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Innovative Form Design - A Formal Aesthetics Design Approach for Creative Form Generation

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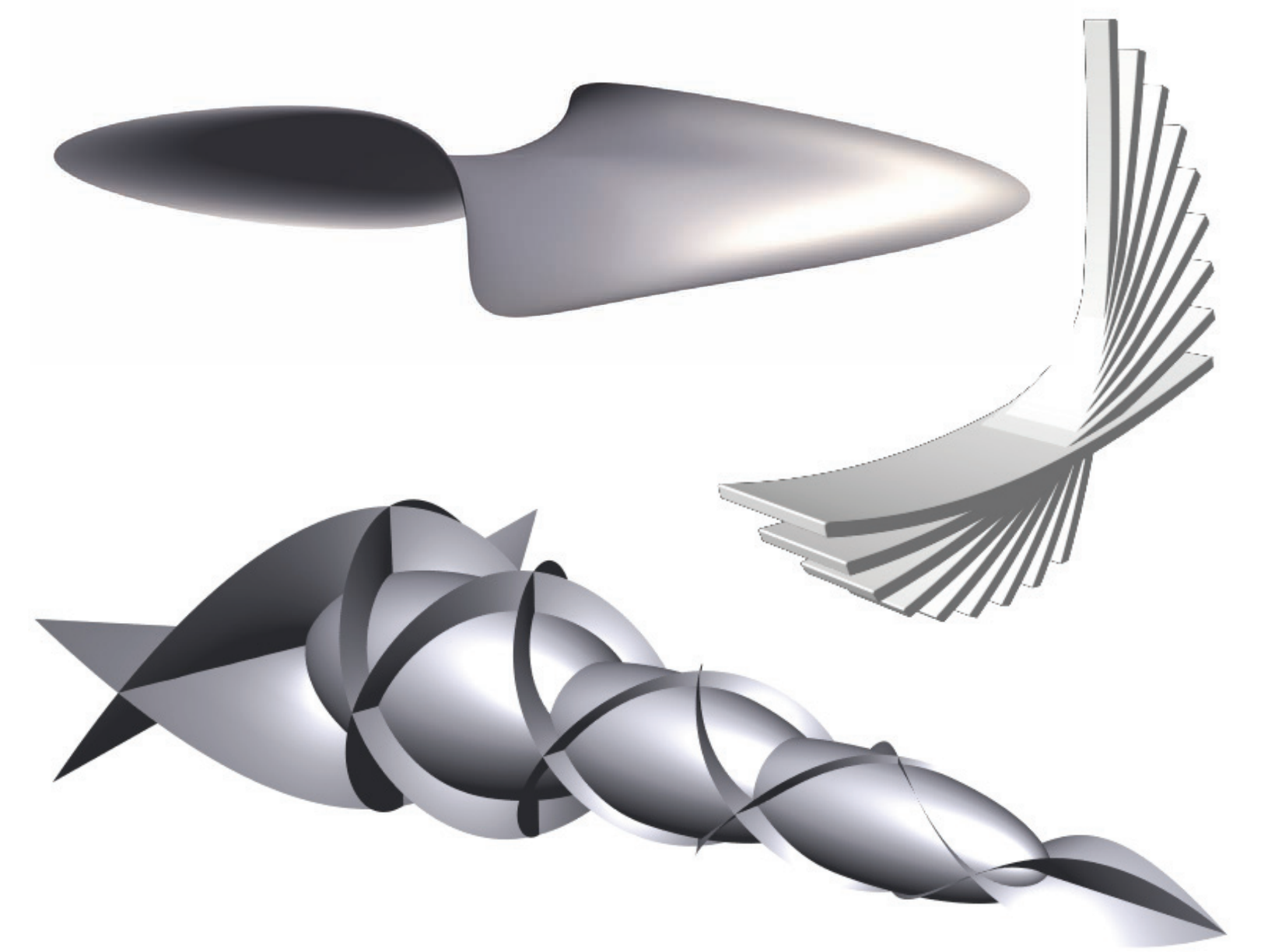
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Introduction

An intrinsic challenge in user-centered design approach is that it educes design solutions that are, to some extent, already known by the user, since familiarity factors are favoured. In our research, we turn the established UCD process around and propose an approach for exploring and creating novel product form based on formal aesthetics, unconstrained by convention, function, use and context.



Innovative Form Design

Formal Aesthetics Design Approach for creative form generation



Procedure

The Formal Aesthetics Design Approach applied in the Advanced Form Design courses consisted of two parts. While the given design goal was that the result had to be innovative in terms of form expression, the groups had a free choice of topic. The first part of the project was divergent, following a structured five-step method:

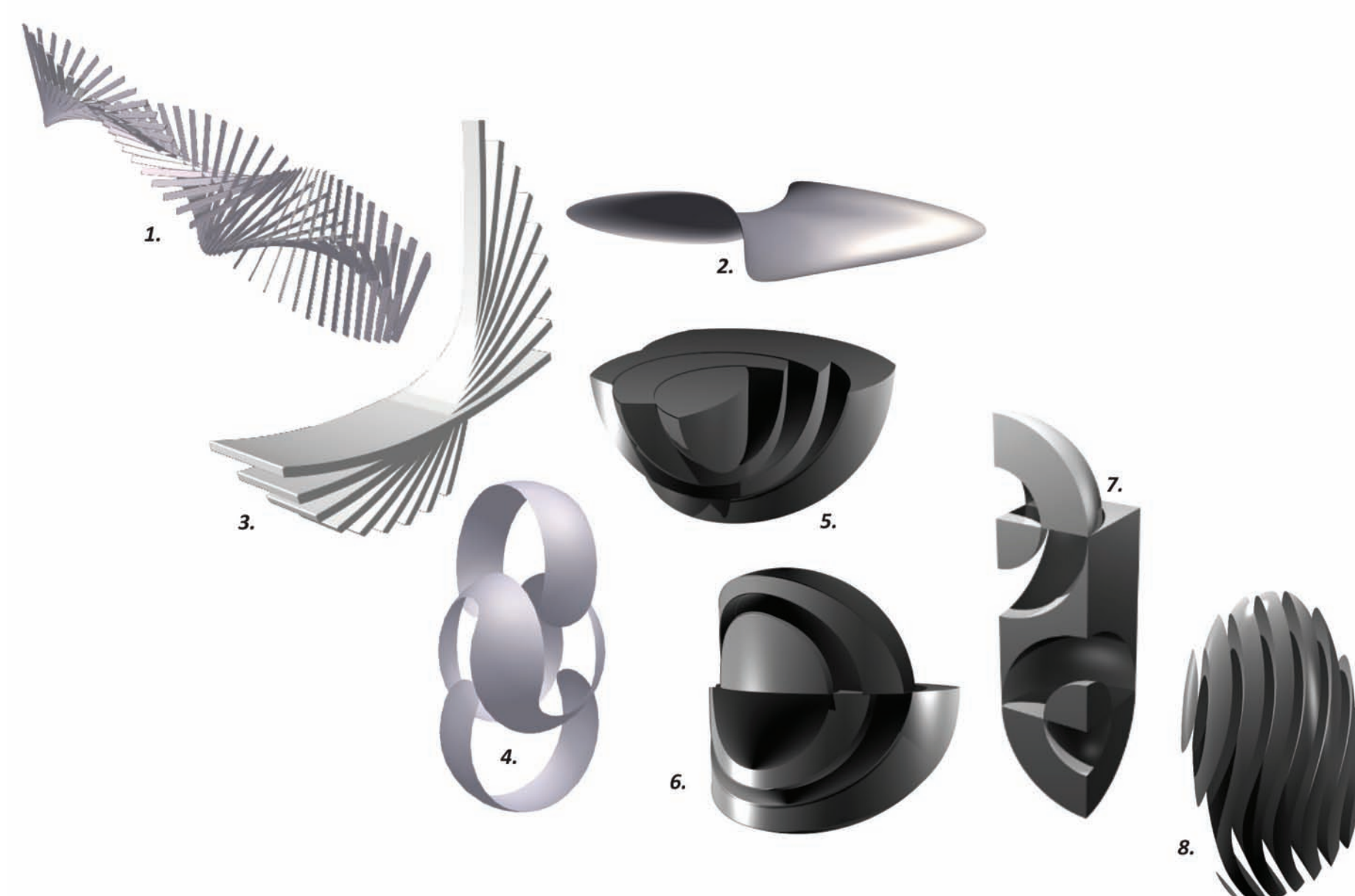
1. Exploring possible uses of basic design elements; bars, surfaces and volumes to accumulate a collection of forms, which could stimulate formal imaginary solutions later in the process.
2. Categorizing form applications into main groups according to types of application.
3. Interpreting selected form types with respect to associative and characterizing form drivers, verbally describing the fundamental transformation for a form to emerge.
4. Generating a great variety of abstract, novel forms and geometries originating from basic design elements with the help of different tools.
5. Structuring the generated new form variety in matrices according to solution types.

In the second part of the project, the groups had to converge and choose the most interesting and appealing shapes. Subsequently, the abstract form was contextualised, transformed and applied to a scenario of use in order to develop the form into a product concept with a certain purpose, function and performance. The results were to be presented as CAD renderings and/or three-dimensional physical presentation models. In total, 35 projects with extensive variety of conceptual form design solutions were carried out. This poster presents results from the first part of an exemplary project to illustrate a typical application of FAEDA.

Research Design

The Formal Aesthetics Design Approach (denoted FAEDA) was explored in three courses in Advanced Form Design during spring 2008 - 2010. The participants were in total 111 master students with different nationalities (22-32 years old, 58 men and 53 women), enrolled in the Industrial Design Engineering program at Chalmers University of Technology in Sweden. They were to engage in a seven-week long design project as the main obligatory part of the course in groups of three to five students.

The data collection methods for documenting the results were observations from the weekly supervision sessions, the retrospective self-reflective diary entries that the students kept during their projects, and the final design results at the end of each course.



Final Remarks

The results and the course evaluations show that FAEDA can contribute to form innovation by: (i) developing a taxonomy/terminology for discussing form and aesthetic expression, (ii) investigating and create a typology of three-dimensional forms, (iii) and exploring the transition between form and meaning in design.