



Cicor Technologies Ltd.

Investora 2019

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Disclaimer

19 September 2019



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A person wearing a full-body white protective suit, a clear face shield, and yellow gloves is working in a cleanroom or laboratory. They are holding a metal tray containing several small, rectangular samples. The background shows industrial equipment and a clean, bright environment.

Alexander Hagemann (CEO)

About the Cicor Group

The Cicor Group

At a glance

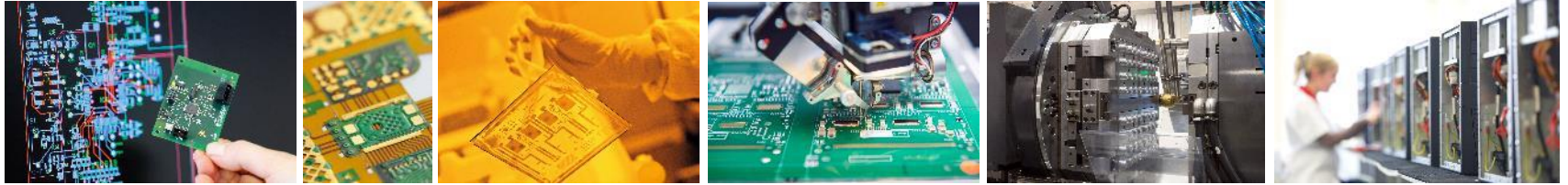


- The Swiss leader in design and manufacturing of advanced electronics
 - Advanced Microelectronics and Substrates (AMS) Division: Technology leader
 - Electronic Solutions (ES) Division: Full solution provider for electronics and plastics
- Focus on growth markets: Medical, Industrial, Aerospace
- Milestones
 - 1966: Founded as manufacturer of Printed Circuit Boards (PCB)
 - 1998: Listed on the Swiss Stock Exchange
 - 2005-2008: Established the present service offerings through acquisitions
 - Since 2016: Focus on technology leadership, operational excellence, lean organization
- Net Sales 2018 of CHF 248 million
- 2,129 employees worldwide at 10 production sites in Europe and Asia

Leading partner for advanced electronics

An unparalleled offering of products and services

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Medical



Industrial



Aerospace





Alexander Hagemann (CEO)

The Cicor Group in H1/2019

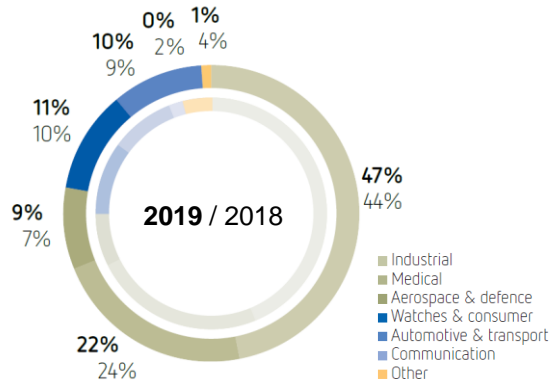
Cicor in H1/2019

Further gain in market share

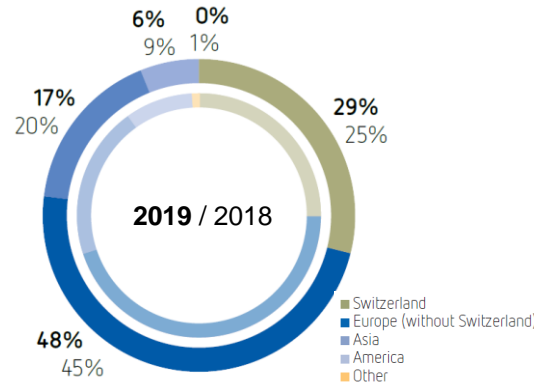


- Sales growth of 7.3% to CHF 131.9 million
- Order intake of CHF 111.8 million – Book-to-bill ratio of 0.85
- EBIT of 7.0 million (5.3%), EBITDA of CHF 11.9 million (9.0%)
- Opening of the printed electronics technology center in Bronschhofen (Switzerland)

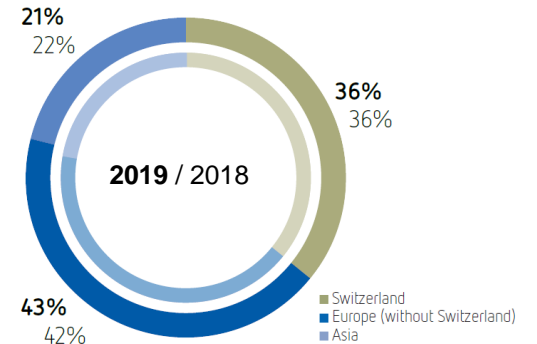
Net sales by industry



Net sales by export region



Net sales by production region



Advanced Microelectronics and Substrates

Further margin growth in the AMS Division



- Sales is practically unchanged at CHF 31.4 million
- Increase of EBIT margin to 11.8%, EBITDA 18.3%
- All operations have made a considerable contribution to the results
- The number of customer projects handled collaboratively by the AMS and ES Divisions has grown considerably and first significant projects are in start of series production, mainly for customers in the medical technology sector.
- Further expansion of technological leadership

Electronic Solutions

ES Division grows significantly



- ES has grown faster than the market again
- Sales growth of 9.7% to CHF 100.5 million
- EBIT decline of 7.8% to 4.1 million, EBITDA growth of 3% to CHF 6.9 million
- ES Asia was influenced by the implementation of SAP and the transfer activities in Singapore and Batam (Indonesia).
- ES Europe was influenced by a value adjustment of CHF 0.3 million from the bankruptcy of a long-standing Swiss customer.
- The successful go-live of SAP in Asia took place in April.
- The competence center for precision injection molding in Batam (Indonesia) is taking shape.

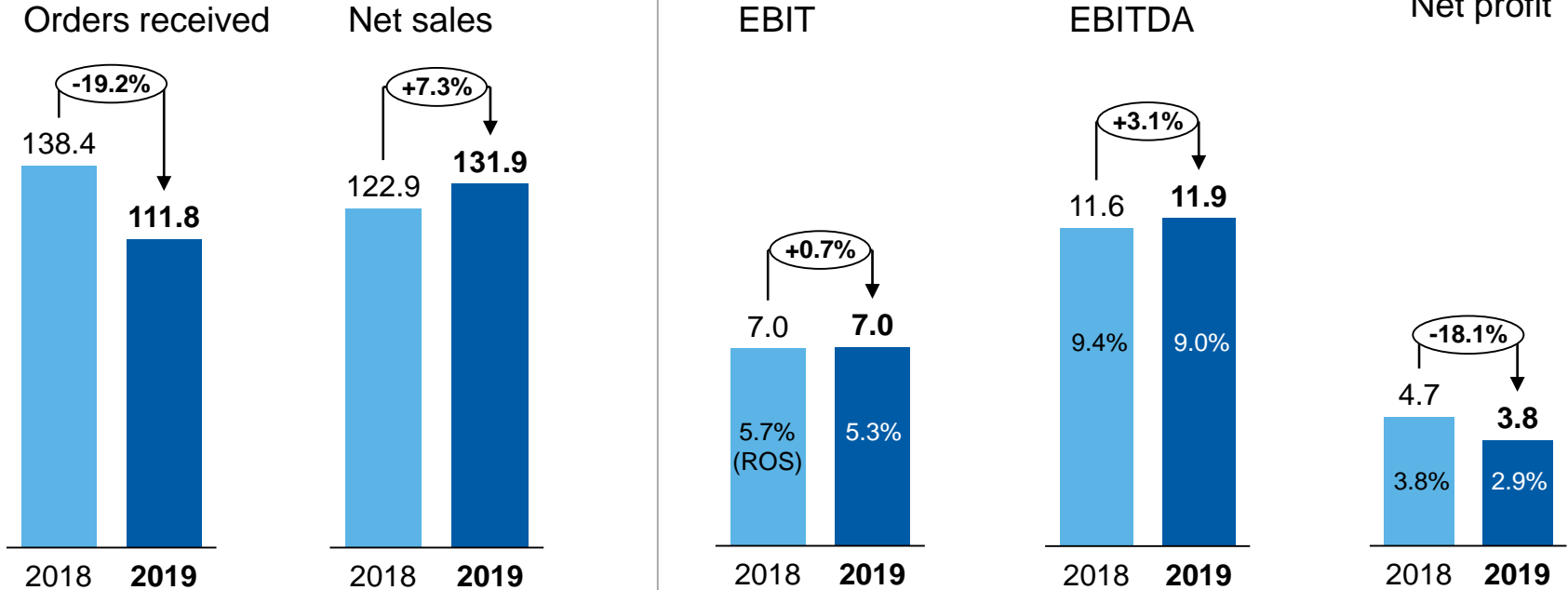


Patric Schoch (CFO)

Financial Results H1/2019

Financial achievements H1/2019

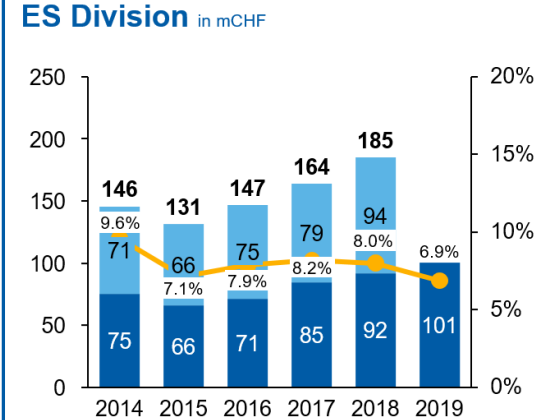
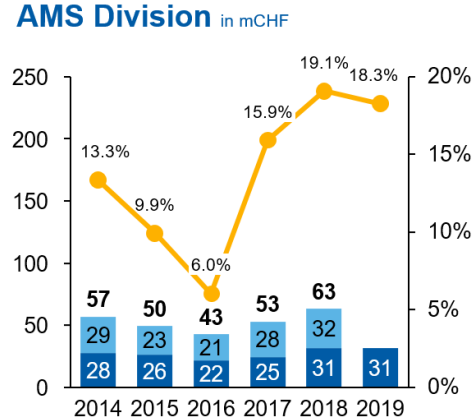
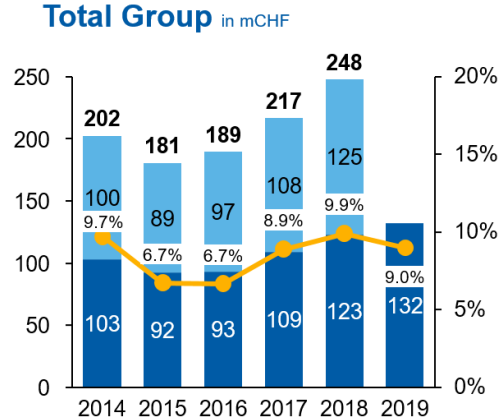
All figures in CHF million at actual FX rates



- Sales growth of 8.8% in local currencies

Financial performance 2014 – H1/2019

All figures in CHF million at actual FX rates



Group in TCHF	H1/2018	H1/2019	%YoY
Sales	122 943	131 915	7.3%
EBITDA	11 565	11 924	3.1%
ROS%	9.4%	9.0%	-0.4%pt.

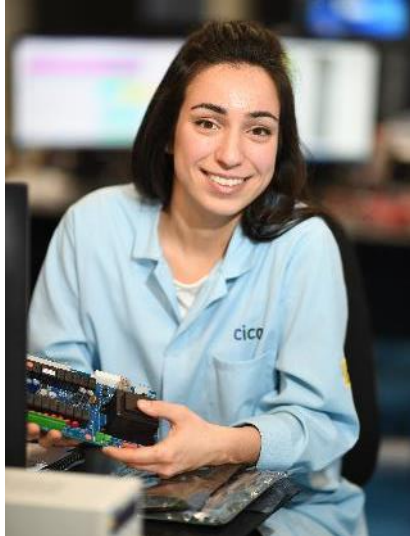
AMS in TCHF	H1/2018	H1/2019	%YoY
Sales	31 328	31 416	0.3%
EBITDA	5 604	5 739	2.4%
ROS%	17.9%	18.3%	+0.4pt.

ES in TCHF	H1/2018	H1/2019	%YoY
Sales	91 620	100 540	9.7%
EBITDA	6 712	6 913	3.0%
ROS%	7.3%	6.9%	-0.4%pt.

■ Sales H2
 ■ Sales H1
 —●— EBITDA% (before restructuring)

Outlook

Expectations for 2019



- **Sales** for the whole of 2019 are expected to achieve a low single-digit growth rate.
- In the **EBIT margin** is a slight fall expected for the whole year compared with 2018.
- Acquisition of **new customers** are expected in both divisions.
- Further gains in **market share** are expected.

Mid-term targets

Cicor Technologies Ltd.



Market Focus	Topline growth	EBIT target	Profit distribution
Industrial Medical Aerospace	Above the growth of global electronics production	6 - 8%	Stable and increasing Dividends



Dr.-Ing. Andreas Albrecht (Dev. Eng. Printed Electronics)

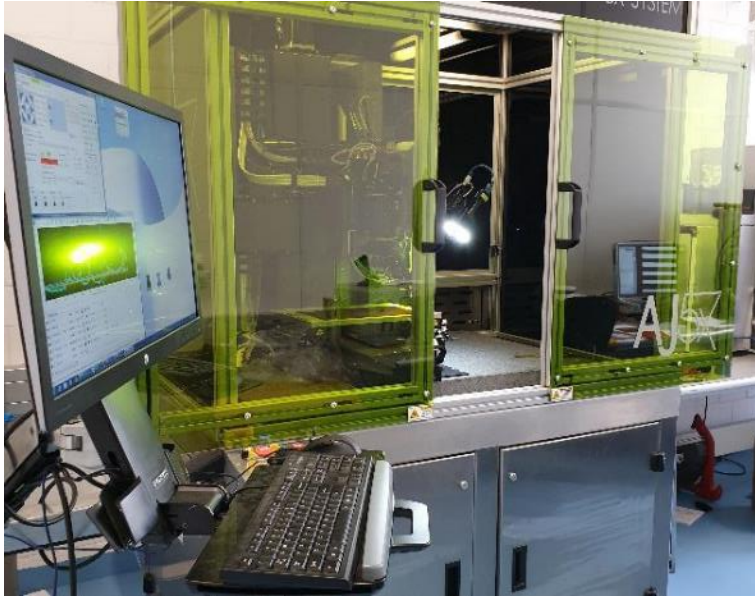
Printed Electronics

AJOX

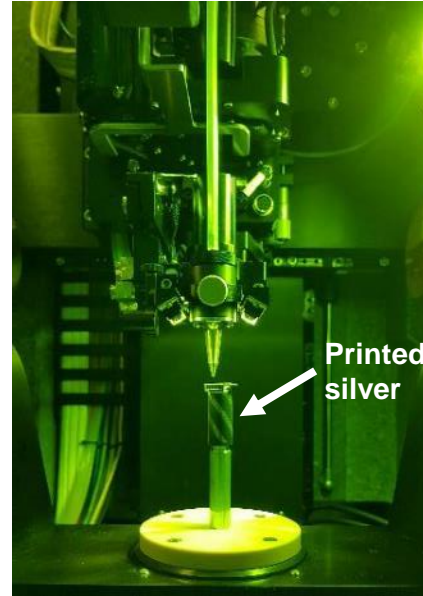
Aerosol Jet Printing (AJP) Lab

Since March 2019 at Cicor in Bronschhofen

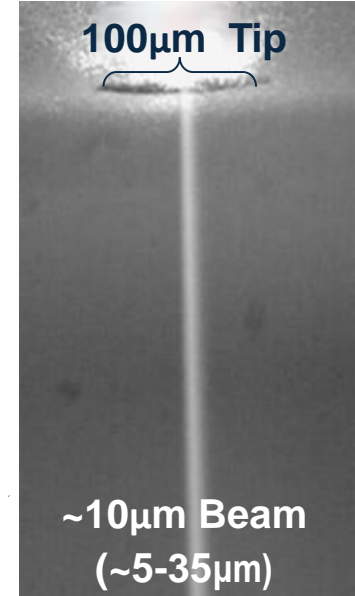
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New development lab at Cicor with fully equipped development AJP machine:
Two different atomizers, laser, UV, 3- and 5-axis motion



Print head deposits silver ink to injection molded plastic part



Aerosol jet exiting the nozzle

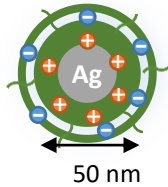
Principle of Printed Electronics

From bulk to printable



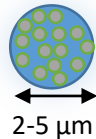
Bulk material with desired functionality

- Metals -> Superior conductivity
- Conductive polymers -> Resistive, transparent,...
- Dielectrics -> Isolation, coating,...
- Sensible Materials -> Sensing of physical / chemical / environmental parameters



Functional ink

- Metal particle diameter in nm-range
- Dispersed in solvent mixture, typically 1–5% (vol.)
- Or solvent-free polymer lacquer

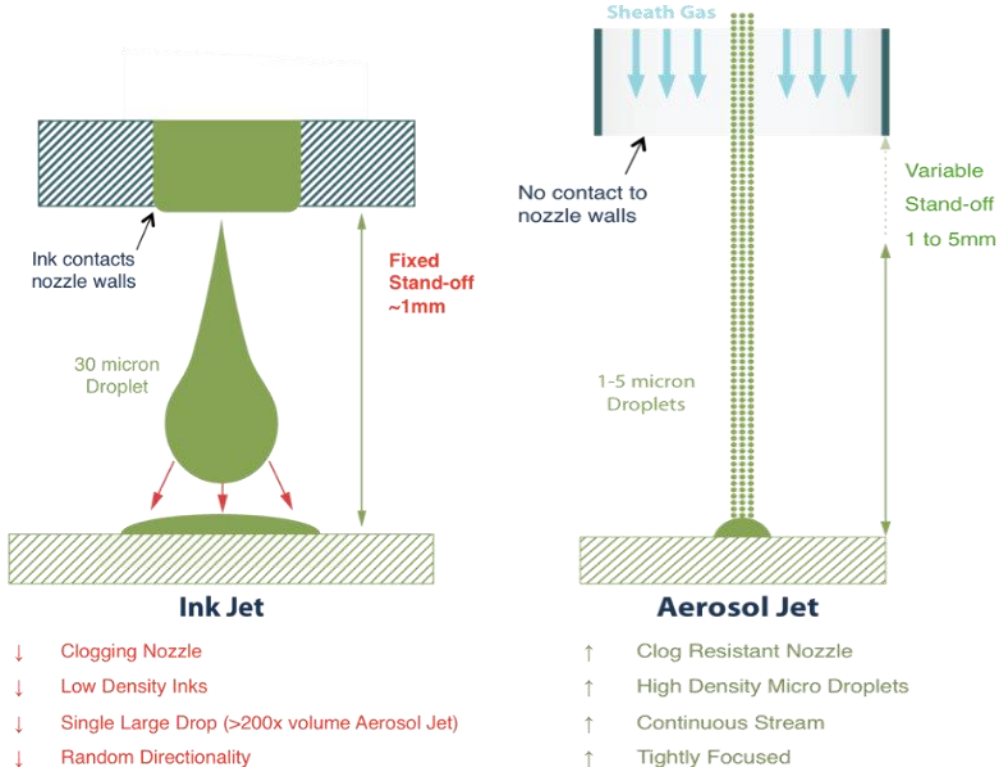


Droplets

- Small ink droplets
- Travel to the substrate

Comparison of printing technologies

Inkjet vs. Aerosol Jet Printing



Technical advantages of AJP

- Higher Resolution
- Higher printing thickness
- Larger material portfolio
conductive, non-conductive, resistors, biocompatible, photoresist, etc.
- Possibility to produce 3-dimensional multilayer circuits

Other advantages

- Simple chemistry, no separate plating step
- Less maintenance efforts
- No proprietary printing materials

Process development

Aerosol Jet Printing of Functional Ink



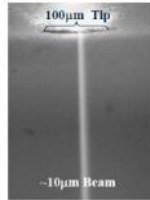
Selection of substrate and priming

- Wettability and Roughness
- No holes and burrs



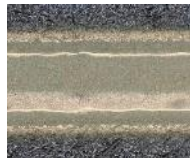
Selection of functional ink

- Desired functionality
- Good adhesion and processability



Identification of atomization and deposition parameters

- Atomization power, gas flows
- Ink condition and stability
- Temperatures, speed, mass output



Identification of curing parameters

- Temperature, time, ...
- Curing method: oven, laser, UV

Current Customer Applications

Example: Printed Antennae



Silver antenna on LCP



Antenna with **protection overcoat**

Antennae with conductive silver ink

- For consumables, e.g. hearing aids
- Bluetooth, GPS, and others

Isolation and protection layers

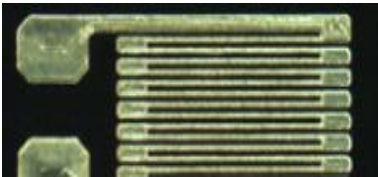
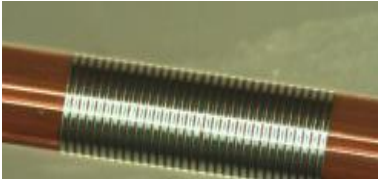
- Protect sensitive wiring
- Enables masking and multilayer printing

Wiring using silver or copper ink

- Mainly for consumables, e.g. smartphone components
- Via-free multilayer designs possible
- SMD assembly by conductive glue or soldering

Possible Applications


Printed electronics



Source: Optomec, Inc.

Possible printed electronics applications

- Antennae for mobile devices
- Multi-layer PCBs on 3D objects
- Sensors
 - Physical parameters, e.g. strain gauges, force sensors
 - Environmental parameters, e.g. temperature and humidity sensors
 - Chemical parameters, e.g. pH value, CO concentration
 - Medical parameters, e.g. ECG, blood tests
- Transistors
- OLEDs, organic photodiodes and photovoltaic
- Semiconductor packaging, e.g. 3D stacked die
- And many more...

A woman in a white lab coat and hood is looking through a microscope in a laboratory. In the background, another person in a white lab coat is working at a workstation. The scene is brightly lit, suggesting a clean and professional environment.

Alexander Hagemann (CEO)

Investor Relations

Investor Relations

Agenda 2019/2020



- Annual Report 2019 12 March 2020
- Annual shareholder meeting 2020 16 April 2020 in Boudry (Switzerland)
- Interim report 2020 August 2020

Investor Relations

Contacts



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Thank you for your attention.

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