

PRESS RELEASE

Eindhoven, 25 October 2018

High-quality nominations for the 2018 Wim van der Hoek Award

For years the high-tech industry has been in dire need of technical talent. The good news is that the influx of technical students at the higher education level is increasing and that the outflux is of high quality. This last observation is once again evidenced by the nominations for the 2018 Wim van der Hoek Award. A total of five nominations (including one duo nomination) were received from universities of technology and universities of applied sciences in the Netherlands and Belgium by the panel of judges. The award will be presented on 15 November for the thirteenth time, under the auspices of DSPE (Dutch Society for Precision Engineering), at the Precision Fair.

The second day of the 2018 Precision Fair in Veldhoven, the Netherlands, Thursday 15 November, will feature the presentation of the Wim van der Hoek Award, at 16.15 h. This award (also known as the Constructors Award) was introduced in 2006 to mark the 80th birthday of the Dutch doyen of design engineering principles, Wim van der Hoek. The objective was, and still is, to promote and stimulate the discipline of mechanical engineering. This award includes a certificate, a trophy produced by the Leiden Instrument Makers School as well as a sum of money (sponsored by HTSC; the High Tech Systems Center at Eindhoven University of Technology).

Best graduation project

The Constructors Award is presented every year to the person with the best graduation project in the field of design in mechanical engineering at the universities of technology and universities of applied sciences. Criteria for the assessment of the graduation theses include quality of the design, substantiation and innovativeness, as well as the suitability for use as teaching materials. The jury, under the presidency of DSPE board member Jos Gusing (MaromeTech), received five nominations (for a total of six persons), submitted by the graduation supervisor/professor of each student concerned. A total of two universities of applied sciences (UAS) and two universities nominated candidates: AVANS Hogeschool 's-Hertogenbosch, UAS Utrecht, KU Leuven (Belgium) and TU Eindhoven.

Candidates



Bart Cornelissen
(UAS AVANS)



Nick Toonen
(UAS AVANS)



Jens de Goeij
(UAS Utrecht)



Bert Van
Raemdonck

COO reduction by controlling leakage issue

“Students graduating in duo is customary at AVANS Hogeschool 's-Hertogenbosch. The report of Bart & Nick concerns modifications to a food processing machine. The existing design exhibited leakage during cleaning. After systematically excluding potential causes, and investigating possible problems, a new design was made that is likely to produce a significant improvement. Thanks to the structured approach, the commissioning company has so much confidence in the design that it decided to actually build the modified machine and test and monitor it under production conditions. Bart and Nick are serious go-getters with a good working attitude. Diving into a difficult problem they have shown inventiveness and focus and used a structured solution method, which has led to a well-founded design, taking into account the existing construction in the field. In doing so, they not only considered the technical aspects but also took a commercial view (cost of ownership reduction).”

Het ontwerp van de verticaal translerende beweging van een wafer handler transport robot

“Jens had the very complex challenge of redesigning the vertical translating movement of a wafer-handler transport robot, because it was overdimensioned and the reliability left something to be desired. With his unique combination of practical experience and physical insights, Jens searched for the right solution in a very structured manner. In doing so, he took into account the fact that the robot arm had to fit into a very small space, had to be able to position itself with a high degree of accuracy and at a low contamination level. Jens considered various construction principles and thoroughly tested his design. As a result of the tests, various adjustments have been made and this has led to a well-founded concept. Jens is good at receiving and processing feedback and is willing to communicate in an open and direct way.”

Design and tuning of an elastic inflatable actuator with a non-linear response

“Bert has shifted the scientific boundaries concerning inflatable flexible actuators. In essence, he developed a new type of balloon actuator with unseen nonlinear properties, which are not only scientifically interesting, but also extremely useful for applications in medical surgery. Whereas researchers and engineers often try to avoid nonlinear behaviour, Bert has shown that these

(KU Leuven)

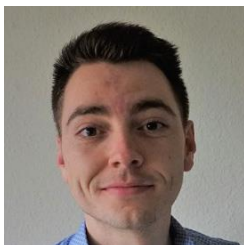
characteristics are the key to hardware intelligence in soft robotics, which until now seemed far-off. With a thorough analysis, Bert managed to capture the foundations of these nonlinearities, which he later verified with tests on prototype actuators. The combination of an excellent analytical capacity with an excellent practical insight is an extremely desirable combination that makes Bert an engineer who has already made his mark on science and technology.”



Roy Jacobs
(TU Eindhoven)

Design and analysis of a passive vibration isolation system using negative stiffness

“Roy has come up with a new approach to reduce the pneumatic stiffness in air mounts, viz. by integrating an additional negative-stiffness mechanism. Based on first principles in literature, and after studying magnetic and pneumatic alternatives, he designed and analysed an adjustable non-linear compliant mechanism, which allows for accurately tuning the required isolation frequency independent of the load distribution in the optical system. The concept design is patent pending. Roy has demonstrated very good engineering skills, not only in utilising and further developing design principles, but also bridging towards other domains. He works in an independent, systematic manner, both in an academic and industrial environment.”



Martin Kristelijn
(TU Eindhoven)

Design of a motion compensation mechanism for offshore load transfer

“With his proposed design for a motion compensation and load transfer mechanism, Martin has demonstrated his broad talent in mechanical engineering, both in kinematics and structural design and analyses at the component level, including cost assessment. His novel concept for offshore load transfer that is based on a Roberts straight-guide mechanism, is modular and rather compact, and was designed for minimal parasitic platform motion and high stability. Martin possesses good analytical and communication skills and works very independently.”

Note for the press (not for publication)

Invitation to the press:

15 November, 16.15 h announcement of the winner of the Wim van der Hoek Award 2018.

Location: central information desk / bar at the Precision Fair.

Send an email to info@dspe.nl and your badge will be ready at the registration desk.

For more information please contact:

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