



source: designer Beata Nikolajczyk-Miniak

The 3D scanner in a unique design for creating an anatomical baby bottle

Today, the accessory industry for newborns and infants is a dynamically developing business sector. Manufacturers compete to invent increasingly sophisticated and creative products designed to help young parents in caring for their children. Among the many colorful and often unnecessary products, there are exceptional products that are designed to really help and support parents to create normality where it's not always possible.

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A bottle of the future

One such unique product is the personalized “New Eve” milk dispenser. Created by designer Beata Nikolajczyk - Miniak, it has been awarded many times in various prestigious competitions. The design of this innovative baby milk bottle is the shape of a female breast. It's designed this way to reproduce the experience of natural feeding in situations where it is not always possible. It was created on the basis of research supported by the financial resources of the Ministry of Science and Higher Education.



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LED light technology and measures a field of 300x200 mm in only 0.2 seconds. Because it's using light, the measurement is completely safe for the human body.

The process of creating a bottle started with a questionnaire dedicated to mothers feeding naturally, distributed on social networks and made available in various charitable institutions. The study involved 100 women whose breasts were sized on the basis of collected data from two angles- front view and a cross-section view. The irregular shape of the female breast was able to be reproduced using the most modern 3D scanning technology with in the new SMARTTECH3D scanner. The scanner operates with structural white

3D scanning itself involves obtaining information about the shape, and geometry of an object and creating its virtual digital copy. As a result of scanning, a cloud of points is obtained, meaning a set of reflecting surfaces of the scanned object. They are described by three X, Y, Z coordinates and can also store object color information. Then a triangle mesh is created from these points. Thanks to this, the shape of the object is reflected in detail using a set of several million small triangles.

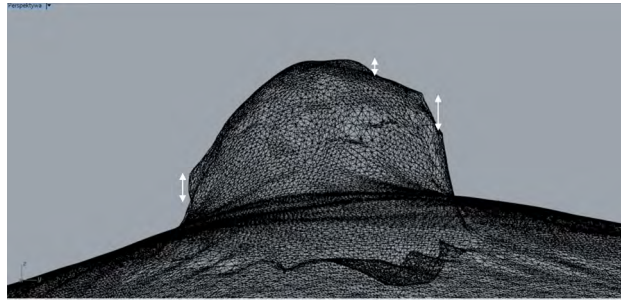
Gathering data about the shape of the nipple was done using only the 3D scanner, which was able to take the geometric dimensions: width, length, and height of the nipple. Using SMARTTECH3Dmeasure, a detailed analysis was able to generate precise calculations of the examined surface including indentations, inequalities occurring on the nipple surface and it was also possible to see an enlarged view of the nipple-areola surface.



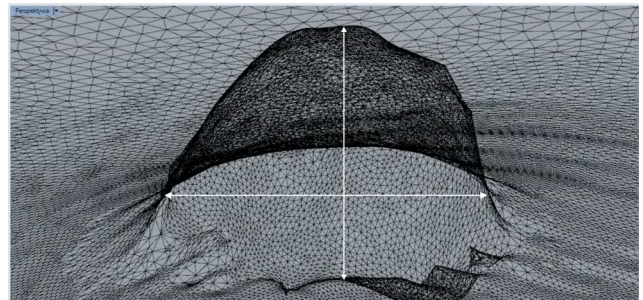
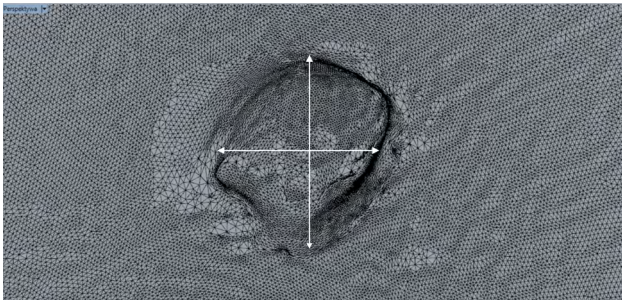
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Warmth, closeness, and security enclosed in the shape of a mother's breast.

Averaging the results and analyzing the relationship between the proportions of individual parts of the breast collected from all the tests on the nipple measurements contributed to the formation of the bottle in the shape closest to the natural breast. Observation of the nipple itself helped to design the shape and structure of the element responsible for the outflow of milk.



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This research was how the revolutionary „New Eve” milk dispenser was created, which has both the anatomical and sensory features of a mother's breast. Apart from being a similar shape, „New Eve” mimics the color, feeling, and even temperature of a natural breast, by integrating a heating element. In the construction of the dispenser, a material of variable thickness was used, which is thinnest and most flexible near the nipple, but thicker at the base which also helps to dissipate heat. The feeling of the milk temperature in the dispenser is also directly related to its shape, which allows the newborn to comfortably cuddle to the larger surface of the „warm breast”. The „New Eve” milk dispenser is a revolutionary project in the baby products industry and will certainly find a wide range of interested recipients. It would not have been created without the use of 3D scanners, which helped most accurately reproduce the ideal shape of a woman's breast.

PRESS RELEASE



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The bottle design itself has already been awarded many times at both the national and international competitions. This project, among others, was a finalist in the international contest make me! organized by Łódź Design Festival- one of the most important international competitions for designers of the young generation. In addition, the bottle was noticed by the world-class jury in the Red dot competition and qualified for the finals.

Beata Nikolajczyk-Miniak

A graduate of the Academy of Fine Arts in Łódź. Since 2012, she has been an assistant at the Faculty of Design and Interior Architecture at her alma mater. She is an enthusiast of sustainable design and activities promoting science, especially research. She is also a winner of many awards, regularly co-creates and participates in various types of open-air workshops and artistic events. In reality, she uses the possibilities that modern technological development offers, and also appreciates the functionality and aesthetics of the product.

SMARTTECH Ltd

SMARTTECH was established in year 2000 by the group of doctors and researcher from Warsaw University of Technology under the leadership of Prof, dr. hab. Mrs. Malgorzata Kujawska who also was the inventor of the technology. The Company from the very beginning was focused on 3D data acquisition, using optical method using fringes projection systems. Since almost 20 years we have been upgrading the measurement method by redesigning and implementing the latest optical and projection solutions, to our measurement algorithm, providing the most accurate and reliable results for the most demanding customers of total 300 number of implementations all over the world.

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