

Microchips for climate protection and progress: School students develop solar trackers

- **BMBF and VDE award prizes to INVENT a CHIP winners**
- **Award on the occasion of the Summit MICROELECTRONICS FOR FUTURE in Berlin**
- **Young talents present ideas for the future**
- **Practical promotion of young talents in the MINT sector**

(Berlin/Frankfurt am Main, 8.11.2022) In their search for young talents who enjoy science, mathematics and technology, the Federal Ministry of Education and Research (BMBF) and the technology organization VDE rely on the practice-oriented, nationwide INVENT a CHIP competition for school students. They have now chosen the winners at the Futurium in Berlin on the occasion of the MICROELECTRONICS FOR FUTURE Summit organized by VDE and ZVEI. The winners developed a chip to control a solar tracker and set their own creative priorities.

Mikhail Soldatov (16) from the Herder-Gymnasium in Berlin won 1st place with a prize money of 2,000 euros, Jonas Mayer (18) from the Gymnasium Überlingen came in 2nd place with a prize money of 1,500 euros. Prize money of 1,000 euros went to the third-place winner, Mattis Bergmann (16) from Goethegymnasium in Hildesheim, as well as to Felix Kröhnert (17) from Friedrich-Schiller-Gymnasium in Marbach, who took fourth place.

Microchips are little all-rounders

State-of-the-art microchips and their design are indispensable for technological progress. Whether it's the energy turnaround with photovoltaic and wind systems, electromobility, smartphones or e-bikes, there are hardly any innovations without these little all-rounders. Microelectronics is regarded as the driving force behind the technological lead in Germany and

Europe. Young talent is therefore particularly in demand. In order to reduce one-sided dependencies on supply chains, the company's own production capacities are to be increased in the future.

Around 1,000 students from general and vocational schools in grades 9 to 13 from all over Germany took part in the current 21st round of the INVENT a CHIP competition. In addition to a quiz on microelectronics, the IaC Challenge was on the agenda. Practical tasks from the field of engineering and complex microelectronics topics characterize this challenge. For this, the 25 best participants started their own chip design for the first time in a four-day workshop. Ansgar Hinz, Chairman of the Board of the VDE: "The ambitious participants were given their own FPGA board, as used by professional chip designers. Through the experience in the competition with tasks 'from practice, for practice', we want to inspire young people for professions in the natural sciences and technical fields. It's about the Next Generation and qualified specialists, in other words, nothing less than our technological future."

Solar tracker optimizes energy yield

The IaC camp was led by professionals from Leibniz Universität Hannover's Institute for Microelectronic Systems. They taught the young people the details of chip design, such as the hardware description language VHDL or the commissioning and function of the FPGA board. All of them then had the task of implementing a chip design to control a solar tracker themselves. In the run-up to the Summit MICROELECTRONICS FOR FUTURE in Berlin, the ten winners had the opportunity to present their results to experts from industry, science and politics.

"My solar tracker can be controlled via the ten built-in switches and also via Bluetooth. In addition to following the sun, the solar tracker can in addition take into account the distance to the light source in order to optimize the energy yield even more. Via a VGA interface, the chip can visualize all data on a display. The chip can control a mirror that automatically reflects the sun onto the solar tracker," says first-place winner Mikhail Soldatov, describing his project. He is excited that many problems can be solved in fractions of a second with the help of technology. "I was especially proud of moments when something new worked," he says.

The fifth to tenth places in the "Invent a Chip Challenge" each receive 500 euros in prize money, and all winners receive contacts with industry and universities, a visit to a microchip factory in Dresden, and the opportunity to complete an internship lasting several days at Bosch in Reutlingen.

"Invent a Chip" is supported by numerous sponsors in the current round of the competition: Bosch, Cologne Chip, Globalfoundries, Infineon, Siemens, DKE.

The winners of "Invent a Chip" 2022 at a glance

Mikhail Soldatov (16) from Herder-Gymnasium in Berlin, 1st place (2,000 euros)

Jonas Mayer (18) from Überlingen High School, 2nd place (1,500 euros)

Mattis Bergmann (16) from Goethegymnasium in Hildesheim, 3rd place (1,000 euros)

Felix Kröhnert (17) from Friedrich Schiller High School in Marbach, 4th place (1,000 euros)

Johannes Schmidt (19) from Theodor Litt School in Giessen, 5th place (500 euros)

Tomo Clement (18) from Johannes Kepler High School in Leonberg, 6th place (500 euros)

Jonas Paul Pohlmann (17) from Humboldt-Gymnasium in Potsdam, 7th place (500 euros)

Fabienne Dohmen (17) from St. Ursula-Gymnasium in Villingen, 8th place (500 euros)

Jannis Fricke (17) from Rahlstedt High School in Hamburg, 9th place (500 euros)

Philipp Semmel (18) from Nidda High School, 10th place (500 euros)

Further information on the student competition is available at www.invent-a-chip.de

About VDE:

VDE, one of the largest technology organizations in Europe, has been regarded as a synonym for innovation and technological progress for more than 125 years. VDE is the only organization in the world that combines science, standardization, testing, certification, and application consulting under one umbrella. The VDE mark has been synonymous with the highest safety standards and consumer protection for more than 100 years.

Our passion is the advancement of technology, the next generation of engineers and technologists, and lifelong learning and career development "on the job". Within the VDE network more than 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts, and around 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. Shaping the e-dialistic future.

The VDE (VDE Association for Electrical, Electronic & Information Technologies) is headquartered in Frankfurt am Main. For more information, visit www.vde.com

Press contact: Vanessa Rothe, Phone +49 170 7645316, presse@vde.com