

Press release

Empa and G-ray join forces to develop a revolutionary additive manufacturing platform

G-ray's latanium™ detectors to provide real-time quality control

Hauterive, Neuchâtel, 22 May 2019 – **G-ray's latanium™ X-ray detectors will provide the central core element to support the real-time monitoring of a revolutionary additive manufacturing printer under development at Empa. "Empa's novel 3-D printing system will allow for real-time monitoring of the production process", says Patrick Hoffmann, Head of laboratory for Advanced Materials Processing.**

G-ray Nanobonding and CSEM have achieved a major milestone in packaging the latanium™ technology to deliver disruptive industrial non-destructive testing solutions: the latanium™ Evaluation Kit. Centered on photon-counting X-ray imaging, these unique solutions are set to improve the quality of the images obtained to significantly improve industrial products such as aeronautics engines and 3-D printed products, among others.

G-ray, a Neuchâtel start-up, is currently developing ultra-high performance detectors dedicated to industrial non-destructive testing solutions. "These detectors are being developed in partnership with CSEM (CH) and BRUCO electronics (NL), based on G-ray's revolutionary latanium™ technology. The latanium™ Evaluation Kits are available for qualification purposes as of Q1-2019 from G-ray. Additive manufacturing represents a huge potential for our latanium™ detectors", says Philippe Le Corre, CEO of G-ray.

Researchers at Empa, the Swiss Federal Laboratories for Materials Science and Technology, are developing novel materials to be used in industrial processes in the future as well as the respective production technologies. Empa's Laboratory for Advanced Materials Processing is currently carrying out research on real-time monitoring and data analysis for future closed loop process control of additive manufacturing printing processes. "Adding rapid, high-resolution in-situ X-ray detection will be an extraordinary additional tool for pursuing our work", says Patrik Hoffmann, the head of the laboratory. The G-ray detectors might become an essential real-time process detector installed in additive manufacturing machines of the future, especially for electron beam 3-D printers and welding systems.

"The outcome of this project has huge potential in multiple industries", says Philippe Laufer, CEO, CATIA, Dassault Systèmes. "Our customers are adopting what we call 'V+R' – virtual plus real – additive manufacturing processes at the speed of light. Non-destructive quality control, and its feedback to the virtual design, engineering and process planning stages are eagerly awaited, especially by the aerospace and defense, and energy and materials industries."

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About G-ray Nanobonding

G-ray Nanobonding belongs to G-ray Industries SA, a company founded in 2015 in Neuchâtel. G-ray Industries SA is a developing company that has filed several revolutionary patent applications in the fields of X-ray imaging and new semiconductor assembly techniques. The company now masters key skills in the fabrication of monolithic detectors with integrated high-resolution CMOS. These innovations apply to a wide range of industries such as automotive, micro-electromechanical systems (MEMS), high energy and particle physics, aerospace, defense and security. Further information is available at www.g-ray.ch

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About Empa

As an interdisciplinary research institute of the ETH Domain, Empa, the Swiss Federal Laboratories for Materials Science and Technology, conducts cutting-edge materials and technology research. Empa's R&D activities focus on meeting the requirements of industry and the needs of society, and thus link applications-oriented research to the practical implementation of new ideas. As a result, Empa is capable of providing its partners with customized solutions that enhance their innovative edge and international competitiveness. Further information is available at www.empa.ch

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