

PRESS RELEASE

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July 2018 || Page 1 | 2

Cleanliness: a leading export

Collaboration between Fraunhofer IPA and VDE Korea

The robot that engineers at Fraunhofer IPA are currently examining in their research cleanroom has traveled a long way: a few days ago, it was sent by air freight from Korea. It is the first industrial robot that is “Made in Korea” and is being tested for cleanroom compatibility in Stuttgart. The “Fraunhofer TESTED DEVICE®” seal is in demand in this ambitious, high-tech country. Fraunhofer IPA has already been offering cleanroom compatibility tests in collaboration with VDE Korea for ten years. This January, the collaborative work with VDE was formalized with a cooperation agreement for the next five years.

Frank Bürger, who heads up the “Cleanroom-Compatible Equipment and Components” Group at Fraunhofer IPA explains: “As an ambitious, high-tech nation, Korea is a very important partner for us.” Frank, who has a PhD in Engineering, and his team are examining whether the six-axis robot would be suitable for use in cleanrooms where products such as microchips or pharmaceutical substances are manufactured.

These require the utmost cleanliness: contamination from dust particles, microorganisms, or aggressive chemicals on machine surfaces or in the air could negatively affect the quality during production. As such, all equipment components must satisfy the highest cleanliness standards.

At the Fraunhofer Institute in Stuttgart, researchers can conduct over 60 different tests. For example, they test how many particles are released in the air or settle on surfaces when wiped or where lubricants are used. All tests are conducted in accordance with ISO 14644 standards or other regulations, (VDI [Association of German Engineers], SEMI, VDMA, etc.). Afterwards, the “Fraunhofer TESTED DEVICE®” seal confirms cleanroom compatibility.

Fraunhofer IPA has been testing parts and components from the Far East for years now on behalf of VDE Korea. Frank adds: “There is high demand in Korea since leading electronics manufacturers there such as Samsung and LG produce microchips, displays and optical parts in cleanrooms and they require certification of equipment and devices from their suppliers.”

IN COOPERATION WITH

VDE GLOBAL SERVICES

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The tests in Stuttgart provide internationally acknowledged results and assessments for this. The researchers also support clients in optimizing cleanroom compatibility if this is desired. For this, they draw on materials databases, scientific/mathematical methods, simulation techniques as well as the years of experience that the Fraunhofer IPA employees have in the field of cleanroom production.

PRESS RELEASE

July 2018 || Page 2 | 2

Udo Gommel, Head of the “Ultraclean Technology and Micromanufacturing” Department at Fraunhofer IPA, explains: “Our collaboration with VDE Korea, who are connected to many Korean high-tech companies, has proved successful in the past. With the new cooperation agreement, we hope to further strengthen and expand this collaboration.” He believes that the outcome is a clear win-win situation: “We have the testing technology, while VDE Korea, who market the tests, have the contact with clients.” Over the next five years, the collaborative partners aim to acquire contracts worth over a million euros.



Source: VDE Korea

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With nearly 1000 employees, the **Fraunhofer Institute for Manufacturing Engineering and Automation IPA**, Fraunhofer IPA, is one of the largest institutes in the Fraunhofer-Gesellschaft. It has an annual budget of approximately 63 million euros, of which more than one third derives from industrial projects. The institute's research focus is on organizational and technological aspects of production. We develop, test and implement not only components, devices and methods, but also entire machines and manufacturing plants. Our 14 departments are coordinated via six business units, which together conduct interdisciplinary work with the following industries: automotive, machinery and equipment industry, electronics and microsystems, energy, medical engineering and biotechnology as well as process industry. The research activities of Fraunhofer IPA aim at the economic production of sustainable and personalized products. We regard cyber-physical production processes as topics of the future.