



EE Times:

EE Times updates list of 60 emerging startups

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The *EE Times* 60 Emerging Startups list, first published in April 2004, has been updated to version 4.0 to reflect the latest corporate, commercial and technological conditions.

Some companies have dropped off the list, otherwise known as the Silicon 60, because they have been acquired; some have moved to an initial public offering of shares; and others have moved beyond the list with the passage of time. As they have matured other, younger startups have been nominated to move off the *EE Times* radar list and onto the main list.

In version 4.0 of the *EE Times* 60 Emerging Startups list, editors have selected companies based on a mix of criteria including: technology, intended market, maturity, financial position and investment profile.

Startups on the Silicon 60 list include companies involved in semiconductors, fab equipment, packaging, foundry, materials, MEMS and EDA software that made an impression on *EE Times* editors. They are emerging companies to watch for a wide variety of reasons.

EE Times welcomes the following companies to the 60 Emerging Startups list version 4.0:

Achronix Semiconductor LLC
Applied Microstructures Inc.
Calypto Design Systems Inc.
Commit Inc.
Diseno de Sistemas en Silicio SA
DiBcom SA
EnOcean GmbH
InPhase Technologies Inc.
Imperas Inc.
Mitronics AB
Nanosolar Inc.
P.A.Semi Inc.
PolyFuel Inc.
Raza Microelectronics Inc.
RDA Microelectronics
ReVolt Technology A/S
SemEquip Inc.
Sequans Communications SA
T3G Technology Co. Ltd.
VeriSilicon Holding Co. Ltd.

Readers are welcome to nominate their own emerging startups for inclusion in a future version of the *EE Times* 60 Emerging Startups list. Nominations should be supported by a short citation explaining why the company is suitable for inclusion on the list.

Send comments and nominations to Peter Clarke (pclarke@cmp.com) or Mark Lapedus (mlapedus@cmp.com).

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The asterisks by each name show the number of iterations of the Silicon60 list on which that company has appeared.

* **Achronix Semiconductor LLC** (Ithaca, New York) is a startup company associated with Cornell University from where it has licensed patents. In September 2005 the company announced a prototype field programmable gate array that it said can operate at clock frequencies in excess of 650-MHz. www.achronix.com

** **Ageia Technologies Inc.** (Mountain View, Calif.) has launched its PhysX chip, which it describes as a Physics Processing Unit (PPU), a device that is intended to accelerate attributes of games software coding to support more life-like action and graphics. www.ageia.com

*** **Analogix Semiconductor Inc.** (Santa Clara, Calif., and Beijing, China) a start-up with operations split between Silicon Valley and Beijing, has introduced physical-layer transceiver ICs that can achieve up to 25-Gbit/s data rate over copper wire. www.analogix.com

*** **Apache Design Solutions Inc.** (Mountain View, Calif.) Apache is a provider of physical power integrity software. www.apache-da.com

* **Applied Microstructures Inc.** (San Jose, Calif.) was founded in January 2003. The company's molecular vapor deposition (MVD) technology is being applied to the growth of nanometer scale films for application in microsensors, life sciences and nanotechnology research. www.appliedmst.com

**** **Arithmatica Inc.** (Redwood City, Calif.) develops and licenses IP libraries based on proprietary math circuitry. www.arithmatica.com

*** **Arteris SA** (Paris) is an intellectual-property vendor that is commercializing a packet-based on-chip network. It's founders are the beneficiaries of the sell off of a previous startup, Tsquare Inc. www.arteris.net

*** **BridgeCo AG** (Zurich, Switzerland) is developing consumer electronics based on proprietary networking and signal processor technology. The company has received investment from Intel Capital in multiple rounds. www.bridgeco.net

** **Brion Technologies Inc.** (Santa Clara, Calif.) has developed a lithography simulation platform, dubbed Tachyon, which it claims is faster than rival products, according to a paper at SPIE 2005. www.briontech.com

* **Calypto Design Systems Inc.** (Santa Clara, Calif.), founded in 2002, is a privately held EDA company focused on bridging electronic system-level design and integrated circuit implementation with particular emphasis on formal verification. www.calypto.com

*** **Cambridge Semiconductor Ltd.** (Cambridge, England) was founded in August 2000 as a fabless power semiconductor spin-off company from the local university. It appointed former LSI Logic executive and Cantab-man David Baillie as its chief executive officer in March 2004. www.camsemi.co.uk

* **Commit Inc.** (Shanghai, China) was established in February 2002 with the backing of Texas Instruments, Nokia, LG Electronics Inc. and numerous Chinese institutions as a fabless chip company to deliver TD-SCDMA terminal chipsets. <http://www.tdscdma-forum.org/en/prolink/commit.asp>

** **Conformative Systems Inc.** (Austin, Texas), a developer of an XML processor, has accepted former Sun Microsystems executive, John Shoemaker, on to its board of directors. www.conformative.com

** **Cyberkinetics Neurotechnology Systems Inc.** (Foxborough, Mass.) has demonstrated the use of an implantable microelectrode array that, when combined with a digital signal processing system, forms its so-called "BrainGate" interface, which has been used to allow thought to control a television. www.cyberkineticsinc.com

** **Dafca Inc.** (Framingham Mass.), a startup provider of EDA software tools, has received grant of \$1.9 million from the National Institute of Standards and Technology. The money is to fund a three-year program to extend the applicability of the company's reconfigurable infrastructure platform for system-on-chip devices. STMicroelectronics is one of 14 companies that have signed letters of intent to use Dafca's tool. www.dafca.com

* **DiBcom SA** (Palaiseau, France) is a fabless semiconductor company developing chipsets for mobile television reception. The company closed a fourth round of funding at 24.5 million euro (about \$29.9 million) in August 2005 and included Intel

Capital amongst its investors. www.dibcom.net

* **Diseno de Sistemas en Silicio SA** (Valencia, Spain), otherwise known as Design for Systems on Silicon or DS2, was founded in 1998 and is a supplier of silicon and software for communications over power lines (PLC). The company is aiming its chipset at delivering data rates of up to 200-Mbits per second. www.ds2.es

** **Emerging Memory Technologies Inc.** (Kanata, Ontario) EMT was founded in December 2004 and is a fabless design house offering memory design services and developing IP cores specializing in DRAM, SRAM and other novel memory technologies. www.emergingmemory.com

* **EnOcean GmbH** (Oberhaching, Germany) was founded in 2001 as a spin-off from Siemens AG research labs. It's charter is to create sensors that are wireless, that scavenge energy from the environment and are reliable enough to be maintenance free. www.enocean.com

** **Frontier Silicon Ltd.** (Watford, England) a fabless chip company founded in 2001 that has produced digital audio broadcast and digital terrestrial television receiver chips, has closed a \$28 million venture capital investment round, one of the largest ever secured by a U.K. based chip company. www.frontier-silicon.com

** **Handshake Solutions NV** (Eindhoven, Netherlands) is working with ARM Holdings plc and an un-named lead customer to produce an ARM 32-bit RISC processor that does not require a clock signal to operate. Handshake is wholly-owned spin-off from Royal Philips Electronics NV set up to commercialize clock-less logic. www.handshakesolutions.com

**** **Icera Semiconductor Ltd.** (Bristol, England) is a DSP for 3G company founded by, amongst others, the founder of Element14 Ltd., which was eventually sold to Broadcom Corp. www.icerasemi.com

*** **Ignios Ltd.** (Oxford, England), formed in 2003, is developing a scheduling and monitoring hardware and software infrastructure, called SystemWeaver, which is intended to ease the use multiple programmable cores on a single chip. www.ignios.com

* **Imperas Inc.** (Palo Alto, Calif.) has been formed in 2005 by Simon Davidmann, an experienced developer of EDA tools and serial entrepreneur. The company plans to cater for a major change in design style by offering system development tools that combine the elaboration of both hardware and software while dealing with multiprocessing issues. www.imperas.com

**** **Innovative Silicon Inc.** (Lausanne, Switzerland) is a 2002 start-up founded by Pierre Fazan (CEO) developing SOI-based single-transistor memory reportedly denser than DRAM. www.innovativesilicon.com

*** **Inovys Corp.** (Pleasanton, Calif.), a supplier of automatic test equipment (ATE) raised \$16.3 million dollars in Series C finance in February 2004. First customer is Motorola. www.inovys.com

* **InPhase Technologies Inc.** (Longmont, Colorado) was founded in December 2000 as a spin-out from Bell Labs research, with the objective of becoming the first company to bring holographic data storage technology to market. www.inphase-technologies.com

**** **Kilopass Technology Inc.** (Sunnyvale, Calif.) was founded in early 2001 to develop and market non-volatile memory technology, manufactured in CMOS logic manufacturing processes. Announced first round venture capital funding in January 2004. www.kilopass.com

** **Luminescent Technologies Inc.** (Mountain View, Calif.), is backed by Sevin Rosen Funds and developing a line of RET software products for use in optical proximity correction (OPC) and phase-shift photomask (PSM) applications. www.luminescent.com

** **Luxtera Inc.** (Carlsbad, Calif.) A fabless semiconductor company formed in 2001. claimed to have devised a 10-gigabit-per-second optical modulation device, based on a standard CMOS fabrication process. www.luxtera.com

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** **Micromem Technologies Inc.** (Toronto) After five years in research and development, claimed it has come one step closer in producing an MRAM for use radio-frequency identification (RFID) applications. www.micromeminc.com

* **Mitronics AB** (Lund, Sweden) was founded in 2000 and has developed a massively parallel soft virtual processor that eases the deployment of software on an FPGA-based acceleration system. A software development kit includes the Mitrion-C compiler tuned for use with the Mitrion Virtual Processor. www.mitronics.com

**** **Molecular Imprints Inc.** (Austin, Texas) was founded in 2001 to design, develop, manufacture and support imprint lithography systems to be used by semiconductor device and other industry manufacturers. The company claims to be the largest organization in the world, working solely on imprint lithography. www.molecularimprints.com

** **Morpho Technologies Inc.** (Irvine, Calif.) has announced that former ARM executive John Rayfield is joining the company as chief executive officer. It is developing technologies for Software Defined Radio (SDR) and has investment from, and development deals with, Motorola, Freescale and Cadence Design Systems Inc. www.morphotech.com

** **Multibeam Systems Inc.** (Santa Clara, Calif.) is developing an e-beam tool that utilizes an array of 10 electron beam columns for use in high-throughput maskless lithography applications. www.multibeamsystems.com

*** **Nanonex Corp.** (Princeton, N.J) provides a line of nanoimprint lithography technology, including tools, resists, masks, and processes. Spun out of Princeton University. www.nanonex.com

* **Nanosolar Inc.** (Palo Alto, Calif.), which is developing roll-printed solar photovoltaic cells, announced it had closed a \$20 million Series B round of funding in June 2005. www.nanosolar.com

** **Nanotech Corp.** (Changzhou, China), a semiconductor foundry best known for having obtained manufacturing process technology, 0.35- and 0.25-micron CMOS, from Intel Corp. www.nanotech-corp.com

** **Novelx Inc.** (Lafayette, Calif.) is developing what the three-year-old company calls "monolithic microfabricated electron-beam arrays." Considered by some as a maskless-on-a-module approach, the arrays themselves are manufactured, by using a combination of MEMS and RF ceramic technologies. www.novelx.com

** **Open-Silicon Inc.** (Sunnyvale, Calif.) is a fabless ASIC company with offices in the U.S. and India attempting to drive down ASIC cost from IP selection through to packaging and test. www.open-silicon.com

* **P.A.Semi Inc.** (Santa Clara, Calif.) is a fabless semiconductor company developing a power-efficient multiprocessor architecture based on Power processor cores licensed from IBM Corp. The resulting modular architecture is aimed at both the embedded and high performance computing markets. The company is led by processor design luminary Dan Dobberpuhl. www.pasemi.com

**** **Plastic Logic Ltd.** (Cambridge, England) is a spin-off from Cambridge University that aims to combine plastic electronics with printing for low cost. www.plasticlogic.com

* **PolyFuel Inc.** (Mountain View, Calif.) was spun out of SRI International (formerly Stanford Research Institute) in 1999. It develops engineered membranes for application in fuel cells for portable and automotive applications. www.polyfuel.com

**** **Polymer Vision NV** (Eindhoven, Netherlands) is a business initiative within the Philips Technology Incubator aiming to bring flexible displays to market by combining polymer electronics with electronic ink. www.polymervision.com

** **Pulsic Ltd.** (Bristol, England) Pulsic Ltd is a provider of physical design tools for complex IC designs. Pulsic was launched in January 2002, and develops, markets and sells physical design tools for complex analog, custom, digital, mixed signal and system-on-chip (SoC) design. www.pulsic.com

* **Raza Microelectronics Inc.** (Cupertino, Calif.) was formed in 2002 by Atiq Raza, an executive well known from his times at Advanced Micro Devices Inc. and NexGen Microsystems Inc. The company is producing multicore designs for network processing. www.razamicroelectronics.com

* **RDA Microelectronics** (Shanghai, China) was established in 2004 with the aim of becoming the leading independent Chinese design company. With \$15 million from private equity firm Warburg Pincus, RDA has developed an all-CMOS RF transceiver for cell phone applications. www.rdamicro.com/en/

** **Replisaurus Technologies AB** (Kista, Sweden) describes its electrochemical pattern replication (ECPR) process as metal printing for microelectronics and claims that it can reduce the cost of metallization for electronic applications and microdevices significantly compared to the costs using traditional lithography-based processes. www.replisaurus.com

* **ReVolt Technology A/S** (Trondheim, Norway) was formed as a spin-off from contract research institute Sintef in 2004. The company's founder, Trygve Burchardt, has developed rechargeable zinc-air battery technology, which the company claims could replace lithium-ion batteries currently used in mobile applications. www.revolttechnology.no

* **SemEquip Inc.** (North Billerica, Mass.) is a developer of ion implantation sub-systems and advanced ion source materials for the manufacture of logic and memory chips. www.semequip.com * **Sequans Communications SA** (Paris, France), founded in 2003, has ambitions to become the leading supplier of silicon and embedded software for WiMAX-based wireless LAN systems. www.sequans.com

** **Siano Mobile Silicon Ltd.** (Netanya, Israel), founded in June 2004 digital television receiver tailored specifically for mobile communications and entertainment devices. Ulrich Schumacher, former Infineon CEO, is on the board of directors. www.siano-ms.com

**** **Silecs Inc.** (San Jose, Calif., and Espoo, Finland) is a specialist in low-k materials, working with Cypress. www.silecs.com

** **Silistix Ltd.** (Manchester, England) a spin-out company from the Amulet asynchronous logic research group at the University of Manchester in England founded in December 2003, has received backing from Intel Capital. www.silistix.com

** **Straatum Processware Ltd.** (Dublin, Ireland) A supplier of fault detection and classification software for semiconductor manufacturing, has received US\$5.65 million in third-round venture funding from lead investor Vision Capital, existing investor ACT Venture Capital, and new investor Intel Capital. www.straatum.com

* **T3G Technology Co. Ltd.** (Beijing, China) is a fabless chip company developing chipsets for the TD-SCDMA 3G standard. The company is backed by Royal Philips Electronics, Datang Mobile, Motorola and Samsung Electronics Co. Ltd. www.t3gt.com

*** **TeraView Ltd.** (Cambridge, England) A spin-off from Toshiba Europe Laboratories working on the application of terahertz frequency waves for vision through optically opaque objects and for chemical analysis. The technology could have long-term implications for communications. www.teraview.com

** **T-RAM Semiconductor Inc.** (San Jose, Calif.) Five-year old startup that has raised \$40 million in a single round to help speed it to market. www.t-ram.com

*** **Transfer Devices Inc.** (Santa Clara, Calif.) A spin off from Stanford University, the company is involved in "pseudo-maskless" mask technology for nano-imprint lithography. www.transferdevices.com

* **VeriSilicon Holdings Co. Ltd.** (Shanghai, China) is a fabless ASIC design foundry focusing on providing semiconductor IP, design services and turnkey services including manufacturing, packaging, testing, and delivery. www.verisilicon.com

The announcement of previous iteration of the Silicon60, version 3.0 of the list, from April 2005, could be found [here](#) when this story was first posted.

Version 2.0 of the list, published in October 2004, could be found [here](#) and version 1.0 of the list, published April 2004, could be found [here](#) when this article was first posted.

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