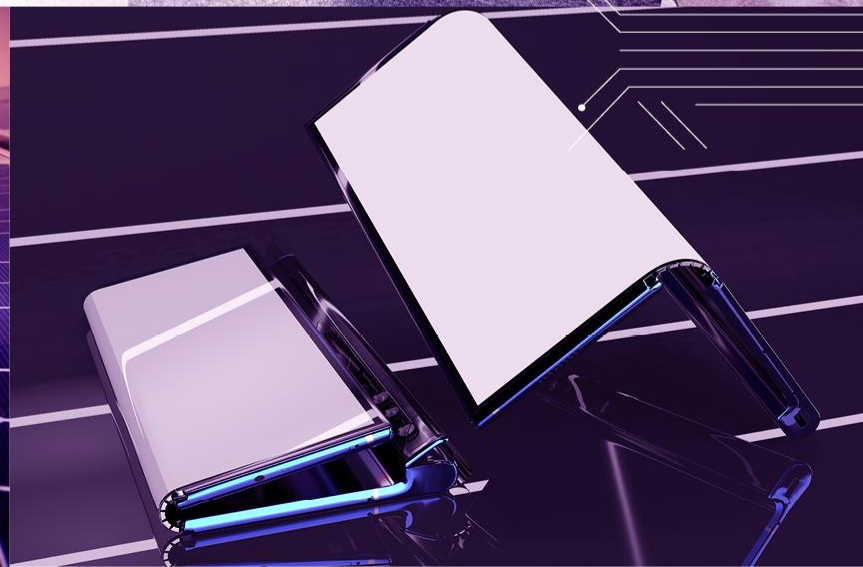
XTPL®

shaping global nanofuture

INVESTOR'S PRESENTATION FOR Q1 2020

XTPL S.A.

May 27, 2020



AGENDA

EQUITY STORY

1. TECHNOLOGY	2. APPLICATIONS	3. VALUE	4. MARKET	5. COMMERCIALIZATION
6. PIPELINE	7. EVENTS	8. FINANCE	9. TEAM	10. VISION

EQUITY STORY

XTPL develops the most precise printing technology in the world applicable in the rapidly growing electronics market.

Value of printed electronics market in 2018

$ 10 billion

$ 74 billion

Global value of printed, flexible and organic electronics market in 2030

Number of application fields in which the company is currently commercializing its technology

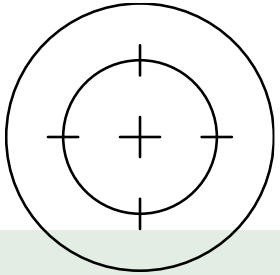
3

5

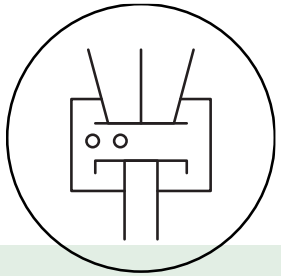
Number of further verified application fields in which the company will commercialize in the next steps

TECHNOLOGY BREAKTHROUGH

XTPL’s nanoprinting method is ground-breaking. This is because of a unique combination of several features:



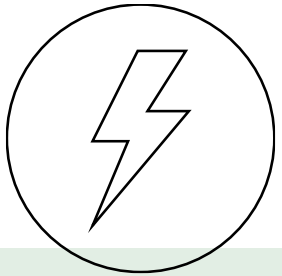
it offers the level of **precision that cannot be achieved** by any other printing method in the world



it allows for the traditional advantages of print – such as **scalability, cost effectiveness, simplicity and speed** – to be used in production of advanced electronics

additive method

it ensures significant time and material savings



it does not require electric field, which fully **eliminates the risk of damage** caused by such field to any electrically active components

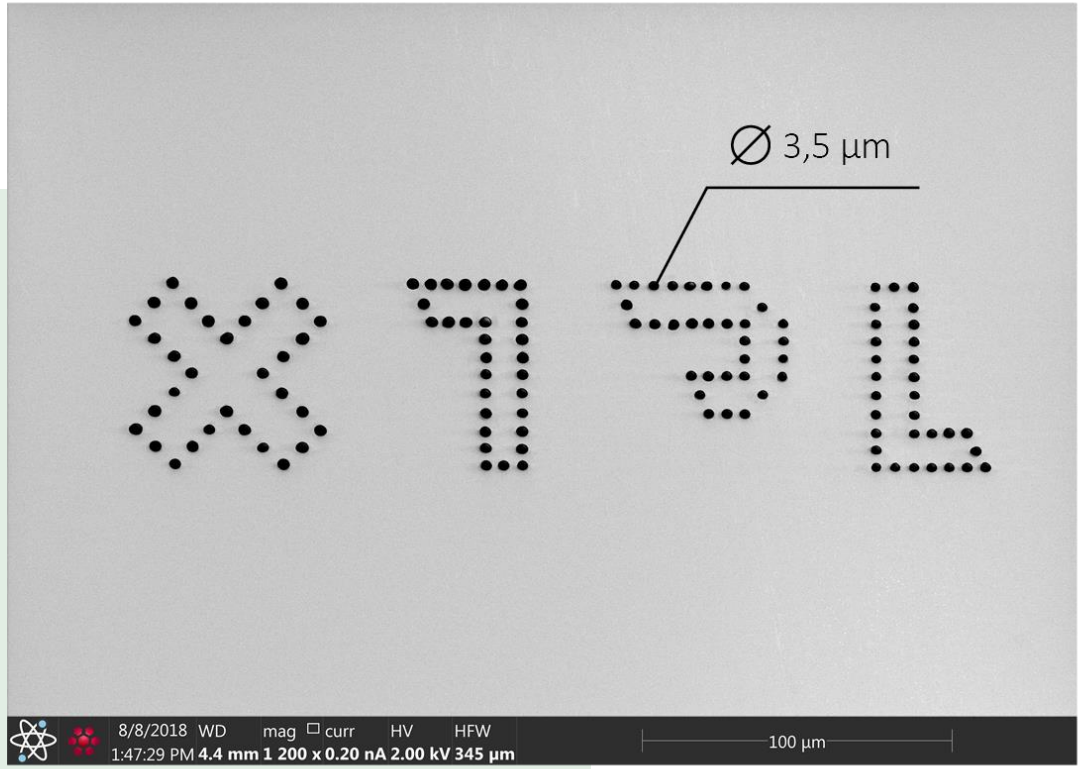
PRECISION

CURENT STANDARD
The minimum feature size is 20 µm

Due to the progressing miniaturization and growing complexity of devices, the market expects precision at the level of single micrometers. Such a precision cannot be provided by any printing method currently available on the market.

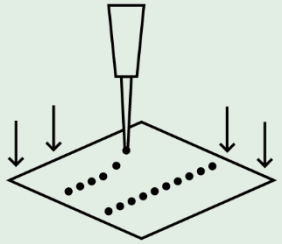
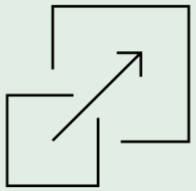
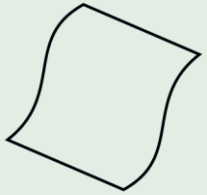
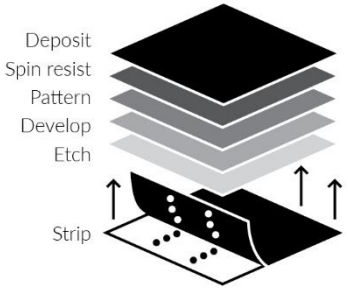
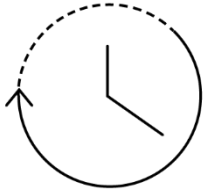
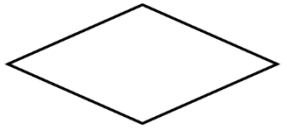
For example, microdots which are currently achieved on the market are usually around 50 µm in diameter, the minimum being 20 µm, while XTPL at present reaches dots of 1 µm in diameter and plans to go even below this limit.

XTPL METHOD
The minimum current feature size is 1 µm



TECHNOLOGY

ADDITIVE VS SUBTRACTIVE METHOD

	APPLICATION	TIME AND COSTS	ENVIRONMENT	SUBSTRATE
XTPL ADDITIVE	 Precise application/ simple process	 Effective and flexible	 Safe for the environment	 Most substrates/ even curved ones
SUBTRACTIVE	 Removal of unnecessary material to obtain a pattern/ multi-stage process	 Time and material consuming	 Requires highly corrosive solutions	 Only flat substrates

TECHNOLOGY COMPARISON

XTPL nanoprinting technology eliminates **all the disadvantages** of methods comparable in various application fields

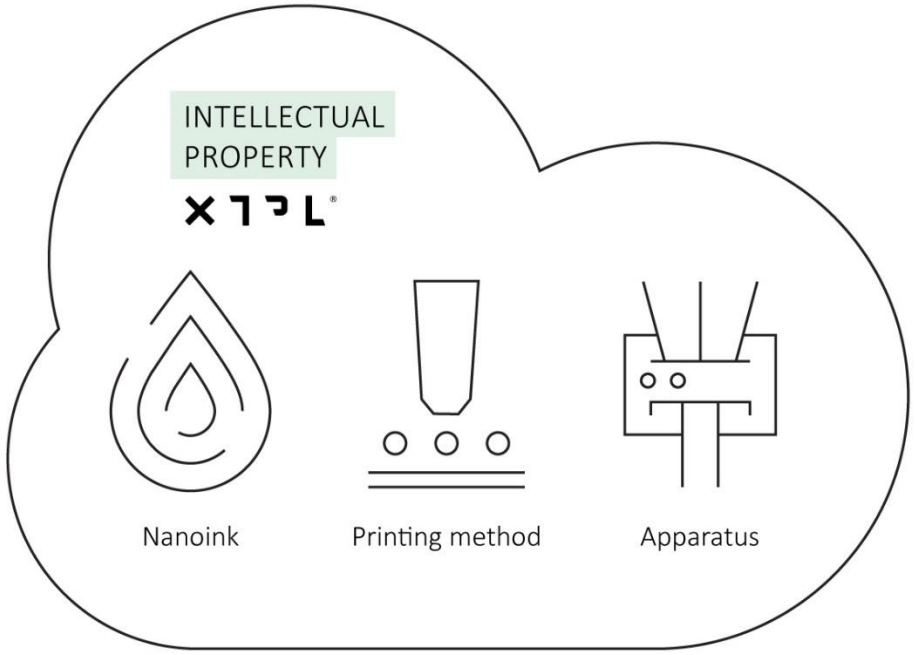
PARAMETERS	INKJET	EHD	LCVD	LITHOGRAPHY	XTPL
precision	low up to several tens of micrometers	high up to single micrometers	average up to several micrometers	very high at the nanometer level	high up to single micrometers
additive method	yes	yes	yes	no subtractive method involves removing of excess material	yes
toxic substances	none or negligible	none or negligible	yes very toxic, difficult-to-neutralize gases	yes photoresist and chemicals used for removing material from the substrate	none
cost-effectiveness	high	high	low a small amount of gas effectively used in deposition	low excess material must be removed from the substrate; the photoresist cannot be used multiple times	high
simplicity	high one-step process	high one-step process	average one-step process, but the use of gases requires complex handling	low multi-step process, needs to be handled by a group of qualified specialists	high one-step process
risk of damage by electric field	none	high applied voltage > 1 kV	none	none	none

PROTECTED INTELLECTUAL PROPERTY

XTPL global solution is systematically secured by expanding the patent cloud. The company has already submitted 15 patent applications.

Unique and well-protected intellectual property

- is a product
- determines the company's market position
- significantly affects the company's value
- allows to gain a competitive advantage over other market players
- enables safe commercialization
- guarantees appropriate negotiating position before commercial contracts are signed



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Gill Jennings & Every LLP, London UK

K&L Gates, Palo Alto, CA, USA

APPLICATIONS

PLATFORM CHARACTER

XTPL®

ADVANCED ELECTRONICS

- The global value of printed, flexible and organic electronics market amounted to $ 37.1 billion in 2019
- Its estimated value in 2030 is $74 billion
- CAGR 2019–2030 – 6.5%

STRONG MEGATREND

Production of technologically advanced devices using cost-effective and scalable methods.

XTPL has developed a **technology** that **enables that advance.**

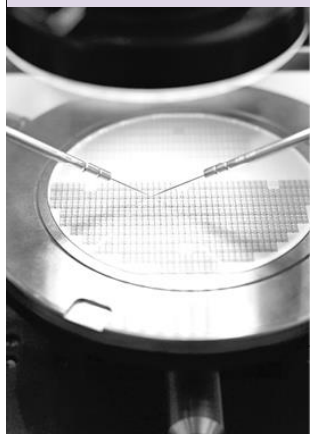
SMART GLASS

$1.45 bilion
CAGR 2019-2026 16.3%

DISPLAYS

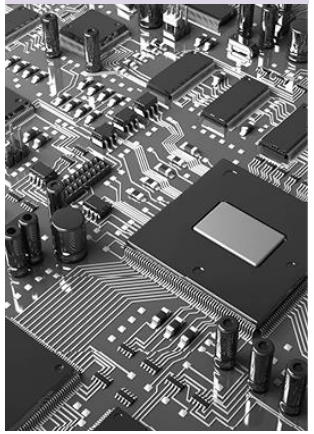
$28.7 bilion
CAGR 2019-2023 12.6%

SEMICONDUCTORS



$469 bilion
CAGR 2019-2024 4.1%

ADVANCED PCBs



$55.4 bilion
CAGR 2019-2024 4.49%

SECURITY PRINTING

$51.8 bilion
CAGR 2019-2024 12.5%

BIOSENSORS

$3.9 bilion
CAGR 2019-2029 0.98%

PHOTOVOLTAIC CELLS

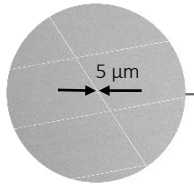
$19.4 bilion
CAGR 2019-2023 19.4%

MARKET

FIRST TARGETED MARKETS

SMART GLASS

XTPL technology used for creating invisible conductive structures for glass conversion



Application: **smart glass**

Size of the market: 2019 – $ 1.45 billion

Market entry strategy:

Market readiness: advanced PoC

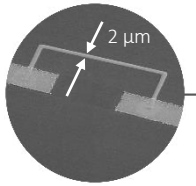
Market partner: yes (United States)

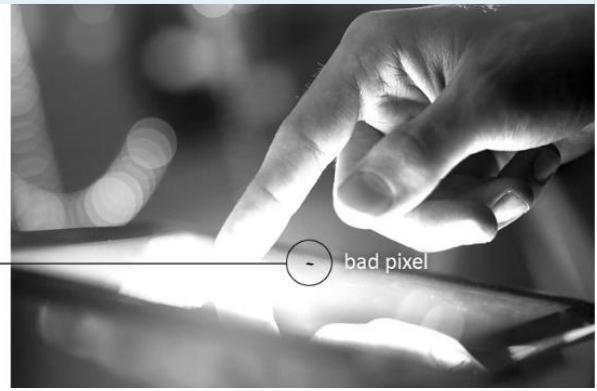
Competition:

- DNP
- Goss International
- Gunze
- Komori

DISPLAYS

XTPL technology used for repairing open defects occurring during display production





Application: **open defect repair (ODR)**

Size of the repair market: 2019 – $ 270.4 million

Market entry strategy:

Market readiness : integration with partners' technological processes

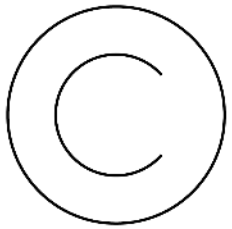
Market partner: yes (group of entities interested in purchasing the licence)

Competition:

- Orbotech (KLA-Tencor)
- V Technology
- HPK
- Han's Laser
- Charm Engineering

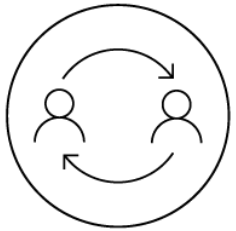
BUSINESS MODEL

XTPL commercializes its technology by selecting a model that is best suited to the specific application field



LICENSING

- the company develops technological solution dedicated to a particular application field and license it to a partner
- on its basis, the partner builds devices that allow the technology to be used in the industry
- the company generates revenues from one-off license fees for providing the license, and recurring license fees (royalties) related to the sale of devices in which the developed technology is implemented; recurring revenues are also achieved from the sale of nanoink



STRATEGIC PARTNERSHIP

- the company develops technological solution dedicated to a particular application field; the solution is then commercialized in cooperation with a strategic partner
- the company enters into e.g. a joint venture agreement with the partner
- commercialization tasks are divided between the partners in accordance with their competencies and potential
- the company participates in profits achieved through the joint venture

PIPELINE

Active projects with large international corporations **8**

>100 Verified sales prospects in several application fields

CLIENT A	CLIENT B	CLIENT C	CLIENT D	CLIENT E	CLIENT F	CLIENT G	CLIENT H
Manufacturer of equipment for the production of displays	Manufacturer of consumer electronics	Manufacturer of devices for the production of displays	Manufacturer of devices for the production of displays	Manufacturer of displays	Manufacturer of lighting equipment	Manufacturer of integrated circuits for the automotive sector	Smart glass manufacturer
Sale of technology demonstrator/ Industrial technology licensing	PoC/ Demonstrator sale/ Industrial technology licensing	Demonstrator sale/ Industrial technology licensing	Decision to be made once the PoC phase is finalized	Moving to the next evaluation phase/ demonstrator sale	Decision to be made once the PoC phase is finalized	Moving to the next evaluation phase/ demonstrator sale	Technology licensing / Strategic partnership
Displays – open defect repair	Displays – open defect repair	Displays – open defect repair	Displays – open defect repair	New generations of displays – improved conductivity	Conductive connections for semiconductors present in lighting devices	Integrated circuits / sensors	Electrochromic smart glass

EVENTS

HERBERT WIRTH IN THE SUPERVISORY BOARD

JANUARY 2020

- on 9 January 2020, XTPL shareholders appointed Prof. Herbert Wirth, the former CEO of KGHM Polska Miedź S.A., to the company's Supervisory Board
- Mr. Wirth has significant experience in business development on global markets and unique competences as well as network of contacts which will strategically strengthen the company's business activities, especially in the Chinese market

COOPERATION WITH COWIN

FEBRUARY 2020

- on 28 February, XTPL S.A. and Suzhou Cowin Laser Technology Co Ltd based in China signed a Technology Evaluation Agreement (TEA)
- Cowin is looking for a technology for repairing open defects in new generation displays
- The aim of the proof of concept stage realized by both entities is to confirm the parameters of XTPL technology and to assess the possibility of implementing it in the Chinese partner's production processes
- Cowin is a supplier for leading players in FPD sector, such as BOE (leader of the global display market, which is working on an independent proof of concept project with XTPL); CSOT (display manufacturer based in China, producing LCD panels and developing OLED technology) and Tianma (global display manufacturer operating for over three decades, producing modern LCD displays and new display lines using the AM-OLED technology)

EVENTS

FIRST COMMERCIAL ORDERS

MARCH 2020

- XTPL carried out three sales transactions of nanoink based on silver nanoparticles
- nanoink is one of the key elements of the XTPL technology, protected by international patent applications
- two deliveries were carried out for the partners operating in the display sector, the first application field commercialized by XTPL, while the third order was carried out for one of the major players from the EMEA region operating in the display industry and several other advanced electronics sectors
- the sale of the nanoink confirms the significant potential of XTPL's technology

DUAL LISTING

MARCH 2020

- on 6 March 2020, the Frankfurt Stock Exchange consented to admit XTPL shares to the Quotation Board segment, which is a part of the Open Market
- this step will facilitate the purchase of XTPL shares by investors, where such factors as valuation in EUR or the transaction systems play a key role
- this operation has not generated any costs for XTPL as the Company was not responsible for its initiatiion – the admission was a result of steps undertaken by a German investment bank
- XTPL shares are also listed in Munich and Stuttgart
- XTPL shares are traded on a dual-listing basis, with the Warsaw Stock Exchange remaining the Company's main trading floor

EXPANSION OF THE PATENT PORTFOLIO

XTPL®

Q1 2020

The first two patent applications submitted in 2020 are related to the method and apparatus for characterising and optimising ink flow in the printing head. This method is generic and can be applied not only to XTPL technology, but also to other printing techniques. Therefore, both patent applications are commercially valuable on its own merits

K&L GATES
Palo Alto, CA, USA

The third patent application is a crucial invention from the perspective of applying XTPL technology in the smart glass sector. It describes how to significantly improve the parameters of transparent conductors

COVID-19 – IMPACT ON XTPL

MARKET IMPACT

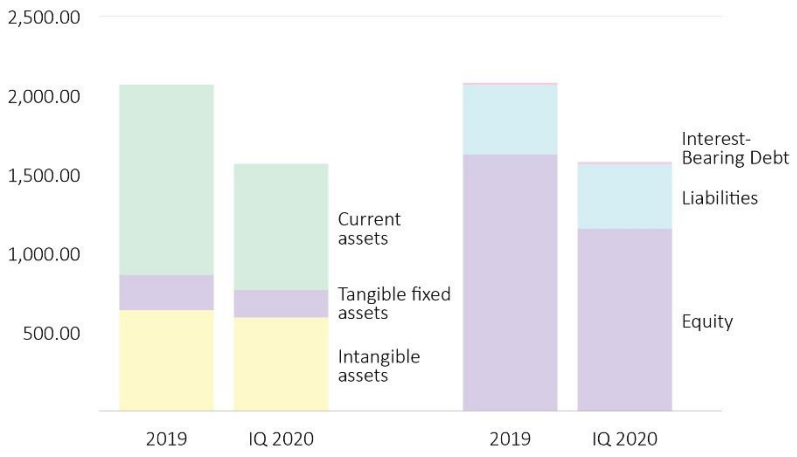
- XTPL activities and target markets are not among the ones which are heavily affected by COVID-19.
- Consumer electronics manufacture and sales have not been significantly impacted by the pandemic. However, the distribution channels will be more dynamically transitioning towards online sales.
- COVID-19 does not impact the manufacturing trends related to miniaturization, more efficient use of materials, and desire to deliver more advanced functionalities to the customers.
- We are in close contact with our partners and we are monitoring the situation on a continuous basis.

IMPACT ON INTERNAL ACTIVITIES

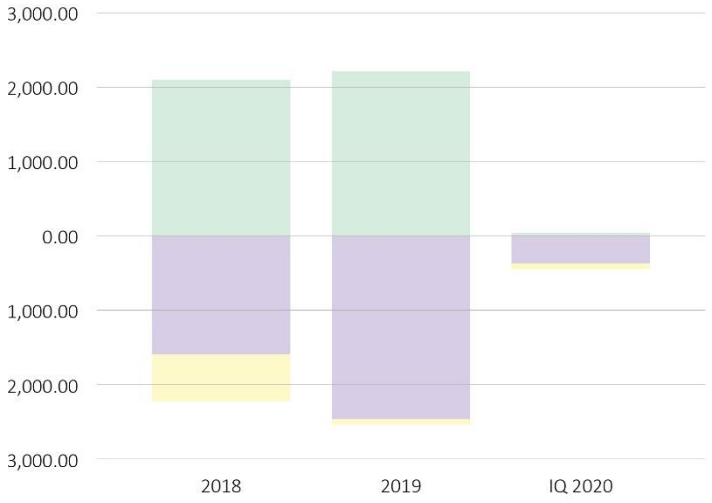
- The Company is well prepared internally for remote work. Technological activities are executed continuously in our labs under appropriate safety restrictions.
- The business collaboration with external partners is continued, with frequent e-mail contact, conference calls and experimental evaluation being executed.
- However, the collaboration with US-based partners is impacted due to their restrictions related to laboratory work in some of the states. Therefore, some delays in those projects can be expected.
- Production and delivery of inks and samples which are part of the evaluation programmes were not impacted.
- As a response to general market uncertainty, we implemented measures to reduce our monthly cash-burn from approx. EUR 250k to approx. EUR 150k.

SELECTED CONSOLIDATED FINANCIAL DATA

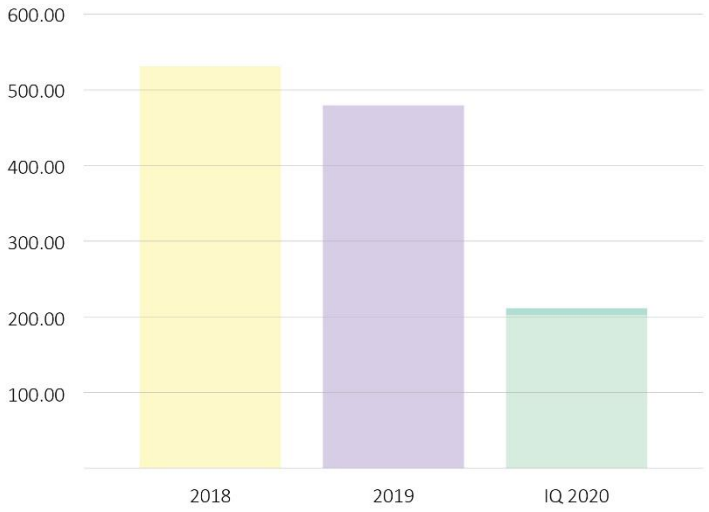
BALANCE SHEET STRUCTURE



CASH FLOWS



NET REVENUE FROM SALES



Net cash flows from investing activities

Net cash flows from operating activities

Net cash flows from financing activities

* figures in EUR thousand

FINANCE

P&L

	01.01.2020 - 31.03.2020	
	WITHOUT ESOP	WITH ESOP
Revenue from sales	212	212
Research and development expenses	177	267
Gross profit (loss)	35	-55
General and administrative expenses	417	776
Other operating income and operating costs	0	0
Operating profit (loss)	-383	-832
Other financial revenues and expenses	47	47
Profit (loss) before tax	-336	-785
Tax	0	0
Profit (loss) attributable to shareholders of the parent	-336	-785
Profit (loss) of non-controlling interests	0	0
FX differences arising on conversion of foreign affiliates	0	0
Total comprehensive income	-336	-785

* figures in EUR thousand

TEAM

SUPERVISORY BOARD IN POLAND AND MANAGEMENT BOARD IN USA

WIESŁAW ROZŁUCKI

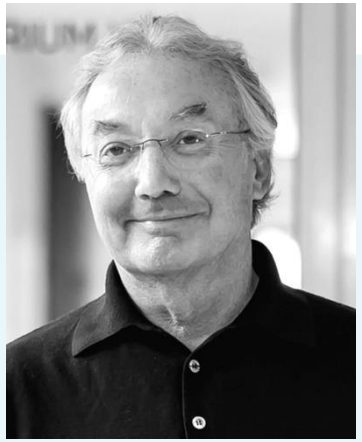
CHAIRMAN OF THE SUPERVISORY BOARD

Co-founder and former president of the Warsaw Stock Exchange

HERBERT WIRTH

SUPERVISORY BOARD MEMBER

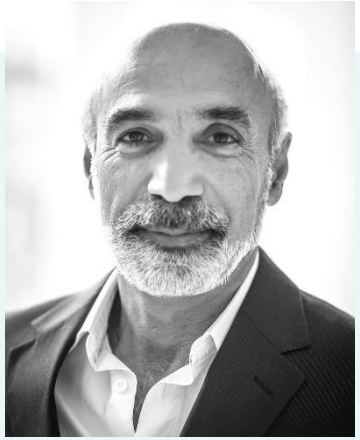
Former President of the Management Board of KGHM S.A. He has vast experience in the area of materials' technologies, international trade and global business administration



HAROLD HUGHES

BOARD MEMBER XTPL INC.

Former CFO of Intel and CEO of Rambus Inc. He has been developing high-tech projects in Silicon Valley for the past 40 years



AMIR NAYYERHABIBI

BOARD MEMBER XTPL INC.

A partner with Benhamou Global Ventures, a VC fund from Silicon Valley which invests in dozens of companies from the digital economy sector

HIROSHI MENJO

BOARD MEMBER XTPL INC.

Co-founder of NSV Wolf Capital, a strategic fund from Silicon Valley. An expert in implementing Japanese entry strategies and forging strategic alliances with Japanese companies

TEAM

Currently 30 people in Poland and the United States

TECHNOLOGY

an interdisciplinary, well-balanced team with advanced **knowledge & experience** in:

- chemistry
- physics
- electronics
- mechanics
- material science
- numerical simulations

8 PhDs in the team

BUSINESS

business leaders & highly skilled professionals who possess **know-how & experience** in:

- product development
- marketing & communication
- implementing innovation
- finance
- B2B sales
- capital market

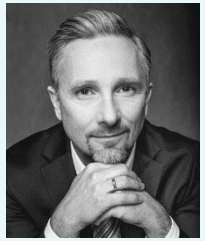
... and proven successes achieved in international markets

Filip Granek

MANAGEMENT BOARD, CEO

Aneta Wiatrowska

TECHNOLOGY



Jacek Olszański

FINANCE

Dariusz Świderek

LICENSING / IP MANAGEMENT

Filip Auksztol

BUSINESS DEVELOPMENT

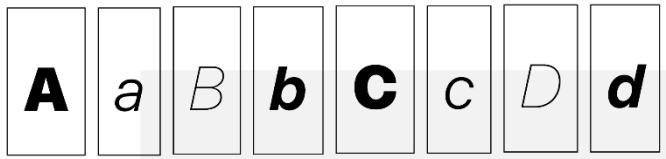
Krzysztof Berezowski

PROJECT MANAGEMENT /PRODUCT DEVELOPMENT

Piotr Kowalczewski

PATENTS

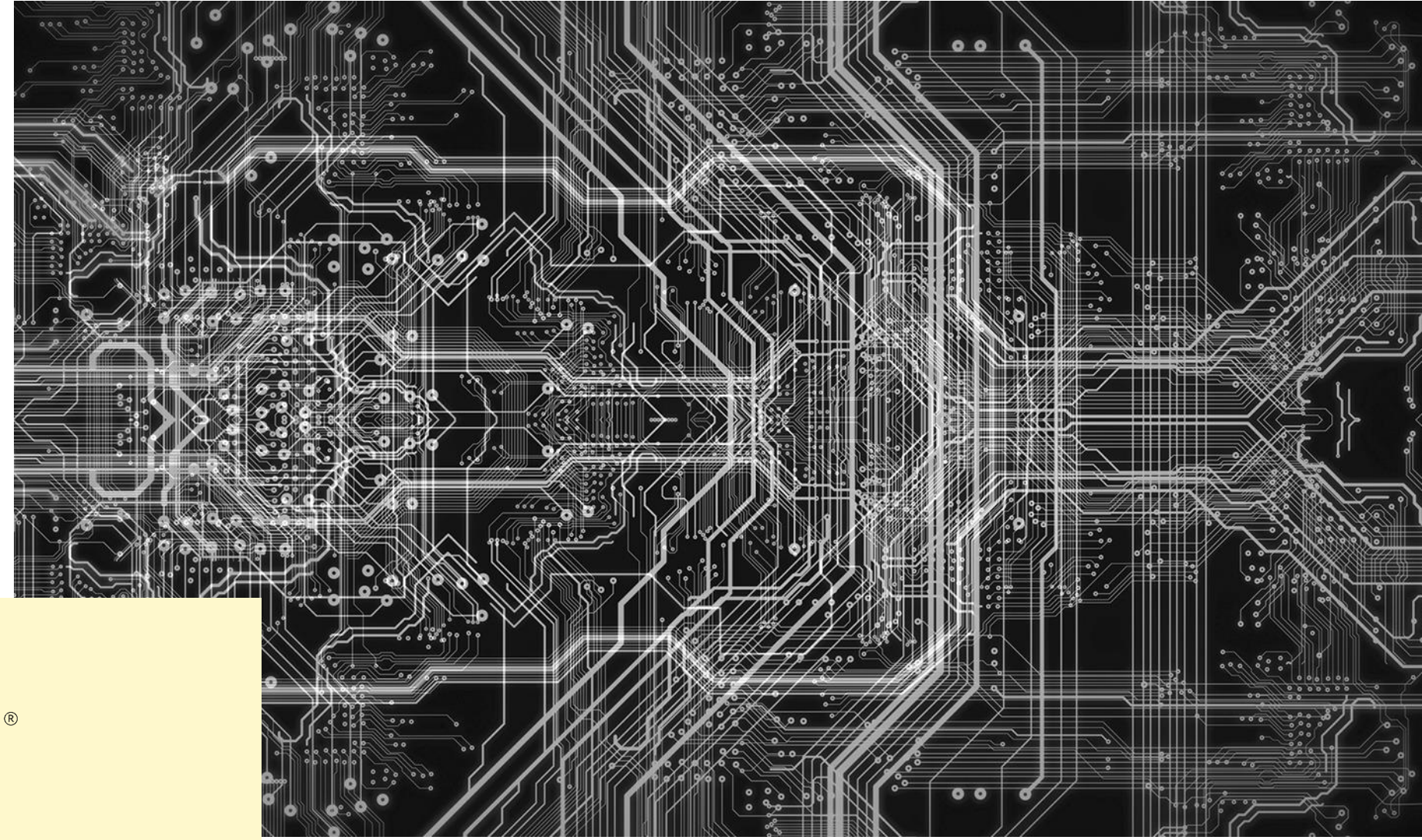
VISION



In the near future, we will print displays, solar cells, biosensors and other advanced elements just as cheaply and quickly as we print newspapers or books today.

This is not just a vision any more.

With XTPL nanoprinting technology, this is a fast approaching reality!



XTPL S.A.
Stabłowicka 147
54-066 Wrocław, Poland
xtpl.com

THANK YOU

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