# **PASSION FOR TECHNOLOGY**



## **PASSION FOR TECHNOLOGY QUIZ**

Some people contribute to the development of modern technologies with their passion. Their inventions and research have had a lasting impact on our world - and will continue to do so in the future. Our TQ cover page shows just a few of them.

Find the right answers to our questions about pioneering inventors and inspiring high-tech entrepreneurs and have a chance of winning one of the following smart prizes:



#### 1. A smart watch

ScanWatch from Withings - one of the most advanced smart watches on the healthcare market with an ECG function and sleep apnoea detection.



#### 2. A smart scale

Body Cardio from Withings – the revolutionary smart scale developed together with cardiologists.



### 3. A smart lamp

Model F by Luke Roberts – with its unique light control technology and embedded artificial intelligence – one of the most intelligent lamps for the home office.

## HERE'S HOW TO SECURE YOUR CHANCE OF WINNING:

- 1. Scan the QR code or visit www.ebv.com/TQPassionHeroes
- 2. Answer the six multiple-choice questions
- 3. Enter your contact details



"When passion meets technology, enormous innovation potential unfolds. Modern semiconductor solutions are the key to turning innovative ideas into successful products."

## PASSION 15 INSPIRING



Technology provides solutions for the challenges of the future.

Passionate people make a difference to the lives of others. This is especially true for techies – people with a passion for technology. You only have to think of Steve Jobs, James Dyson or Tim Berners-Lee, the inventor of the Internet. Of course, we mustn't forget Robert Noyce, father of Silicon Valley and, together with Jack Kilby, inventor of the integrated circuit. Without their contributions, modern electronics would be simply impossible.

We will have even more need of such passionate techies in the future, as solutions to the problems of tomorrow can only be found with their creativity.

Back when the integrated circuit was invented, there were around 2.5 billion people on the planet. Nowadays, there are just shy of 8 billion. By the end of the century, the UN anticipates that the world's population will increase to 11.2 billion. Sustainability is vital if all of these people are to enjoy a life worth living. In 2015, UN member states published 17 goals for sustainable development in the "2030 Agenda": these goals link the principle of sustainability with the fight against poverty and economic, environmental and social development.

Technology in many sectors can help in achieving these goals: for instance, future technologies will reduce the

cost of education, transport and healthcare. At the same time, solutions for strong authentication and identification will help to validate sources of information. With innovative technologies, it will be possible to produce meat, milk and other animal products directly from genetic material without breeding livestock, thereby saving energy, land, water and greenhouse gases. And these are just a few examples – there are still many more applications where technology can provide greater sustainability in the sense of the UN's targets.

Semiconductors play a crucial part in many of these developments. Chips that are getting progressively more powerful (and becoming ever cheaper) are the foundation for future technologies. So it's not surprising that the global sales of semiconductors rose from 149.4 billion US dollars in 1999 to 412.3 billion US dollars in 2019, according to the Semiconductor Industry Association's 2020 Factbook. Here, demand for semiconductors is mainly driven by products that are ultimately bought by end consumers, whether laptops or communication devices, like smartphones. As the capability of semiconductors increases (and their cost decreases), they are making it more affordable to build modern infrastructure. This is causing demand for them to grow exponentially in emerging markets in Asia, Latin America, Eastern Europe and Africa.

EBV shares this passion for new technologies. With our wide range of products and comprehensive expertise, we assist our customers in transforming their passion into real products and solutions.

In this issue, you will get to know many techies and innovative technological solutions. Passion is inspiring – and infectious!

Slobodan Puljarevic President of EBV Elektronik

## CONTENTS

With passion, all obstacles can be overcome in the realisation of innovative products.

#### 3 | MARKET OVERVIEW

Passion is inspiring

#### 6 | DEEP IMPACT

Interview with Dr Simon Haddadin, CEO of Franka Emika

## 10 | PROGRESS IN MANY SENSES

Facts and figures on technological development



78 | GLOSSARY

80 | PREVIOUS ISSUES

81 | ORDER FORM

82 | INFO POINT, IMPRINT

83 | MEET THE TEAM



## TECHNOLOGIES

## 14 | SPEED UP PRODUCT DEVELOPMENT

With SoC, SiP and modules

### 16 | TRANSFORMING EN-ERGY MORE EFFICIENTLY

Trending: wide-band-gap semiconductors

#### 18 | THE NEW ARCHI-TECTURE OF DATA PROCESSING

Processors for the data streams of the future

## 20 | RELIABLE DATA PROTECTION

Cybersecurity with hardware and software

#### 22 | COMMUNICATION MADE TO MEASURE

Data transmission technologies

#### 25 | A TRANSFORMA-TIONAL INVENTOR

Portrait of Maryam Rofougaran Semiconductor technology is the key to innovation and digitalisation.

#### 26 | MINING FOR DATA

Trends in sensor technology

## 28 | THE EVOLUTION OF LEDS

New technologies, new applications

30 | GUEST EDITORIAL STMICROELECTRONICS

32 | GUEST EDITORIAL XILINX

## **APPLICATIONS**

## 36 | TECHNOLOGY FOR A MORE "HUMANE" WORLD

How innovations improve our lives

## 38 | A NEW ERA OF URBAN MOBILITY

From micromobile to air taxi

## 41 | OBSESSED WITH CARS

Portrait of Mate Rimac

#### 42 | MORE SUSTAINABLE AGRICULTURE

How food will be produced in the future

New technologies can fundamentally change the economy and society.

PAGE 38

**INNOVATIVE** 

**CONCEPTS** 

**FOR LOCAL** 

**TRANSPORT** 

#### 44 | BETTER HEALTH FOR ALL

Digitalisation in healthcare

#### 46 | NEW BUSINESS MODELS IN INDUSTRY

Paying for the benefits

## 48 | BETTER LIVING IN SMART CITIES

Technologies shape urbanisation

#### 50 | ALTERNATIVE ENERGY GENERATION

Focus on climate neutrality

#### 52 | SMART BUILDINGS

More comfort and sustainability

## 54 | GUEST EDITORIAL MICRON

56 | GUEST EDITORIAL ON SEMICONDUCTOR

## ELECTRONICS INSIDE

#### 60 | THE DEMOCRATISA-TION OF TECHNOLOGY

PAGE 69

**ALL-IN-ONE** 

CONNECTIVIT

Interview with Antonio Fernandez and Frank-Steffen Russ from EBV

## 63 | PIONEER OF THE ALL-ELECTRIC SOCIETY

Portrait of Johann W. Kolar

64 | GUEST EDITORIAL RENESAS

#### 66 | PRODUCT PRESENTATION

Solutions from Broadcom and ON Semiconductor

#### 69 | THE FAST AND SECURE WAY TO THE IOT

All-in-one communication module from EBV



## VISIONS AND VIEWS

## 72 | THE ADVICE OF PIONEERS

What technology pioneers said

#### 74 | FROM NICE-TO-HAVE TO GAME-CHANGER

Technology start-ups

77 | THE SOCIAL ENTREPRENEUR Portrait of Juliana Rotich

4 CONTENTS TQ | PASSION FOR TECHNOLOGY TQ | PASSION FOR TECHNOLOGY CONTENTS 5