there's a new standard coming out called NG-PON-2, a next-generation Ethernet over passive optical connections. We also see a good number of startups that are focused on high-bandwidth computing. For instance, the people at Rex Computing are writing a compiler and designing processors that enable low-power, very-high-performance parallel computing. Some of the group's members have been working on this since they were 16 or 17 years old.

Massively parallel computing also is enabling advances in Artificial Intelligence (AI), machine learning and Big Data with shared databases. People are building dedicated chips for machine learning.

In addition, there's wearable technology for medical and health-related applications such as monitoring and analyzing blood. One company is making a device that will be able to do a diagnostic screening at Point-of-Care of a blood sample and determine what's in it, without having to do an extensive blood panel analysis. The AI system will be

taught patterns that are consistent with a pathogen, a bacteria or another component. A blood sample is put into the device and, within 10 minutes, the system can tell you what's in there. It's cheaper and it's faster than current approaches.

Another interesting area is energy harvesting. This wearable technology uses the heat of your body to charge a battery. The bigger the temperature difference between your body and ambient air, the more energy it puts out.

Low-power memory is an emerging area, too. There's a lot of focus on that. More and more of these forward-looking technologies are cropping up in the Silicon Catalyst realm.

**About Advantest:** A world-class technology company, Advantest is the leading producer of ATE for the semiconductor industry and a premier manufacturer of measuring instruments used in the design and production of electronic instruments and systems. Its leading-edge systems and products are integrated into the most advanced semiconductor production lines in the world. The company also focuses on R&D for emerging markets that benefit from advancements in nanotech and terahertz technologies, and has introduced multi-vision metrology scanning electron microscopes essential to photomask manufacturing, as well as groundbreaking 3D imaging and analysis tools. Founded in Tokyo in 1954, Advantest established its first subsidiary in 1982 in the U.S. and now has subsidiaries worldwide. More information is available at [www.advantest.com](http://www.advantest.com).



## SILICON CATALYST HELD ITS PORTFOLIO COMPANIES AUTUMN UPDATE ON NOV 8, 2017

AT THE ZGC INNOVATION CENTER IN SANTA CLARA.

by Radhika Jadcherla



Since being named **EE Times UBM/Canon 2015 Startup Company of the Year**, Silicon Catalyst has admitted 14 Portfolio Companies and has built a broad ecosystem comprised of 20 partners, both in-kind and strategic.

Eleven of the Portfolio Companies updated attendees on their recent progress at Silicon Catalyst's third Portfolio Company Update.

November 8, 2017

The morning session's highlight was the CEO Forum, where our Portfolio Company (PC) CEOs shared their experiences and challenges and received productive advice from successful industry veterans. The momentum grew in the afternoon, when each of our PC CEOs presented their current status, success and path forward to a room full of attendees that included investors, strategic partners and future prospective customers. The meeting not only offered each of our Portfolio Companies the opportunity to share its journey on the road to success, but it also afforded them direct interaction with a community of investors in attendance. In addition, the PC's participated in a press briefing with the likes of EE Times' Rick Merritt, Peggy Aycinena, and Steve Ohr. The opening day of the meeting

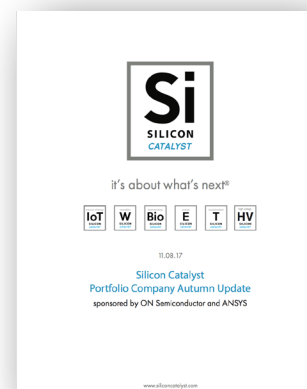
proved productive, with attendees reporting that they were impressed with the quality of the startups and their progress to date. Several acknowledged Silicon Catalyst's unique ability to de-risk the startup equation through its diligent screening process, excellent mentorship, oversight of corporate structure and leadership, and by guiding startups on a path to funding.

The multiple networking sessions that helped build a closer relationship between the startups and the interested attendees proved to be one of the biggest attractions.

The enthusiasm overflowed into the next day's debriefing with the PC CEOs, leading to the Advisor Program in the evening. This is a new addition to our current efforts where we help match startups with an advisor/s to proffer advice on overcoming a challenge or achieving a key milestone. Our goal is to make experts accessible to the growing startup community. For more details refer to the section title: "Silicon Catalyst Advisory Program-Looking for Advisors". If you are interested in becoming part of the Advisor community, **please reach out to Tarun Verma tarun@sicatalyst.com or Radhika Jadcherla radhika@sicatalyst.com.**

At Silicon Catalyst, we thrive to build a robust ecosystem of partners relevant to the needs of our startups. We seek to screen startups that not only address a given pain point but one whose technology solution can uniquely benefit from engagement with our ecosystem partners and mentors and can attract the interest

of the investor community. Our effort continues in adding more ecosystem and strategic partners and bringing in more investors that can support our mission. We thank our sponsors ON Semiconductor and ANSYS for their support. The event was best summed up by Yuniarto Widjaja, Zeno's CEO, who stated: **"I enjoyed many productive interactions during the Portfolio Company Update Event. We learned a lot from the Silicon Catalyst team, event attendees and fellow Portfolio Companies."**





## SILICON CATALYST IN THE NEWS

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### Chip Incubator Warms New Startups

#### ON Semi joins Silicon Catalyst as partner

**Rick Merritt**

SAN JOSE, Calif.

11/10/2017 — Silicon Catalyst added ON Semiconductor as a partner and two new startups to the dozen that it incubates. The accelerator, focused on semiconductor startups, hopes to expand its geographic footprint in January and launch its first graduates soon.

Like most of its partners, ON Semi joined Silicon Catalyst to get a better view of its pipeline of startups. The incubator screens hundreds of startups every year to select a handful that become portfolio companies, getting access to EDA and test tools and services from partners, including a shuttle run at TSMC.

“My role is to look outside the company and fill innovation and technology gaps,” said Mamoon Rashid, senior vice president of strategic ventures at ON Semi. “This partnership gives us a view of the semiconductor startup environment ... there are a lot of incubators in software, but not a lot in semiconductors.”

Not surprisingly, one of Silicon Catalyst’s newest startups is designing an accelerator for machine learning, an area that has reawakened an otherwise sleepy area of venture investing in silicon.

Xceler Systems Inc. is designing an FPGA-like graph processor, promising substantially lower power than alternative chips for supervised and unsupervised learning. It eventually aims to make it based on the RISC-V architecture.

Silicon Catalyst’s other new startup, Power Down Semiconductors, developed a process to recycle charge and prevent power losses in chips and displays. It focuses on the market for consumer electronics devices such as smartphones.

Also in the Silicon Catalyst portfolio are the following startups with their products:

ACP Semi: Smart, integrated LEDs

Aeponyx: MEMS-based silicon photonics switches

Ayar Labs: Optical I/O blocks made in CMOS

Chaos Prime: An IoT radio to withstand factory interference

ClopTech: A 60-GHz radio

Rex Computing: A parallel processor

Spark Microsystems: A low-power IoT radio

Zeno: Designer of a 1T SRAM

The company, announced in late 2014, takes 10% to 12% in equity in exchange for incubating startups for two years, providing them tools, services, connections, and mentoring.

“We have three companies nearing their two-year anniversary date, so we have to figure out how we do graduation,” said Rick Lazansky, Silicon Catalyst’s chief executive.

— Rick Merritt, Silicon Valley Bureau Chief, EE Times





# SILICON STARTUP SOLUTIONS

## SILICON CATALYST IN THE NEWS



EQUITY RESEARCH  
INDUSTRY UPDATE

November 13, 2017

### Daily Chip Clips

#### SUMMARY

- **Chip incubator warms new start-ups (EE Times)**
- Silicon Catalyst added ON Semiconductor as a partner and two new start-ups to the dozen it incubates. The accelerator focused on semiconductor start-ups hopes to expand its geographic footprint in January and launch its first graduates soon. Like most of its partners, ON Semi joined Silicon Catalyst to get a better view of its pipeline of start-ups, according to *EE Times*.

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### The ConFab Visions

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### New Speakers for The ConFab 2018

By Dave Mount

Given that there is presently considerable M&A activity in the semiconductor industry: with large companies merging, larger companies acquiring smaller companies, and considerable numbers of start-up companies receiving funding, we have enlisted an old friend and Industry expert, Dan Armbrust, the Founder and director of Silicon Catalyst, the world's first incubator focused exclusively on semiconductor solutions startups, who will speak on the factors and drivers fueling M&A activities and startup launches.



- SOLAR
- GRID EDGE
- ENERGY STORAGE

### Silicon Catalyst, an incubator focused exclusively on solutions in silicon, has hired former NXP vice president and general manager Pete Rodriguez as COO.

Rodriguez is a veteran of the semiconductor industry, serving as CEO of Exar Corporation, CEO of Xpedion Design Systems, and chief marketing officer at Virage Logic, prior to NXP.

Silicon Catalyst has grown to 14 portfolio companies and 20 partners. In the past 24 months, the incubator has screened more than 140 startups from across the U.S., Europe and Asia and has admitted 14 to its program. These startups are developing innovations in energy harvesting, silicon photonics, smart lighting, machine learning and much more. Silicon Catalyst expects to double in the coming year. Rodriguez's experience is expected to help guide this growth.



## SILICON CATALYST ADVISORY PROGRAM

### LOOKING FOR ADVISORS



by Tarun Verma



At Silicon Catalyst we are building a vibrant ecosystem to help drive the next generation of silicon solution startups. Advisors are a key component of this ecosystem along with our partners and the entrepreneurs. Here are our thoughts on what it means to be an Advisor.

#### “Advising”

We expect of course that you’ll advise one or more startups. It’s a bit like hiring a team for both you and the entrepreneurs. There are many startups from which to choose. Entrepreneurs may have very definite ideas as to what help they need, a more murky view, or perhaps some will even believe that they don’t need an advisor. However, we really want every startup to have one or more advisors to broaden the team and help navigate the shoals. We expect that most of the entrepreneurs will really know their technology, certainly in depth if not also in breadth. That is to say they

may be brilliant silicon architects and unmatched designers, but they may lack experience in reliability, manufacturability, packaging, reference system implementation, software. You probably have that experience.

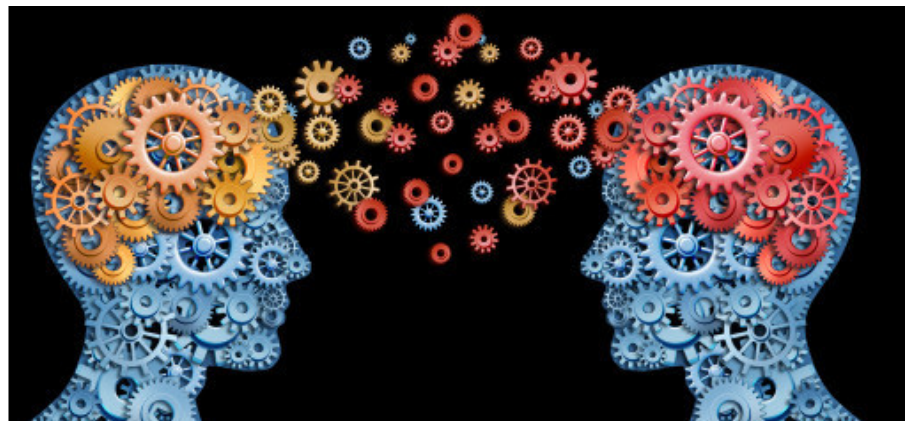
We also expect that most have will never have started a company, negotiated a roadmap or contract, or planned a marketing campaign. You probably have.

We expect you’ll be compensated for your efforts, but that you’re doing this for more than equity. Hopefully you’ll recall the few individuals that really helped shape your career and in ways small and large enabled your success. That’s now your role.

With regard to compensation, this is a subject for discussion between you

and the startup you are advising. We firmly believe that common stock best aligns the interests of entrepreneurs, advisors and Silicon Catalyst. We expect that the ‘typical’ compensation to Advisors will be in the form of non-qualified stock options vesting over the incubation period and perhaps beyond. Generally we believe this will be up to 1% of the common stock of the company per Advisor, provided directly by the company. Certainly you may have deeper involvement, and it would please us to see Advisors taking operational roles in our startups. We ask only that it all be done as transparently as possible.

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# SILICON STARTUP SOLUTIONS

## SILICON CATALYST ADVISORY PROGRAM LOOKING FOR ADVISORS



### “Sourcing”

In your daily lives outside of Silicon Catalyst, you likely come into contact with potential entrepreneurs, as well as academic researchers, potential strategic partners and others who believe that we should bring IC, hardware and system engineering not only back, but on to new heights. We want you connecting them to us and us to them. We estimate that there are thousands of potential hardware startups waiting to happen. We want our ecosystem to know them, encourage them, curate carefully and incubate the best. We can't do it all - we ask for your help - and we promise the prospecting is sometimes as fun as the advising. What this means in practice is a lot of 'e-intros', coffee shop meetings, passing out business cards at conferences, and of course introducing folks to us.

While we're on the subject, by our experience, the best people attract the best people, so we also strongly

encourage Advisors to recruit Advisors they'd like to see in the program.

### “Screening”

We would love to see Advisors with experience in vetting companies participating in our ongoing screening process to determine entry into the incubator. Participation on the screening committee is by invitation, but don't hesitate to ask.

### “Networking”

We want the ecosystem to be a rich one for you as well. Networking with the other Advisors, ecosystem partners, strategic partners and friends of Silicon Catalyst is our goal - something we want to provide for you. As you gather experience with the entrepreneurs and ecosystem, we want your suggestions and feedback on how to improve further. Maybe you'll want to do that in person, one on one. We also host “group events” to have open dialogs. We believe in working together, and openly, and we want to encourage specifically

Advisors helping Advisors.

### “Details”

All Advisors, and other participants in Silicon Catalyst, will be required to sign a confidentiality agreement. Generally, we expect Advisors to act in the best interest of the startup companies and Silicon Catalyst. Advisors will also be required to enter into an Advisor Membership Agreement with Silicon Catalyst detailing your responsibilities, obligations, and expectations.

Advisors may terminate at any time, but we do ask that you provide continuity in any transition to the startups new Advisor. Likewise, Silicon Catalyst reserves the right to terminate Advisors who violate the terms of the Advisor Membership Agreement.

**We believe you would find this role fulfilling. Thank you for considering joining! We look forward to a long, fruitful and exciting collaboration.**





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A VALUABLE RESOURCE FOR THE  
SEMICONDUCTOR STARTUP COMMUNITY

