



## PRESS RELEASE

---

### CMOS Image Sensors Technologies & Markets - 2010 Report

***Disruptive technologies pave the way to the future of digital imaging industry!***

Feb. 16th, 2010 - Yole Développement released a new report dedicated to **CMOS Image Sensors Technologies & Markets**. The aim of this study is to provide:

- Key technical insight about future technology trends & challenges (such as Backside Illuminated Sensors, Wafer Level Cameras, image stabilization & auto-focus technologies),
- Deep understanding of CIS value chain, infrastructure & players,
- Key market metrics & dynamics of CMOS image sensors applications.

#### ***The CMOS Image Sensor industry is at an historic turning point ...***

Image sensors have come a long way since the first introduction of CCD sensor technology in the 1990's. They jump in the 2000's with the introduction of CMOS sensor technology which gave birth to the low cost, high volume camera phone market. Image sensors are now part of our everyday's life: from cell-phone cameras, to notebook webcams, digital cameras, video camcorders to security & surveillance systems. In the future, new markets are also emerging such as sensors for medical applications, automotive safety features but also gaming and home TV webcams...

*"The reason why we are now releasing the first report on CMOS image sensor industry is that we feel that we are at an historic turning point of this young, but still maturing industry" says Jérôme Baron, Market & Technology Analyst at Yole Développement.*

Indeed, from 2010 and toward the next decade, the time has come that high-end and low-end markets start converging: digital cameras are on the way to get real HD video camcorder features. Meanwhile, camera cell-phones with auto-focus capability are on the way to get real digital still camera features along with basic video recording functionality.

#### ***2010: Year of the CMOS BSI sensor wave?***

If you are following recent announcements in the digital imaging area closely, you may have noticed that CMOS image sensors are on the verge of making another giant step over CCD technology this year. And Japanese imaging companies seem to be leading the way in this area! Indeed, Sony made the first step last year by introducing its CMOS BSI sensor technology. The Japanese electronics giant is now mass producing the CMOS BSI sensor in its newest video camcorders and digital still cameras. But Sony is not an isolated case as in early January, many other announcements have followed and not only Casio but also Nikon, Ricoh, Samsung, JVC and Fujifilm all separately announced their first digital camera products using a CMOS sensor... based on BSI "Backside illumination" technology!

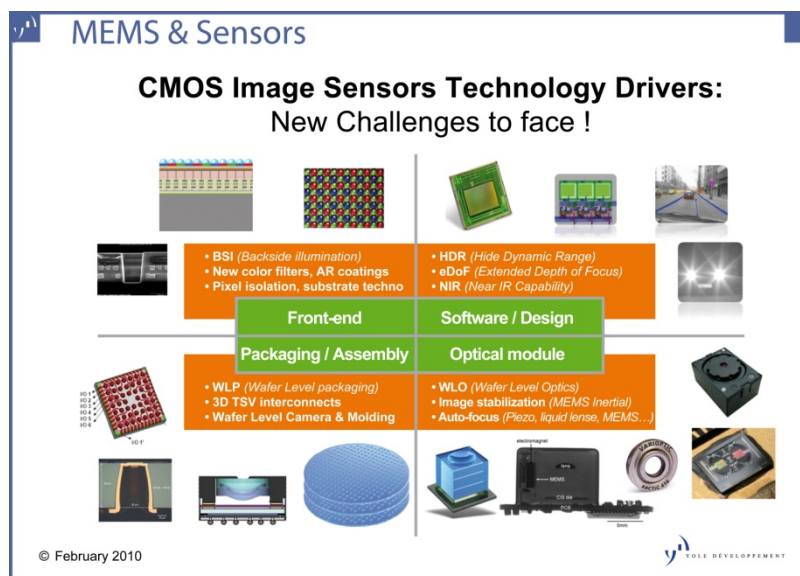
So, a lot of interesting announcements in the high-end imaging market have happened early this year. But the low-end image sensor market will not stand by and watch as it is expected that CMOS BSI technology will also appear into different smart-phone camera products later this year. Omnivision is ready and currently sampling its second generation BSI image sensor. Aptina Imaging, Toshiba, Samsung and STMicro are also in the starting-blocks.



## Disruptive technologies for digital imaging industry

“As these markets will progressively converge, key enabling technologies will be developed and are paving the way to the future growth of digital imaging industry”, explains Laurent Robin, Market & Technology Analyst at Yole Développement:

- CMOS sensor technology will continue to expand and finally take the advantage in the remaining CCD application space as soon as 300mm infrastructure will build-up in Asia and BSI CMOS technology will be made available.
- In the high-end camera phone market segment, disruptive new camera module concepts including auto-focus, zoom and image stabilization features will be developed and introduced to the market.
- In the ultra-competitive low-end market, the race toward Wafer Level Cameras and digital autofocus features such as eDoF (extended Depth of Focus) will enable the few remaining image sensor players to preserve their margins in this aggressive and cost driven market.
- Future CIS markets such as medical and automotive sensor applications will re-use extensively all these newly developed concepts (BSI, WLC, digital zoom) plus will need new features to be developed such as High Dynamic Range and NIR capability.



## About the report

### Companies listed in this report

Advasense, Altasens, Anafocus, Anteryon, Aptina Imaging, Artificial Muscle, Asahi Glass, Awaiba, AWLP, BC Tech, BEI, Kimco magnetic, Bosch, Cambridge Mechatronics, Canesta, Canon, Ceradyne, China WLCSP, CMOSIS, Continental, Crysview, Cypress, DALSA, DBlur, Delphi, Dongbu HiTek, DXO-Lab, e2v, Espon-Toyocom, Forza Silicon, Foveon, Foxconn, Fujinon, Fujitsu, GalaxyCore, Grace Semiconductor, Given Imaging, Hamamatsu, Hella, Heptagon, Himax imaging, HHNEC, Hoya, Hynix, Invensense, Jabil, JCAP, Kantatsu, Kodak, Kolen, Konica Minolta, Kostal, KunShan RuiXin Micro, Largan, Lensvector, LG Innotek, Live Technologies, Medigus, Melexis, MGB Endoscopy, Micro-Imaging Solutions, Mitsumi, Murata, NEC / Schott, Nemotek, New Imaging Technologies, New scale technologies, Novatek, Omnivision, Omron, Optotune, OptoPac, Panasonic, PlanOptik, Phillips, Pixart, PixelPlus, Pixim, poLight, PGS Precision Pte, Q-Technology, Qaltrre, Rad-Icon, Rhevision, Retinal Implant, Saint-Gobain, Samsung, Sarnoff, Schott, Seiko, SEMCO, Senodia, SETi, Sharp, Sightic, Siimpel, SiliconFile, SMIC, SOITEC, Sony, STMicro, SuperPix, Tessera, Texas



Instruments, Toshiba, Trixel, TSMC, TowerJazz, UMC, Valeo, Valtronic, Varioptic, Vasstek, Vista Point, Viti, X-Fab, Xceed Imaging, XinTec, Zarlink, Ziptronix.

• **Authors**

**Jerome Baron** is leading the MEMS & Advanced Packaging market research at Yole Développement. He has been involved in the analysis of the CMOS image sensor industry at the sensor, packaging, assembly & test levels. He is also involved in the research linked to new equipment & materials for image sensor manufacturing. He was granted a Master of Science degree in Nanotechnologies from the National Institute of Applied Sciences in Lyon, France.

**Laurent Robin** is in charge of the MEMS & Sensors market research at Yole Développement. He previously worked at image sensor company e2v Technologies (Grenoble, France) and at EM Microelectronics (Switzerland). He holds a Physics Engineering degree from the National Institute of Applied Sciences in Toulouse. He was also granted a Master Degree in Technology & Innovation Management from EM Lyon Business School, France.

• **CMOS Image Sensors Technologies & Markets - 2010 Report**

Catalogue price: Euros 3,690

Publication date: February 2010

For special offers and price in dollars, please contact David Jourdan ([jourdan@yole.fr](mailto:jourdan@yole.fr) or +33 472 83 01 90).

## Other publications dedicated to the MEMS Industry

### SiTime SiT8002, MEMS Oscillator Reverse Costing Analysis – 2010 Edition

The reverse costing & engineering process analysis of the famous MEMS Oscillator SiT8002 supplied by SiTime Corporation...

### InvenSense IDG-600/650 2-Axis Gyroscope Reverse Costing Analysis– 2010 Edition

The reverse costing & engineering process analysis of the famous Dual-Axis MEMS Gyroscope IDG-600/650 supplied by InvenSense...

### Status of the MEMS Industry - 2009 Edition

Analysis of the current MEMS industry structure, the possible evolution of the business models, emerging applications...

## About Yole Développement

Created in 1998, Yole Développement is a market research and strategy consulting firm analyzing emerging applications using silicon and micro manufacturing. With 20 full time analysts tracking MEMS, Microfluidics, Compound Semiconductor, Power Electronics, Photovoltaic, Advanced Packaging and Nanomaterials, Yole Développement supports companies and investors worldwide to help them understand markets and follow technology trends.

### Services

- Market research and market data
- Technology analysis
- Market workshop
- Strategy consulting
- M&A support, fund raising and due diligence through Yole Finance

### Media

- Critical news, Bi-weekly: Micronews, the magazine
- In-depth analysis & Quarterly Technology Magazines: MEMS Trends Magazine – 3D Packaging Magazine – PV Manufacturing Magazine
- Online disruptive technologies website: [www.i-micronews.com](http://www.i-micronews.com)
- Exclusive Webcasts
- Live event with Market Briefings

### Publications

- Collection of market & technology reports
- Players & technology databases and market data
- Manufacturing cost simulation tools
- Component reverse costing analysis

## Contacts

Yole Développement  
45 Rue Ste Geneviève, 69006 Lyon, France  
Tel: +33 (0) 472 83 01 80

Fax: +33 (0) 472 83 01 83  
[www.yole.fr](http://www.yole.fr)



For information about:

- Advanced Packaging activities, Jérôme Baron ([baron@yole.fr](mailto:baron@yole.fr)) and Jean-Marc Yannou ([Yannou@yole.fr](mailto:Yannou@yole.fr))
- MEMS activities, Jean-Christophe Eloy ([eloy@yole.fr](mailto:eloy@yole.fr)) and Laurent Robin([robin@yole.fr](mailto:robin@yole.fr))
- Yole Développement: Jean-Christophe Eloy ([eloy@yole.fr](mailto:eloy@yole.fr))