The background features a central funnel-like structure composed of a dense network of black dots and lines, representing data or a network. This funnel is set against a dark grey background. Above and below the funnel are colorful, wavy bands in shades of orange, red, yellow, green, and blue. The overall aesthetic is futuristic and technological.

EMERGING TECHNOLOGY DESIGN

AN INTRODUCTION



GENERAL INFORMATION

- 3 Years Bachelor IDE
- 2 Years Master IDE
- 350 bachelor / 200 master students

MASTER IDE

BACHELOR

- Skills and knowledge
- Scientific
- Broad spectrum
- Clearly defined

MASTER

- Knowledge and research
- Scientific depth
- Specialized field
- Many options

HOW TO CHOOSE YOUR INDIVIDUAL STUDY PROGRAMME?



MOPD
DR.IR. D. LUTTERS
(ERIC)



ETD
Dr. D.T.A. MATTHEWS (DAVE)



HTR
DR. A. KARAHANOGLU
(ARMAGAN)

Tracks

Management of Product Development

(MOPD)

Emerging Technology Design

(ETD)

Human Technology Relations

(HTR)

UNIVERSITY
OF TWENTE.

MASTER IDE

DESIGN

HUMAN FACTORS

ENGINEERING

ONE DIPLOMA FOR ALL TRACKS



EMERGING
TECHNOLOGY
DESIGN
MERGING
TECHNOLOGY &
DESIGN



EMERGING TECHNOLOGY DESIGN

MASTERTRACK INDUSTRIAL DESIGN ENGINEERING

“DESIGN ENGINEERING SOLUTIONS FROM EMERGING TECHNOLOGY”

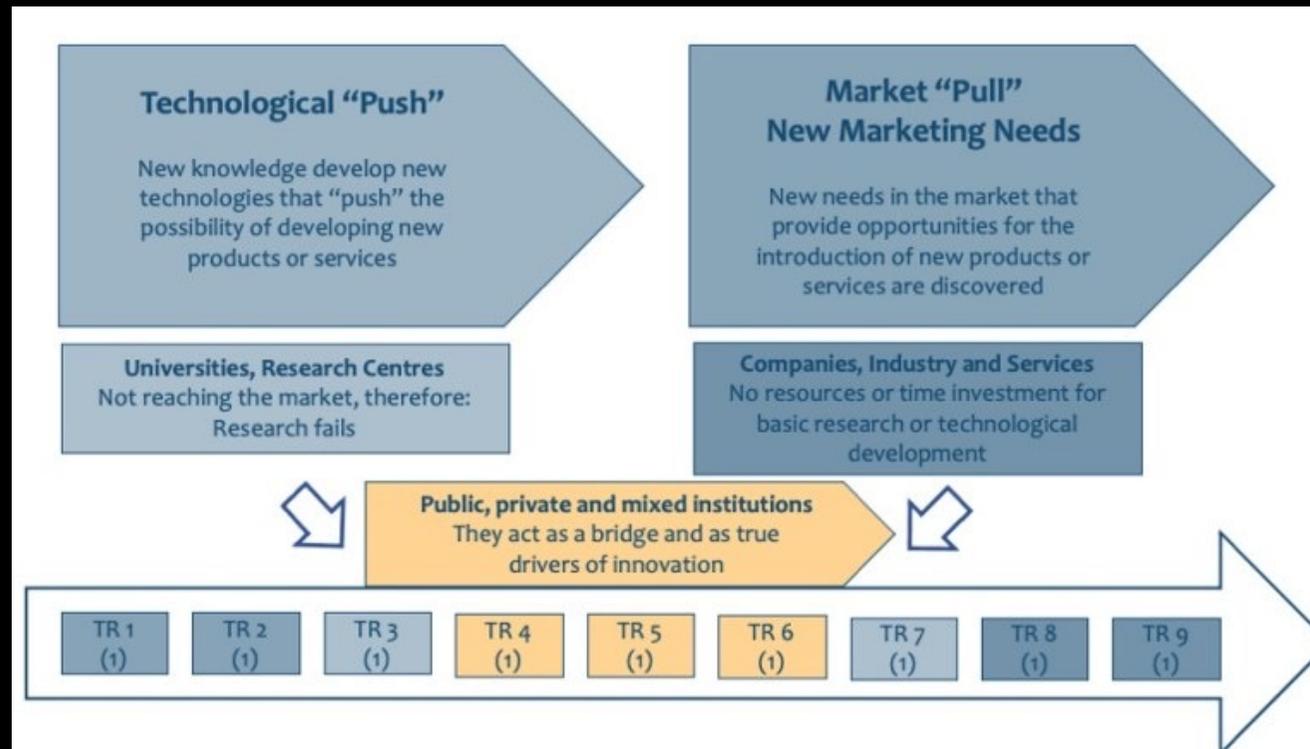
Making technology available for users

Keywords: design, research, engineering technology

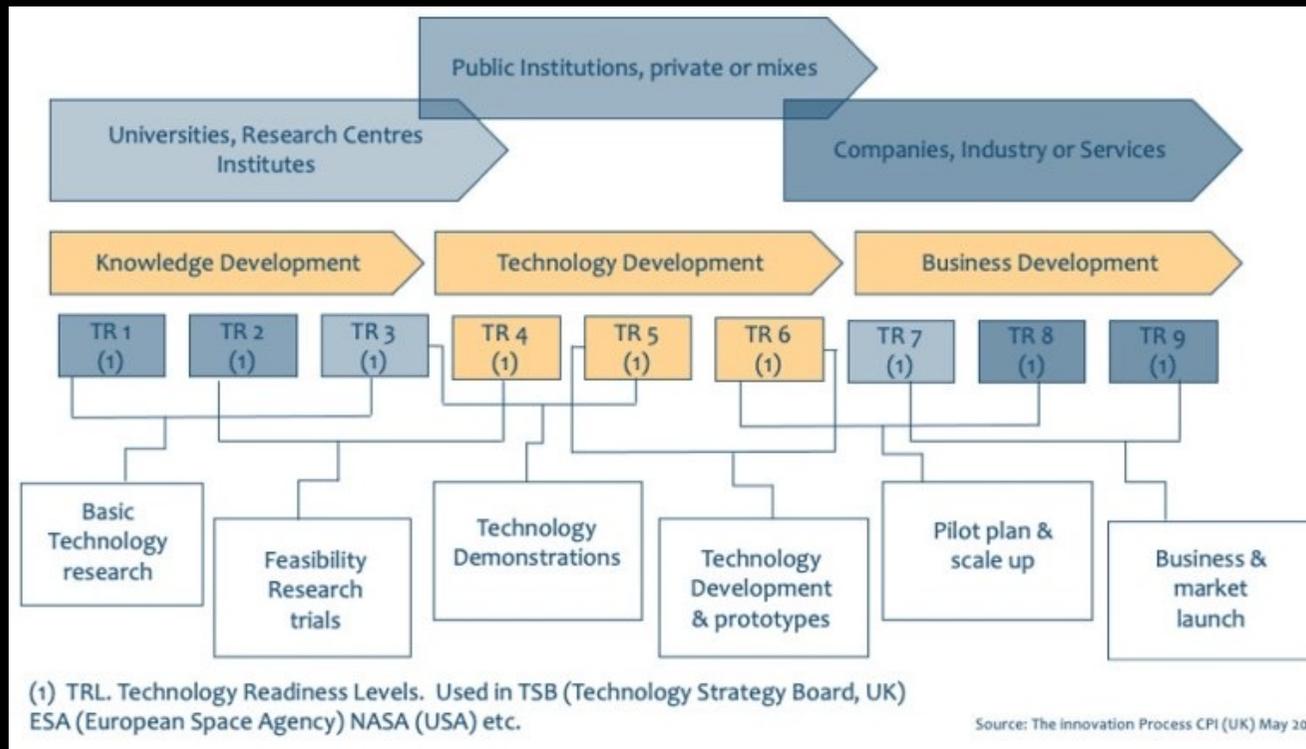
WHY?

- Product development and Innovation Models...
 - Lots of terms...
 - TRL (Technology Readiness Level)
 - Technology Push
 - Market Pull
 - Gartner Hype Cycle
 - Innovation valley of death

THIS IS WHERE PRODUCT DEVELOPMENT OFTEN FAILS

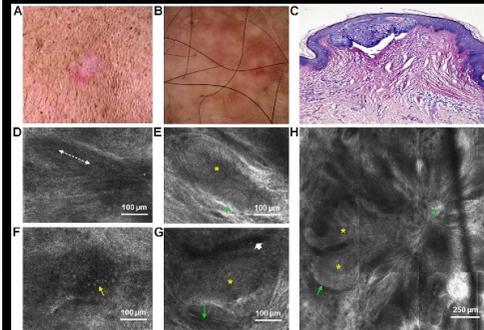
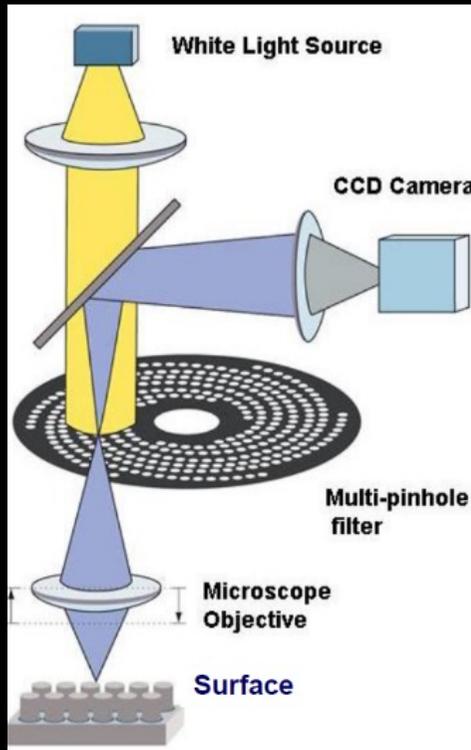


ETD AIMS TO BRIDGE THAT GAP





EMERGING TECHNOLOGY DESIGN CONTEXT



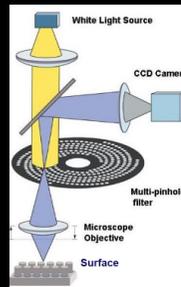
doi.org/10.3892/ol.2016.4354

•[10.2217/mmt-2018-0001](https://doi.org/10.2217/mmt-2018-0001)



EMERGING TECHNOLOGY DESIGN

CONTEXT



dermnetnz.org

You like to:

- understand new technologies → make them available for society
- convert recently published theories/technologies to new products or implement in existing products
- integrate technology and design
- In short: **be the bridge between research environments and market/industry**

MASTER IDE

Course 1 5EC
Course 2 5EC
Course 3 5EC

Course 4 5EC
Course 5 5EC
Course 6 5EC

Course 7 5EC
Course 8 5EC
Course 9 5EC

Course 10 5EC
Course 11 5EC
Course 12 5EC

Course 13 5EC
Course 14 5EC
Course 15 5EC

MSc. Assignment 45 EC
(INTERNAL OR EXTERNAL)



ETD THEME SPECIALISATIONS

SUSTAINABLE TECHNOLOGIES FOR PRODUCT DEVELOPMENT

BIOMEDICAL PRODUCT DEVELOPMENT

ADVANCED MATERIALS ENGINEERING

PRODUCTS & SURFACES

SMART ENVIRONMENTS & VIRTUAL REALITY

STRUCTURAL DYNAMICS, ACOUSTICS & CONTROL

ONE TRACK – SIX PROGRAMMES

CONTACT PERSONS



Dr. Bor
AME



Dr. Leemans
BPD



Dr. Matthews
ProSurf



Prof Bonnema
SE&VR



Prof. Rosic
'SDA&C'

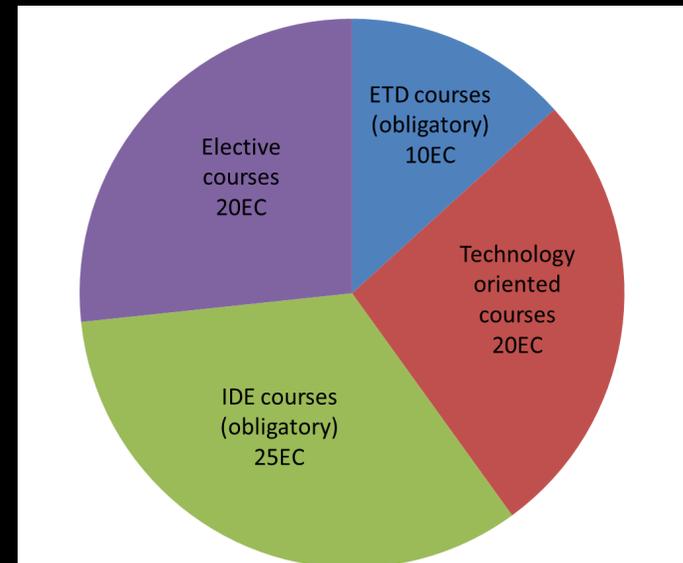


Ir. Toxopeus
STfPD

INDIVIDUAL STUDY PROGRAMME ETD

Courses (75 EC, equals 5 quarters)

- ETD courses (mandatory) (10 EC)
- Technology oriented courses (20 EC)
- IDE courses (25 EC)
- Elective courses (20 EC)

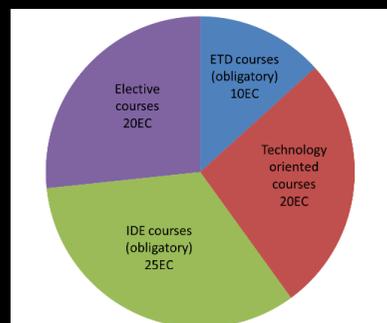


Master Assignment (45 EC, or 3 quarters)

ISP

PRE-DEFINED PROGRAMMES

- Enroll as IDE ETD
- Enroll to canvas site: IDE Master track Emerging Technology Design
- Latest version of the ISP can be found at the canvas site



UNIVERSITY OF TWENTE
EMERGING TECHNOLOGY DESIGN

Individual Study Programme
ETD

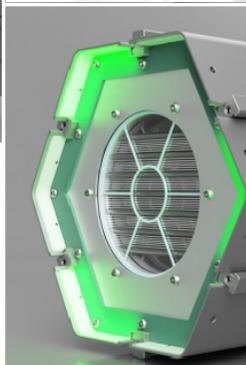
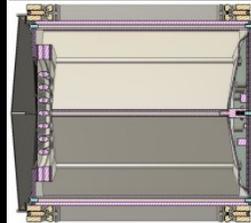
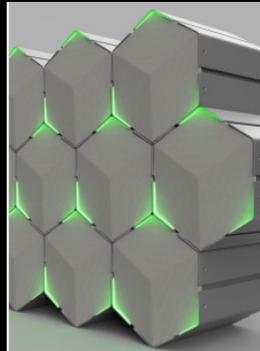
Start semester: _____
Name: _____
Date: _____

Prerequisites:
 - There are no prerequisites for this ETD
 - There are no prerequisites for this ETD
 - There are no prerequisites for this ETD
 - There are no prerequisites for this ETD

ECTS	Course	ECTS	Course	ECTS	Course	ECTS	Course
Master assignment: Emerging Technology Design							
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SOME EXAMPLES OF PRODUCTS DEVELOPED IN MASTER ASSIGNMENTS



ADVANCED MATERIALS ENGINEERING

THE DESIGN AND DEVELOPMENT OF AN INNOVATIVE DISCONTINUOUS AND CONTINUOUS REINFORCED HYBRID COMPOSITE MATERIAL



How to develop a near-net-shape material leading to a better formable laminate sheet using quick and easy processing methods

Ackelien Hageman

BIOMEDICAL PRODUCT DESIGN

THE MORGAN, NEXT LEVEL ORGAN PERFUSION

transport system for
transplant organs
that enables
perfusion of organs

cooperation with
Dutch transplant
centres

perfusing the organ
during transport
conditions positively
affects the quality
of the organ



Frank Timmerhuis

PRODUCT AND SURFACES

DESIGN AND FABRICATION OF A BIOMIMETIC LIFTING AID

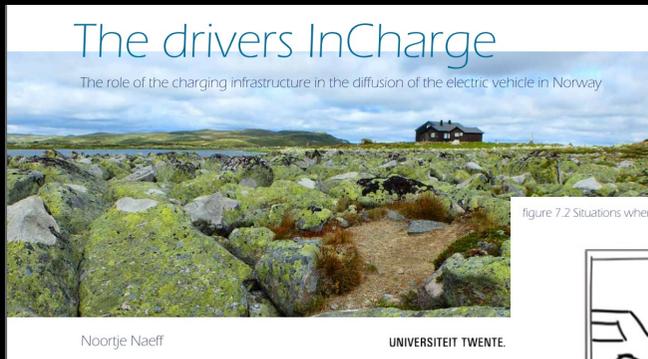
The lifting aid anchors itself on rough surfaces and can resist great transverse forces - just like an octopus.



Tjitte de Wolff / DDW 2017

SMART ENVIRONMENTS & VIRTUAL REALITY

THE DRIVERS INCHARGE – THE ROLE OF CHARGING INFRASTRUCTURE IN THE DIFFUSION OF ELECTRIC VEHICLES IN NORWAY



STRUCTURAL DYNAMICS, ACOUSTICS & CONTROL

A SOUND BEAM PRODUCT FOR BANG & OLUFSEN

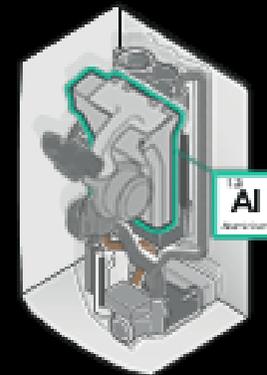
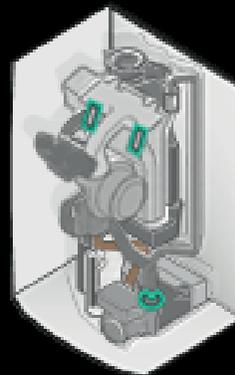
Design and development of a product in which the sound panels are placed in a horizontal overhead position



Marianne Bos

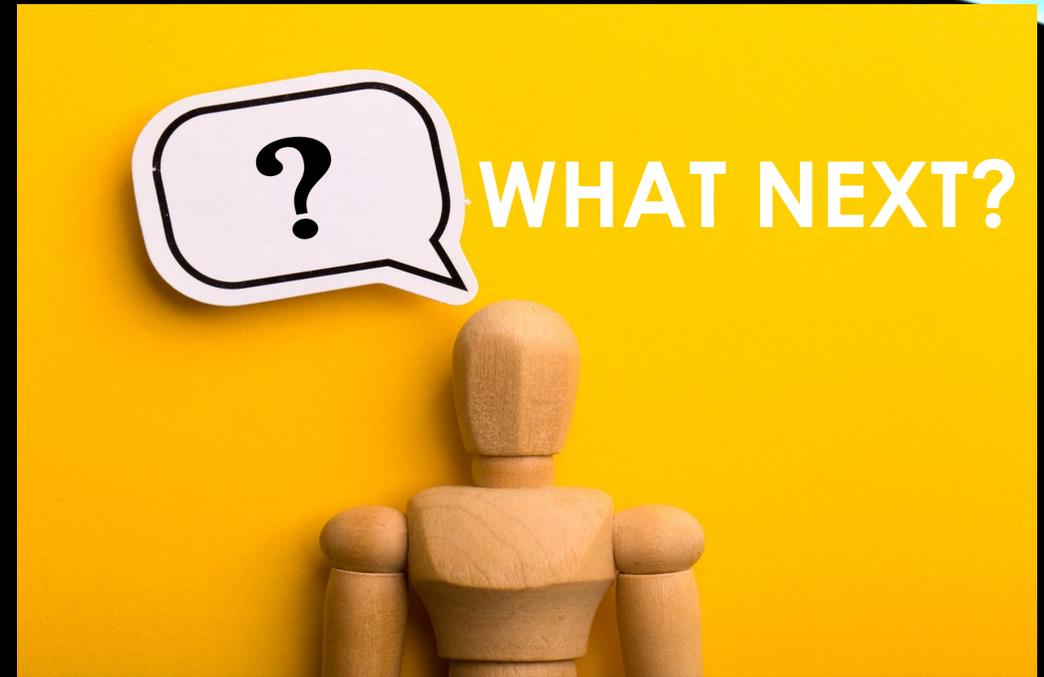
SUSTAINABLE TECHNOLOGY FOR PRODUCT DEVELOPMENT

DEVELOPING A DEDICATED TOOL TO SUPPORT THE DEVELOPMENT OF DOMESTIC BOILERS FOR A CIRCULAR ECONOMY



Niek van den Hout

- INDUSTRIAL DESIGNER
- PRODUCT ENGINEER
- RESEARCH & DEVELOPMENT ENGINEER
- INNOVATION SPECIALIST
- INNOVATION DIRECTOR





EMERGING TECHNOLOGY DESIGN
MAKE TECHNOLOGY WORK FOR SOCIETAL
BETTERMENT

CONTACT ME: d.t.a.matthews@utwente.nl or N-116