

“We are the first bird to eat the fruit ...”

OPE journal took a look at the production centre of one of the largest manufacturers of equipment for printed electronics – ATMA in Taiwan

When the OPE journal team reached the entrance to the 15 000m² factory of ATMA in New Taipei, it was able to gain an excellent impression of the printing experts' production capabilities. The forecourt was paved with dozens of printing machines which needed to be prepared for shipping.

In accordance with Taiwanese manners we took off our shoes before we entered the company's offices. Soon after we were able to enjoy an excellent tea at the nearby MaoKong mountain.

“We are proud to be one of the world leaders in the field of high-end flat-bed screen printing systems, mainly used for industrial applications like solar wafers, mobile phone lenses, touch screen technology or printed circuits,” ATMA's owner T. C. Chen told us. “Some of the most renowned international brands are directly or indirectly using our equipment.”

The principal of the firm uses a symbolical comparison to describe the market presence of his company: “We are the first bird to eat the fruit. When the others come they will only find the core without meat while we are looking for other fruit.” ATMA employs more than 40 people at the R+D department (about 20% of the total staff in Taipei) to meet ever-increasing market requirements.

200 000 machines sold

ATMA's history begins way back in 1979 (see box). In the past 35 years the company has sold more than 200 000 sets of various printing machines for industrial products. Indeed, ATMA has marketed 250 different types of screen printers in over 70 countries. “Currently we ship over 350 printing units per month to global markets. However, our



T. C. Chen



The fully automatic solar cell screen printing line is used for the silicon (single crystal and poly crystal) solar cell industry med-stream, solar cell electrode screen printing purpose. The line includes automatic feeder, automatic electrode screen printer, automatic panel curing, oven, automatic buffer and flipper, magazine and an automatic unloader. For thin application, wafer thickness within 200µm, this line uses a digital even-pressure control system and parallel transport system to minimise the broken percentage



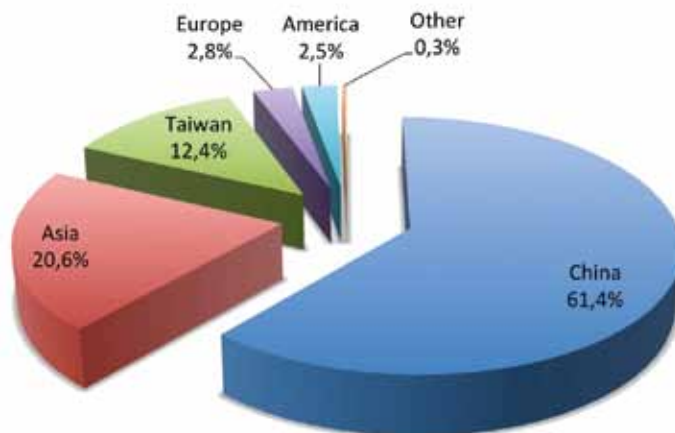
Web guiding with FE 52 color line sensor and DO 4021 command station



- color touchscreen
- real 2-dimensional live image of the web surface
- easy selection of the guiding criterion
- smallest line width for web guiding: 0,05 - 0,1 mm

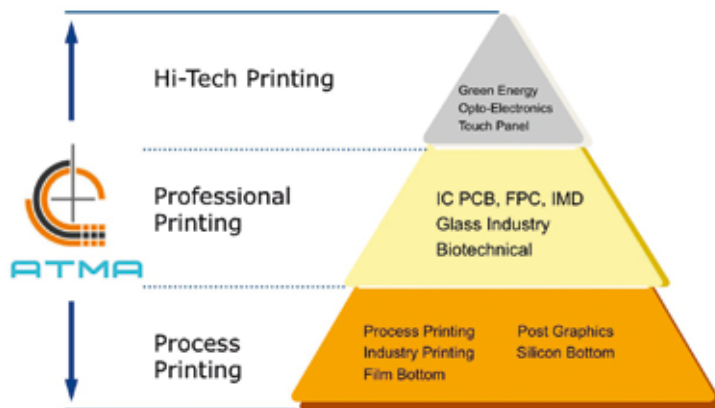
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Market share



Source: ATMA

Market Orientation



ATMA produce high-tech, professional applications and process printing to satisfy customers' need.

Source: ATMA

highest total was 560 units per month to fulfil a large order of a well known smart phone producer,” explains Mr Chen.

“We are a global player, but our management philosophy follows Taiwanese moral standards: treating people with sincerity, running our business with trust, practising work with diligence and, last but not least, handling matters with harmony.”

Touch panels represent nearly 50% of the company’s production but the fast growing business area of printed circuit boards already enjoys a share of more than 10%. With a sales share of over 60%, China is the firm’s largest market. This is the reason why the company opened a factory in Kuanshan

(South-China) 10 years ago. Today that facility employs around 120 employees.

“They always produce a large number of one type of machine,” explains Chen. “This concentration considerably decreases production costs per unit and allows us to combine mass production with both quality and lower costs.”

Prices and markets

In high quality markets such as Germany ATMA clearly benefits from lower purchase costs of its equipment compared to local suppliers. This is also good for the distribution partners who can make reasonable profits but nevertheless undercut the prices of competitors.



For thin film applications a roll-to-roll optical inspection system is needed. This ATMA line, consisting of CCD-line scan cameras is a powerful instrument to detect defects on homogeneous webs



As part of their employee training programme ATMA has a library of all relevant trade magazines

In other parts of the world, such as India or Africa, it is necessary to offer the same machines in a lower price bracket. ATMA manages this by operating without distribution partners or agents in these regions. "If we use our own people to do the selling we don't have to pay commission and can pass on these savings to our customers.

Another basic principle of ATMA is its belief in diversification: "If you concentrate too much on one industry you will be good as long as they are good," explains Chen. "But, if they are bad, you will find it more and more difficult to keep pace with the competition."

Future benefits

Chen is sure there are great prospects for printed electronics. "Piece by piece production is no way to approach the future. The market will be ready for roll-to-roll manufacture very soon." ATMA is well prepared for that. Up to now the company has already sold 4000 roll-to-roll printing machines for circuits.

Another hot market, according to Chen, is the solar cell segment. "With the end of political support this market will change completely. Until now the companies who invested in the solar business were prepared to pay almost any price asked because they could rely on the government to give them the money. Without this support the firms concerned will have to survive by themselves."

History

- 1979 Mr. T.C. Chen founded the company and developed a normal printer.
- 1981 ATMA pioneered a small pneumatic control screen printer.
- 1987 ATMA established the Li-Yuan Enterprise Co. for promoting overseas markets.
- 1988 The company joined the European FESPA and American SGIA exhibitions to open up the markets in both continents and also spread distributors/agents channels.
- 1990 Inaugurated headquarters and established the Zhi-Yuan Enterprise Co. Ltd. for promoting overseas markets.
- 1993 Four printers won the 1st prize of Symbol of Taiwan Excellence and established a Shanghai branch in the same year.
- 1995 Inaugurated the 2nd branch and achieved ISO9002 certification.
- 1996 ATMA received the Symbol of Taiwan Excellence for four years, and also won the National Silver Award of Excellence.
- 1997 ATMA introduced ISO 14000 EMAS and received the National Innovative Research Award winner from Ministry of Economic Affairs, ROC. In addition, ATMA was approved to be a role model of Taiwan Small and Medium-Sized Enterprises.
- 1998 ATMA was certified to both ISO9001 and ISO14001.
- 2000 ATMA received the National Little Giant Award and CE marking for a series mechanism of four-pillared hydraulic machine.
- 2001 Upgraded the ERP system and combined related companies into a group which was renamed the ATMA Championship Enterprise Corporation.
- 2003 ATMA received the National Award of S & M Enterprises and the National Golden Brain. In addition, Mr. T.C. Chen gained the Taiwan and Overseas Entrepreneurs Award.
- 2004 Inaugurated headquarters expansion and established Kunshan office. Automatic glass printer got subsidised by the Industry Development Bureau, Ministry of Economic Affairs.
- 2006 Inaugurated new factory headquarters of the Kunsha branch and started mass production in the established OTK Department.
- 2007 ATMA entered the green energy equipment industry and received subsidisation for its automatic solar cell printing line from the Industry Development Bureau, Ministry of Economic Affairs.
- 2008 ATMA purchased the 26 000m² Aspire Park plant in Longtan, Taoyuan for future development.
- 2010 ATMA purchased 16 520m² of land at HWA YA Technology park, Linkou for expanding new plant.

German-Taiwanese cooperation



A cylinder screen printing machine, which is manufactured for the German partner SPS

The cooperation between ATMA and the German company SPS TechnoScreen (Wuppertal) is a good example of cross-border teamwork. Within the framework of an OEM contract SPS moved its production from Germany to Taiwan.

The SPS range of STOP cylinders is known for its accuracy, speed and long trouble-free life. With 1000+ installations worldwide, SPS cylinder screen printing machines have been among the first and the leading products in this field for nearly six decades. From day one

onwards SPS has been focusing on one-stop solutions for demanding graphic and high-tech industrial screen printing applications.

Kirsten Brast, managing director of SPS TechnoScreen, says: “Quality and reliability have always been in the forefront of our company. The OEM cooperation with ATMA will secure this for the future. The company philosophy of ATMA fits perfectly with our own views of quality and innovation. On top of that, the majority of our machinery finds its way to the Far-East today, and it will generate great benefits to have

our production and a professional after-sales service organisation close to major expanding markets.”

The SPS core product will maintain its original German identity with a number of defined core components supplied from Germany and a team of SPS engineers closely interacting with the design and assembly teams in Taipei.

T. C. Chen added: “With the production of SPS cylinder presses we are able to fully benefit from our most advanced production facility in Taipei with its efficiency and quality focus.”

“Now everybody will look for cheaper equipment and this is just what we can offer. Our products for silicon solar cell screen printing lines are up to 60% cheaper than that of our competitors. The more expensive models may have more speed and less defect rates but they still

cost too much. Now, when the real competition starts, we will play a significant role!”

Asked about the key challenges for the future, Chen points out two things:

“The first concerns human resources. We need good, creative and determined engineers but, as they don’t come ready

made on the street, we will have to train them until they achieve perfection.

The second concerns the need to develop high quality machinery with a higher level of automation and a smaller operating crew.”