

PRESS RELEASE

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Fraunhofer presents computed tomography scan of major T. rex skull find

Fürth, June 19, 2015: On June 19 the Development Center for X-Ray Technology, part of the Fraunhofer Institute for Integrated Circuits IIS, presented exclusive computer tomography images of a Tyrannosaurus rex, which the Naturalis Biodiversity Center in the Netherlands describes as one of the best preserved T. rex finds of all time.

In 2013, researchers from the Naturalis Biodiversity Center in Leiden, Netherlands made a remarkable discovery in Montana in the United States: one of the best preserved Tyrannosaurus rex skeletons ever found. Experts date the remains of the female dinosaur to 66.4 million years. Alone the skull of the magnificent specimen weighs an incredible 500 kilograms.

Every single bone of this find offers new knowledge about the world's most famous dinosaur and its habitat. "This discovery will have an enormous impact on dinosaur research for decades to come," says Edwin van Huis, head of the Naturalis Biodiversity Center, with confidence.

To get a glimpse of the internal structures of the remains without damaging the fragile skeleton, researchers are relying on Fraunhofer know-how. Utilizing one-of-a-kind XXL computed tomography technology, the Fraunhofer Development Center for X-Ray Technology in Fürth, Germany is capable of generating high-resolution CD data, in this case from images of the T.rex. "We're extremely pleased that the Naturalis Biodiversity Center has placed their trust in us. With its unique CT technology, Fraunhofer's Development Center for X-Ray Technology can make a significant contribution to help shape dinosaur research," says Prof. Randolph Hanke, head of the center.

The CT images offer researchers a world of opportunities. The precise, cross-sectional x-rays of the skull benefit the conservation and preservation of the remains. Surprises, such hidden fractures, can be reliably detected in advance and then taken into consideration during the preparation. Furthermore, using the x-ray data and a 3D printing process, a true-to-original copy of the skeleton can be produced. "Concealed areas are especially interesting for us. With this method we are in a position to reconstruct the structure of the skeleton, especially since the skull is in such excellent condition in this case. I'm extremely excited about the mold of the inside of the skull. We can show

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what the brain looked like without having to open up the irrecoverable skull," says Dr. Anne Schulp, paleontologist and dinosaur researcher at the Naturalis Biodiversity Center.

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Fraunhofer Development Center for X-Ray Technology

The Fraunhofer Development Center for X-Ray Technology develops non-destructive inspection methods that allow the examination of objects with respect to flaws or quality defects without impairing their functionality. The specialist departments offer individual solutions from optical 3D measuring systems to industrial X-ray cameras as well as turnkey X-ray systems for industrial production levels. Moreover they offer structure and process analyses for research applications. The experts accompany the customer from the first idea through feasibility studies up to the marketable product.

Naturalis Biodiversity Center

The Naturalis Biodiversity Center is an internationally-recognized research facility that aims to describe, understand and conduct research in the field of biodiversity for the good of man and the future of our planet through the following activities:

- developing a collection of biological and geological diversity and making it available to more and more people
- carrying out scientific research that contributes to worldwide efforts aimed at restoring biodiversity and understanding interaction between the species
- using the collection to explain the history of nature in its historical and cultural context in a way that sparks the fantasies of all age groups and deepens their respect for nature

IN COOPERATION WITH



The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 66 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of nearly 24,000, who work with an annual research budget totaling more than 2 billion euros.

The **Fraunhofer Institute for Integrated Circuits IIS** is one of the world's leading application-oriented research institutions for microelectronic and IT system solutions and services. It ranks first among all Fraunhofer Institutes. With the creation of mp3 and the co-development of AAC, Fraunhofer IIS has reached worldwide recognition. In close cooperation with partners and clients the Institute provides research and development services in the following areas: Audio & Multimedia, Imaging Systems, Energy Management, IC Design and Design Automation, Communication Systems, Positioning, Medical Technology, Sensor Systems, Safety and Security Technology, Supply Chain Management and Non-destructive Testing. About 880 employees conduct contract research for industry, the service sector and public authorities. Founded in 1985 in Erlangen, Fraunhofer IIS has now 13 locations in 10 cities: Erlangen (headquarters), Nuremberg, Fürth, Dresden, further in Bamberg, Waischenfeld, Coburg, Würzburg, Ilmenau and Deggendorf. The budget of 120 million euros is mainly financed by projects. 23 percent of the budget is subsidized by federal and state funds.

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