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Responsible Design for Our Future

The 22nd International Conference
on Engineering Design - ICED
Delft, The Netherlands
5 – 8 August 2019

Welcome!

We are pleased to invite you to the 22nd International Conference on Engineering Design, ICED19.

Every two years, ICED conferences offer a platform for knowledge exchange between researchers and practitioners in the field of Engineering Design. And every two years, the host of ICED provides a new theme that serves as an umbrella for the conference to spark discussions across all the hosted events about relevant topics of our time. The theme for ICED19 is 'Responsible Design for our Future'.

We want to bring together approaches, topics, methods, individuals and artefacts that embrace and embody responsible design for our future. Thus we want to encourage YOU to submit papers that not only report results from your on-going research, but also put special emphasis on how your insights and outputs will affect our future. We look forward to seeing your contributions – papers, posters, workshops and tutorials.

To further facilitate the discussion of our conference theme, in both small and bigger groups, and in formal and non-formal meetings, we will interweave special events and activities throughout the workshops and sessions spanning the traditional ICED topics.

The conference will be held at the campus of the Delft University of Technology from 5-8 August 2019. We want to make ICED19 a great experience for you with SIG meetings, workshops, presentations and social events that will foster cooperation across the ICED community.

All of us on the Organising and Programme Committees welcome you warmly to ICED19 in Delft!

Petra Badke-Schaub and Maaïke Kleinsmann



Conference theme

'Responsible design for our future' is the general theme of the conference. It manifests itself at four different levels, ranging from society as a whole to the individual future designer.

The first subtheme is 'Responsibility for our future society'. This subtheme is about the role of design engineering in solving grand societal challenges in areas such as healthcare, sustainability or mobility. We invite papers that aim for data-driven solutions on a systems level within different contexts.

The second subtheme is about 'Responsibility for the future organisation'. We want to exchange knowledge on how companies should organise their design (engineering) departments and processes so that they are capable of managing and realising responsible products and services.

The third subtheme is 'Responsibility for our future products, production and service systems'. This subtheme focuses on systems design, service design and design methods and tools.

Finally, the fourth subtheme is 'Responsibility for future designers'. We invite papers on the capabilities and the behaviours of the design engineer. We also aim for submissions that explain how design engineers can become more creative and how we can build an educational system that stimulates lifelong learning.

Responsibility for our future society

Design for healthcare

- Design of medical devices
- Design for mental health and wellbeing
- Design for patient-centred care
- Designing e-health systems
- Design driven innovations in healthcare
- User-centred design in healthcare

Design for sustainability

- Design for a circular economy
- Design for product lifetime optimisation
- Design for sustainable life/consumption
- Eco-design
- Design for the environment
- Design for cleaner production
- Environmental and sustainability assessment

Data driven design

- Data collection and knowledge management for big data
- Designing with sensory data
- Design statistics

- Big data mining
- Modelling consumer preferences/ behaviour
- Machine learning
- Semantic data processing
- Engineering ontologies

Next generation systems

- Industry 4.0
- Designing of Cyber-Physical Systems
- Embedded Systems Design
- Design for the Internet of Everything
- Systems Engineering, Complex Systems Design
- Engineering of Robotics and Mechatronic Systems
- Design for Autonomous Agents
- Artificial Intelligence and Awareness
- Smart Engineering, Smart/self-adapting Systems
- Intelligent materials

Design and mobility

- Design for E-mobility
- Lightweight design and efficiency
- Infrastructure and support system design

Responsibility for the future organisation

Design methodology

- Researching of designs and design methods
- Design theories and approaches
- Theory driven design
- Experiments in design

Design processes

- Product development models and strategies
- Design process modelling and management
- Product innovation engineering
- Industrial design

Design Management

- Organisational understanding of product development
- Design of organisational processes
- Design of workspaces to manage product development
- Market and business implications
- Innovation strategies and innovation management
- Design practice: Best practice, industry practice (cases)

Responsibility for our future products, production and service systems

System Design

- Product and system modelling
- Product architectures, structural complexity
- Platform design, modularization, product family design
- Robust Design, Tolerance Management
- Design for Interfaces, Human-Machine Interfaces
- System of Systems Design

Service Design

- Product-service systems design
- Planning for service co-production
- Design services in innovation networks
- Design for service delivery
- Design tools and techniques for service design

Design methods and tools

- Design for x, design to x (quality, sustainability, costs, ...)
- Design tactics and methods
- Requirement management, user orientation, user integration
- Evaluation methods
- Modelling and simulation methods
- Usage and integration of supportive technologies
- Virtual Reality, Augmented Reality
- Digital Engineering
- Additive Manufacturing, 3D/4D Printing

Responsibility for future designers

Human behaviour in design

- Designers' thinking and skills
- Teamwork in design
- Collaborative and participatory design
- Design communication
- Representation of design information
- Design for emotion and experience
- Decision Making
- Emotional Engineering

Design creativity

- Creative design processes
- Cognitive processes in design creativity
- Supporting design creativity
- Assessing creativity

Design education and lifelong learning

- Teaching examples and experiments
- Education experiences, plans and visions
- Training in design (academic and industrial)
- Awareness for societal consequences

ICED – Boosting Engineering Design Research

The International Conference on Engineering Design offers a unique platform for researchers and practitioners from all around the globe to communicate and discuss the newest trends and research insights in Engineering Design. It provides a unique and prominent biannual forum where the large design community can come together, share ideas, and foster friendships.

Looking back on its long history, ICED as the flagship conference of the Design Society is more than ever the leading conference on Engineering Design. It covers a broad scope of design-related topics and provides a vibrant atmosphere to disseminate and explore ideas and trends in Engineering Design.

ICED proceedings are structured by leading indexing bodies and the papers are downloadable from the Design Society homepage. Papers that are reviewers' choice will be recognised with a certificate. In addition, a committee will choose a small number of distinguished papers for special recognition.

We encourage you to join us at ICED19, to contribute to this extraordinary event by presenting and discussing your work, and to enjoy networking with the global, professional, multidisciplinary, and vibrant community of experts in Engineering Design!

We highly appreciate your continuing contributions to Engineering Design and look forward to meeting you in Delft!

Sandro Wartzack and Panos Papalambros



Activities and Events

- Plenary, podium and discussion sessions
- Keynotes from academia and industry
- Workshop sessions
- Industry exhibits
- Design Society meeting
- Young Members event
- PhD Forum
- Social events (conference dinner, excursions, etc.)



Introduction to the Venue

ICED19 will be held in Delft – a city you will fall in love with instantly. This charming city is the birthplace of the oldest and largest Dutch technological university and the stage of countless historical events. It is in a serene location between the vibrant cities of Rotterdam (15 min), The Hague (20 min) and Amsterdam (50 min), by tram, train, bus and, of course, by bike.

The conference will be held at the campus of TU Delft, at walking/cycling distance from the centre of Delft and the train station. In the historical city centre, you will find a unique cultural atmosphere, diverse shopping opportunities as well as lovely cafés and cosy restaurants. The canals and bridges that crisscross Delft give the town a unique romantic flair. So, don't hurry, work will wait.



Organising Committee

- Prof Petra Badke-Schaub, Conference Chair (TU Delft)
- Dr Maaïke Kleinsmann, Conference Chair (TU Delft)
- Prof Dirk Snelders (TU Delft)
- Dr Milene Guerreiro Gonçalves (TU Delft)
- Dr Carlos Cardoso (TU Delft)
- Dr Boris Eisenbart (Swinburne University of Technology)

Programme Committee

- Prof Sandro Wartzack, Programme Committee Chair (Friedrich Alexander University Erlangen-Nuremberg)
- Dr Benjamin Schleich, Assistant Programme Chair (Friedrich Alexander University Erlangen-Nuremberg)
- Dr Boris Eisenbart (Swinburne University of Technology)
- Dr Milene Guerreiro Gonçalves (TU Delft)
- Harald Voelkl, M.Sc. (Friedrich Alexander University Erlangen-Nuremberg)

Important Dates

2018

1 August
Full paper submission opens

2 December
Full paper submission deadline

2019

22 February
Notification of
paper acceptance

7 April
Camera-ready version
of the paper deadline

26 April
Author registration deadline

**5-8 August
Conference dates**



For the first time all papers at ICED19 will be Open Access. They will be easily downloadable and indexed on Scopus and Web of Science.