



Global Manufacturing Festival 2018

12. April 2018



Festival formiddag

8:30 **Registrering åbner og morgenmad**
DAMRC, Sandagervej 10, 7400 Herning

9:00 **Velkomst og indlæg om teknologicentret DAMRC**
Chef, Susanne Nors, Business Region MidtVest
CEO, Klaus Bonde Ørskov, DAMRC

9:30 **Fra trial-and-error til forudseende maskinbearbejdning** 
Ass. Professor, Ramin Aghababaei, AU Engineering

10:05 **At bygge metalprodukter med 3D print robotter** 
Co-Founder, Gijs van den Velden, MX3D

10:40 **Pause**

10:50 **At sænke time-to-market for smarte produkter ved modellering**
Professor, Peter Gorm Larsen, AU Engineering

11:25 **Industriel Internet of Things - hvad kan vi med det?** 
Lektor, Mirko Presser, AU Btech

12:00 **Frokost**

12:45 **Bus til AU Btech,**
Birk Centerpark 15, 7400 Herning

13:15 **At skabe synergi mellem uddannelse, forskning og erhvervsliv**
Instituttleder, Prof. Anders Frederiksen, AU Btech

13:30 **Hvorfor vi fejler i at omfavne forretningsmulighederne som services skaber for produktionsvirksomheder.** 
Professor, René Rohrbeck, AU BSS

14:10 **Opdeling i eftermiddagens 2 spor**

Festival eftermiddag i to spor

Spor 1: TBMI Challenge 2018	Spor 2: Virksomhedsbesøg på MultiCut
14:15 Introduktion til TBMI Challenge 2018 v. Professor Peter Lindgren og Ass. Professor Jacob Steendahl Nielsen	14:15 Intro til virksomheden MultiCut v. Erling Dyrmosø
14:45 Besøg i TBMI kuberne 15:30 6 af de 20 TBMI cases, inviterer indenfor til et indblik i hvordan virksomhed, studerende og coach arbejder med den teknologiske udfordring. 16:15 Gruppen vil hvert 45. minut give en præsentation af deres arbejde, så du har mulighed for at cirkulere rundt blandt de spændende cases. Hydra Grene A/S - Internet of Things <i>Virksomhedsrepræsentant:</i> Head of Business Development, Daniel S. Andreasen, Hydra Grene <i>Coach:</i> Ass. Professor, Jacob Steendahl Nielsen, AU Btech Ceramic Speed A/S - Big Data <i>Virksomhedsrepræsentant:</i> Executive Vice President, Anders Thormann, Ceramicspeed Bearings <i>Coach:</i> Ass. Professor, Mirko Presser, AU Btech Nordic Tech Solutions - Avancerede sensorer <i>Virksomhedsrepræsentant:</i> Co-owner, Michael Nyegaard, Nordic Tech Solutions <i>Coaches:</i> Professor, Peter Lindgren, AU Btech / Research Assistant, Merete Thorhauge Lindholm, AU Btech Conpleks A/S - Robot og droneteknologi <i>Virksomhedsrepræsentant:</i> Adm. direktør, Tom Simonsen, Conpleks A/S <i>Coach:</i> Post Doc, Muhammad Bilal, AU Btech Messe C - Virtual Reality og Kunstig Intelligens <i>Virksomhedsrepræsentant:</i> Adm. direktør, Grete Højgaard, Messe C <i>Coach:</i> Ass. Professor, Per Valter, AU Btech Energibyen Skive, Skive Kommune og GreenLab Skive - Mobilitet, IoT og vedvarende energi <i>Virksomhedsrepræsentanter:</i> Teresa Rocatis, Kristoffer Wolsing Skive Kommune/Energibyen og Poul Erik Pedersen, Gas2Move	14:45 Bustransit til MultiCut 15:15 Virksomhedsbesøg på MultiCut 16:30 Bus retur til AU Herning

Festival aften

17:00 **Kåring af årets TBMI Challenge 2018 vindere**

17:15 **Reception**

18:00 **Fælles gang fra AU Btech til HEART museet**

18:30 **Forret**

19:00 **Industri 4.0 - Trends og Udfordringer** 

Dr.rer. nat. Markus Eisenhauer, Fraunhofer Institute for Applied Informationtechnology (FIT)

19:40 **Hovedret**

20:30 **Hvordan kan jeg komme videre med digitalisering af min virksomhed?**

Salgsingeniør Leo Ravn, DAMRC og facilitator for Udviklingsprogrammet Industri 4.0

20:45 **Dessert**

21:30 **Bus transit til DAMRC**



Om oplægsholderne



Klaus Bonde Ørskov CEO, DAMRC

Klaus Bonde Ørskov er uddannet ingeniør og har adskillige års ledelseserfaring fra såvel produktionsindustrien, Teknologisk Institut, Erhvervsfrem-

mesystemet, forsvaret samt sit nuværende job som Direktør (CEO) i Forsknings- og Udviklingscenteret DAMRC.

Uddannelsesmæssigt har han en lederuddannelse fra forsvaret samt en ingeniøruddannelse i Business Development fra AU-Herning (speciale i Project Management fra Mälardalens Högskola, Eskilstuna Sverige.)

Siden 2009 har han været en af de primære drivkræfter bag udviklingen og opbygningen af Forsknings- og udviklingscenteret DAMRC F.M.B.A. Siden etableringen af DAMRC har han haft

den daglige ledelse af centeret, fra maj 2012 formelt som Direktør (CEO).

Klaus vil starte indlægsrække med at udfordre den danske industri med hensyn til anvendelse af nye teknologier til blandt andet at optimere bearbejdningsprocesser.



Ramin Aghababaei Assistant Professor, Aarhus University Engineering 

Ramin Aghababaei started working September 2017 as an Assistant Professor at Engineering Department, Aarhus University and he is currently the head of Surface Mechanics Group at Mechanical Engineering. Ramin

obtained his PhD degree from National University of Singapore (NUS) in 2012, and was a research scientist at École polytechnique fédérale de Lausanne (EPFL) in Switzerland for several years. Surface Mechanics Group conducts cutting-edge research on understanding deformation and failure of materials surface with direct application in manufacturing, machining and tribology (e.g. friction and wear).

Machining, the process of cutting materials into a desired shape and size by controlled material-removal processes, is one of the oldest yet most challenging problem in most industries, ranging from miniaturized biomedical and

electronic ones to large-scale automobile and aerospace sectors. Despite the two-century-long history of inquiry into the subject and the existence of empirical understanding, the science of machining remains one of the least understood areas of mechanics.

In this talk, Ramin present recent numerical developments toward scientific and predictive modeling of machining process at the most fundamental level, i.e. chip formation. A newly-born physics-based machining simulator library (named Tomi) with capability of simulating the process of chips formation in metals and ceramics is presented and the future perspective will be discussed.



Gijs van der Velden Co-founder, MX3D 

After completing his master International Law, Gijs van der Velden joined Joris Laarman Lab in 2009, assuming the general management position in 2011, becoming partner in 2014.

In this Lab the future of digital production is subject to critical and visionary research and development. Research on the future of 3D printing is a key subject.

Research showed that the 3D printing industry would not bring the Lab a printer that could print big, fast and affordable. The Lab thus decided to take matters in their own hands.

The team developed a robotic 3D Printer that prints big objects, out of the box, without support structure, in metals and resins.

After completing several experiments,

Art Pieces and a Bicycle, MX3D set out on a journey to 3D print a metal bridge over a canal in the Red Light District of Amsterdam to show the potential of its technique. Printing has started and MX3D aims to finalize the bridge in 2018.

MX3D has also started a new collaboration aiming to create a full sensor network on the bridge once it is in place. Besides monitoring the Bridge Health, the team will create a digital twin, which will be used to speed up the creation of a new design language, based on empirical data and tailored to their technique.

Peter Gorm Larsen Professor, Aarhus University - Engineering



Peter Gorm Larsen er professor ved Institut for Ingeniørvidenskab på Aarhus Universitet, hvor han både har ansvaret for en forskningsgruppe omkring

software engineering samt står for Aarhus Universitets DIGIT center med fokus på digitalisering, big data og data-analyse. Han har brugt størstedelen af sin karriere i erhvervslivet men kom tilbage til den akademiske side i 2005. Hans primære forskningsområde i dag er omkring udvikling af smarte produkter ved hjælp af forskellige former for præcise modeller som kan kombineres i en fælles analyse f.eks. med co-simulation.

Udvikling af fysiske produkter kan tage lang tid, specielt hvis tests af produktet er dyre og/eller er langvarige. Når sådanne fysiske produkter bliver mere

intelligente ved hjælp af små elektroniske løsninger bliver udfaldsrummet enormt. Denne præsentation viser hvordan en model-baseret tilgangsvinkel for udvikling af den slags produkter totalt kan ændre tiden fra idé til endeligt produkt. Det er forventeligt at der vil komme disruption hvor det bliver muligt at "opleve" sådanne produkter før de eksisterer. Dette kan opnås med forskellige typer af modeller i en virtuel sammenhæng så man f.eks. ved hjælp af 3D simulationer med specielle 3D briller kan blive i stand til at opleve hvordan produktet vil virke inden det findes i virkeligheden.

Mirko Presser Lektor, Aarhus University - BTech



Mirko Presser holds an Associate Professorship in Digital Business Development and Innovation at Aarhus University, AU Herning. Previously, he was the Head of Research and Innovation

for the Smart City Lab at the Alexandra Institute working on Open Data and the Internet of Things in the context of Smart Cities for Citizens. He is also the president and now vice president of the IoT International Forum since it was founded in June 2013.

He has been studying and working on IoT and Smart City research since 2002, he has published over 30 scientific peer-reviewed papers on the topics and has served on numerous scientific committees and steering boards. He has a Master's degree in Physics with Astrophysics and a Master's degree

in Telecommunications and Systems Engineering both from the University of Bristol and received his PhD on the Mobile IoT from the University of Surrey. He has also been strongly involved in the European FP6, FP7 and now H2020 ICT programmes and has been the Technical Manager of the FP6 IST e-SENSE and FP7 ICT SENSEI projects, both pioneering the Future Internet and Internet of Things, amongst many other projects as well as he was the coordinator of the FP7 EeB PPP project called URB-Grade. Currently he is the coordinator of the H2020 NGI MOVE CSA under ICT-41.

René Rohrbeck Professor, Aarhus University - Btech



Before joining Aarhus University René spent 6 years in the industry where he worked on innovation management at Volkswagen and on corporate foresight

at Deutsche Telekom. As a consultant he has served clients on a number of topics including designing innovation management systems, developing and implementing corporate foresight practices, as well as strategic and financial planning of new business fields.

Today René is a Professor of Strategy at the Aarhus School of Business and Social Sciences. Furthermore he also runs the international Strategic Foresight Research Network. He has authored the book "Corporate foresight - Towards a Maturity Model

for the Future Orientation of a firm", in which he develops a benchmarking framework for assessing future orientation and describes best practices in corporate foresight.

His topic to share on Global Manufacturing will be about "Why we fail to embrace the opportunities arising from Servitization: And why this might be fatal for many firms."

René will share good practices on servitization, show how to develop a servitization strategy and explain how to overcome the 5 most common traps.

Om oplægsholderne



Markus Eisenhauer studied Psychology and Informatics at the University of Trier in Germany and received a PhD in Cognitive Psychology from the same University. Since 2001 he works at the Fraunhofer Institut for

Markus Eisenhauer Division Manager User Centered Computing and Head of Ubiquitous Computing, Fraunhofer Institute for Applied Information Technology

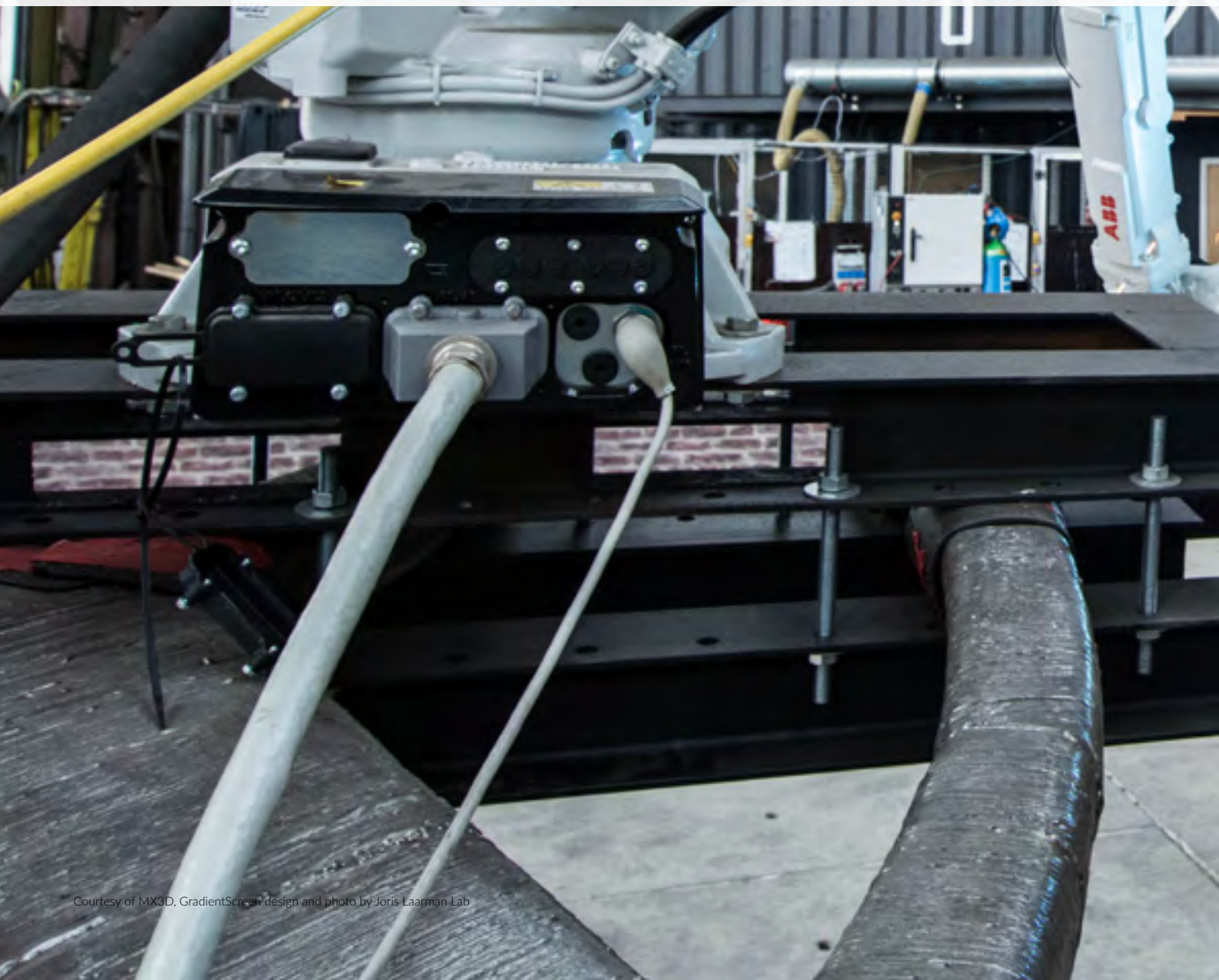


applied Information Technology (FIT) and is leading the Research Department on User Centered Computing, focusing on Ubiquitous Computing, Industry 4.0, Internet of Things, embedded and Cyber-Physical Systems, as well on M2M and HM-Interaction, Usability and Web-Compliance.

Dr. Eisenhauer is the coordinator of several big European Projects and has participated in a multitude of large-scale national funded and European projects (German Industrie 4.0 and European IoT; e.g. he is currently the coordinator of one of the large-scale IoT pilots MONICA, addressing sound

balance and crowd management on Open Air events). He works as a Program Chair of international Conferences, Editor of scientific Journals and as Expert for the European Commission.

The talk will motivate the importance to focus current changes and innovations and address its challenges. In a global economy, also long established businesses are affected by disruptive changes. Business as usual can only be ill afforded. More than ever a turn towards research and innovation to address the dynamics of the markets with constantly changing values and new business models are necessary



Om lokationerne

Danish Advanced Manufacturing Research Center (DAMRC)



Idéen til DAMRC kom oprindeligt fra den amerikanske flygigant Boeing. Boeing havde frem til 2009 været involveret i etableringen af over 10 lignende centre, herunder det meget succesfulde center "Sheffield University, AMRC with Boeing"(AMRC).

På baggrund af et idéoplæg fra Boeing samledes et dansk partnerskab bestående af 10 partnere og i september 2009 besluttede partnerskabet at igangsætte et omfattende forstudie, der senere skulle vise sig at blive til DAMRC.

1. januar 2014 overtog DAMRC lokalerne på Sandagervej 10 i Herning, hvor produktionshallen, hurtigt blev til et fuldt funktionsdygtigt teknologicerter med egne bearbejdningsmaskiner og undervisningsfaciliteter.

Aarhus University Department of Business Development and Technology



Institut for Forretningsudvikling og Teknologi (BTECH) udbyder fire bacheloruddannelser, en specialisering i forretningsudvikling for diplomingeniører, to kandidatuddannelser samt HD og Diplom i ledelse.

Yderligere er der på AU Campus Herning mulighed for at læse diplomingeniør i Elektronik og Adgangskursus til diplomingeniøruddannelserne - elektronikuddannelsen og adgangskurset udbydes af Ingeniørhøjskolen på Aarhus Universitet.

Uddannelserne er baseret på et tæt samspil med det omkringliggende erhvervsliv - , ligesom studerende lærer at arbejde sammen på tværs af faggrænser i løbet af deres uddannelse.

TBMI Challenge



Technological Business Model Innovation Challenge er en tre dages udviklingsprint imellem studerende, forskere og virksomheder.

Konceptet er udviklet i MBIT LAB ved Aarhus Universitet – BTECH, og er relateret til værktøjet "The Business Model Cube" udviklet af Professor Peter Lindgren og hans forskningsteam.

MULTICUT A/S



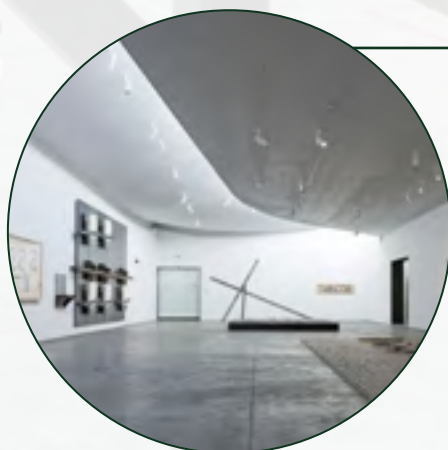
MULTICUT A/S er underleverandør af masseproduktion til krævende kunder.

Firmaet blev stiftet i 1998 og beskæftiger idag mere end 100 ansatte.

MultiCut beskæftiger sig udelukkende med CNC-forarbejdning.

Der forædles ca. 5000 tons stål/metal pr. år.

HEART



HEART – Herning Museum of Contemporary Art er opstået i grænselandet mellem kunst og erhverv og er båret frem af den passionerede skjortefabrikant Aage Damgaard (1917-1991), som har skabt fundamentet for museets samling. Herning Kunstmuseum blev til i 1977, og åbnede d. 9. september 2009 i en helt ny bygning tegnet af den amerikanske arkitekt Steven Holl. Ved indvielsen ændrede museet navn til HEART.

Deltagelse er gratis.

Vælg om du vil være med formiddag,
eftermiddag, aften eller hele dagen.

Tilmelding
brmv.nemtilmeld.dk/7

Festivalpartnere



Udviklingsprogrammet
Industri 4.0



BUSINESS REGION MIDTVEST



AARHUS
UNIVERSITY



SCHOOL OF BUSINESS AND SOCIAL SCIENCES
AARHUS UNIVERSITY

STARTVÆKST⁺ Holstebro STARTVÆKST⁺ Lemvig STARTVÆKST⁺ Struer

SET 
Skivegnens Erhvervs- og Turistcenter


Erhvervsrådet
Herning & Ikast - Brande



Central Denmark.eu

infinite
Innovationsnetværk for it

AUHE
MIDTVEST'S STØTTEFOND

midt
regionmidtjylland

DEN EUROPÆISKE UNION
Den Europæiske Fond
for Regionaludvikling 
Vi investerer i din fremtid