

Introduction of the First Year Ph.D. Student

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BUT

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**INSTITUTE OF MACHINE
AND INDUSTRIAL DESIGN**

CONTENT

- Introduction
- Hobbies and interests
- Education
- Doctoral study
- Teaching activities

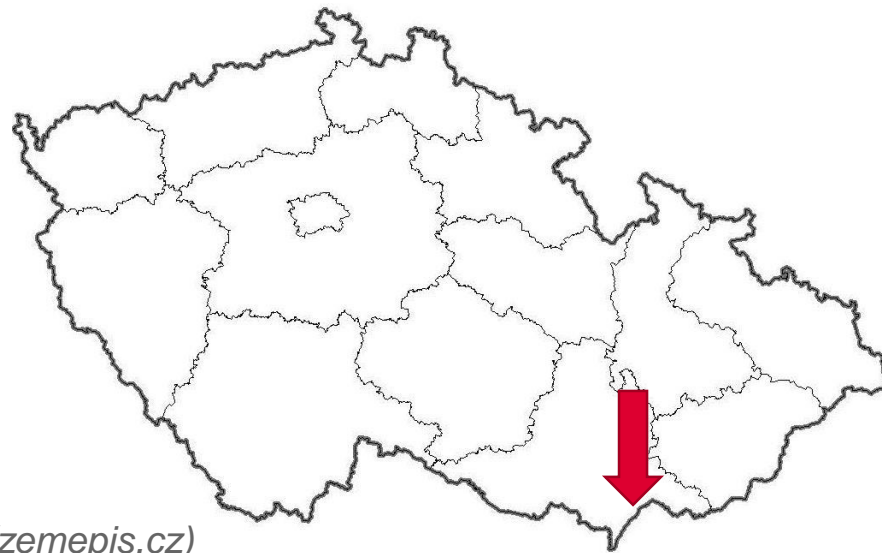


INTRODUCTION

- **Place of birth:** Šumperk
- **Permanent stay:** Lužice u Hodonína
- Jihomoravský kraj – Region Podluží



- **2800** inhabitants
- Growing of **wine** and fruit
- Oil and gas extraction – **MND**



(zemepis.cz)



(luziceuhodonina.cz)

INTRODUCTION

- Events:**
- International folklore festival in Strážnice
 - Pálava wine harvest
 - Burčák march – **13.10.**



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Introduction of the First Year Ph.D. Student



HOBBIES AND INTERESTS

- Sports:**
- Hiking
 - Running
 - Swimming
 - Cycling
 - Skiing



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HOBBIES AND INTERESTS

Traveling:

- “We travel not to escape life, but for life not to escape us.” – Anonymous



(Lindau Island – Germany)



(Rhine Waterfalls – Switzerland)



(Arad – Romania)



(Canton Aargau – Switzerland)



(Venice – Italy)

HOBBIES AND INTERESTS

Other activities:

- Meeting new cultures
- Moments with friends
- Gardening
- Rock'n'roll



(Bio-farm – Switzerland)

EDUCATION

High school

- Gymnázium Hodonín, Legionářů 1 – general orientation (2010-2013)

University

- Bachelor's degree – BUT, Fundamentals of Mechanical Engineering (2013-2016)
- Master's degree - BUT- Institute of Machine and Industrial Design – Mechanical Engineering (2016-2018)



(goah.cz)



(czregion.cz)

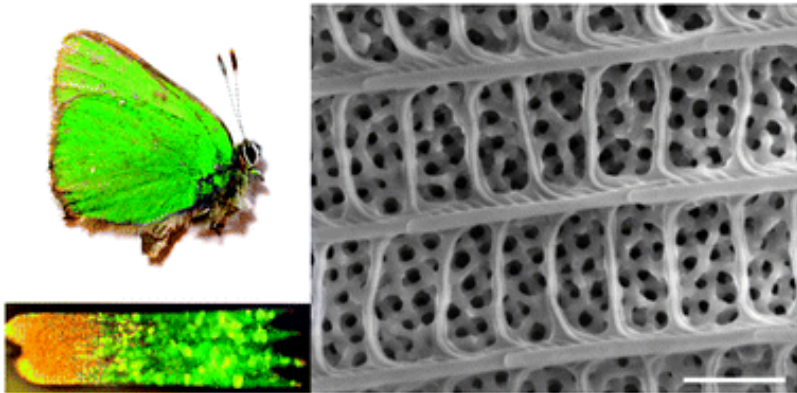


Gymnázium Hodonín (prazak.cz)

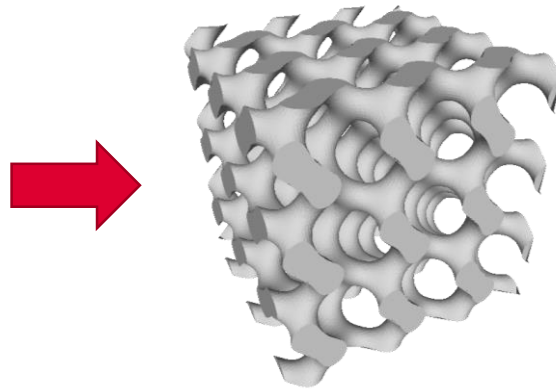
BACHELOR'S THESIS

3D lattice structures for application in Selective Laser Melting

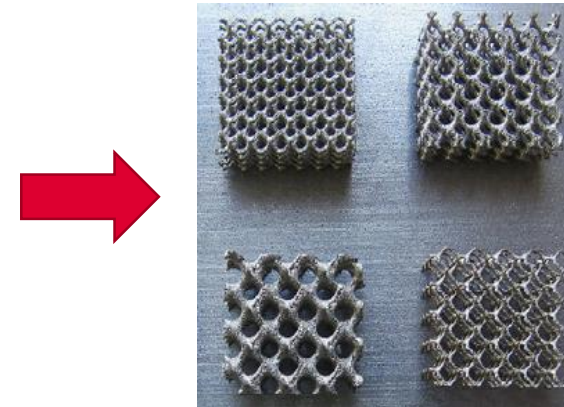
- Institute of Machine and Industrial Design
- Supervisor: Ing. Radek Vrána



Detail of butterfly wing structure (4 μm)
(Teoretische Physik)

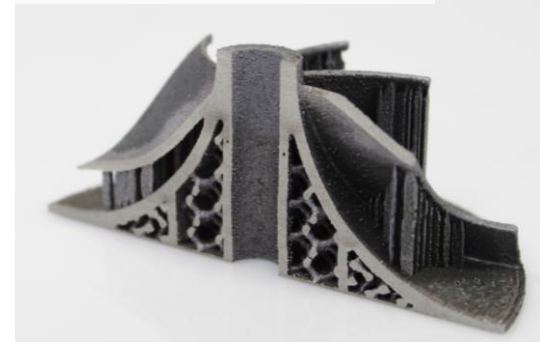


Gyroid structure model -
file format .obj



Gyroid structures made
by SLM (Materials and
Design, Chunze Yan)

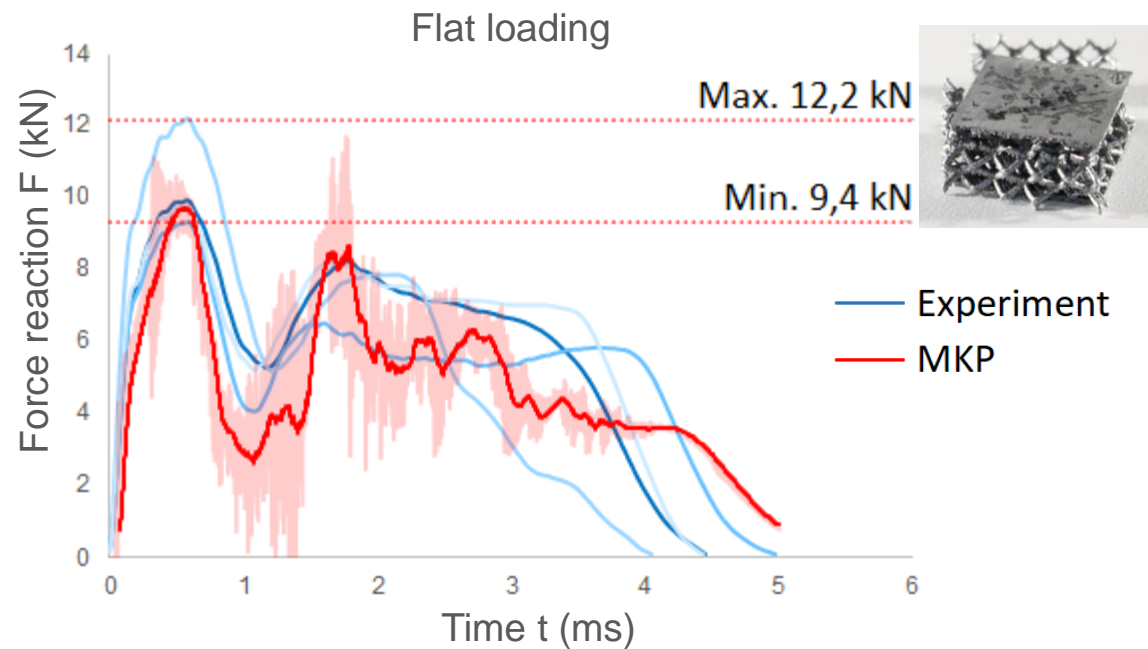
Example of application



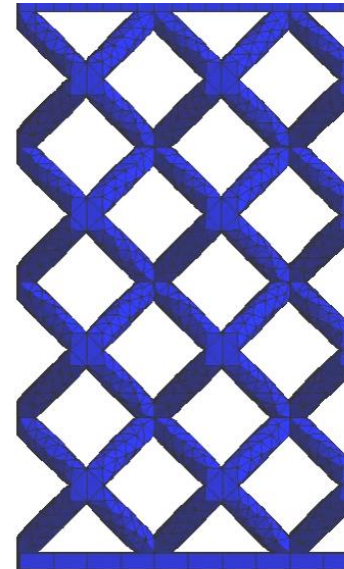
DIPLOMA THESIS

Numerical model of lattice structure under dynamic loading made by Selective Laser Melting

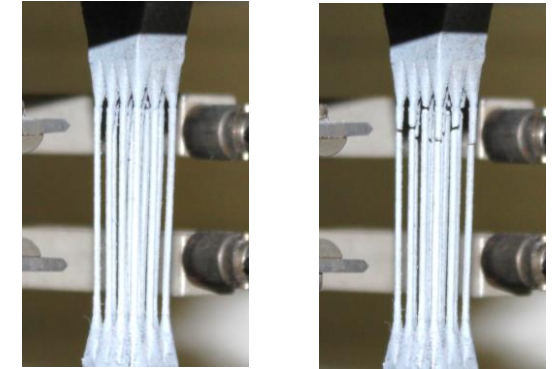
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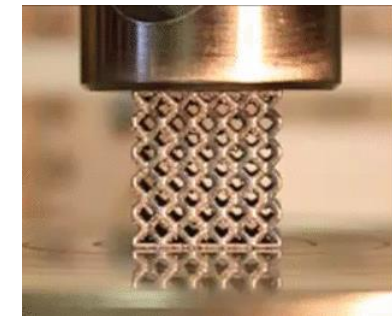
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Deformation of the flat-loaded sample in FEM



Tensile test of multi-struts specimens

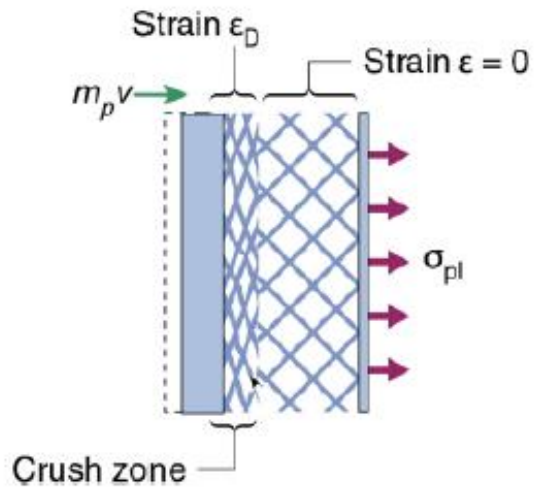


Pressure test of structure

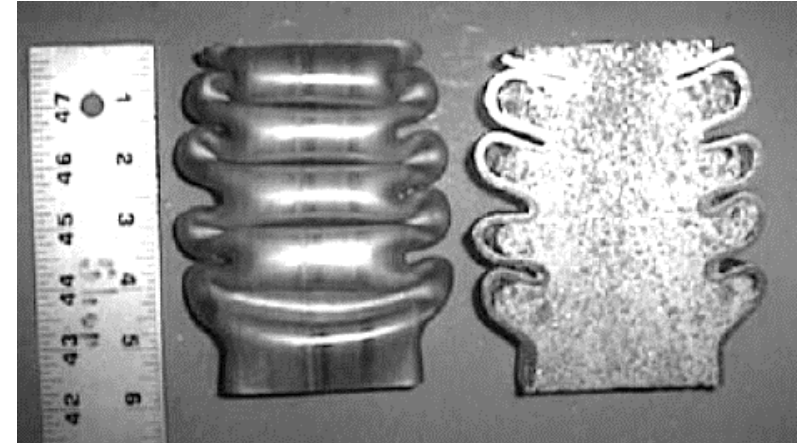
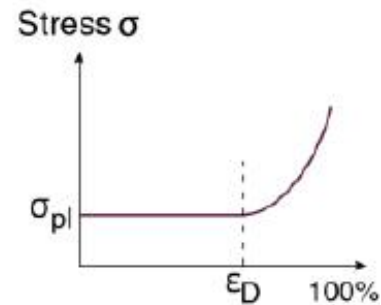
DISSERTATION'S THESIS

3D printing of structured parts

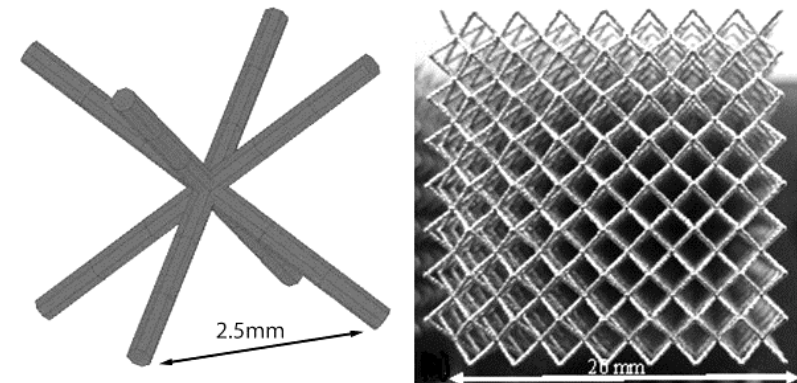
- Institute of Machine and Industrial Design
- Supervisor: doc. Ing. Daniel Koutný, Ph. D.
- Expert consultant: doc. Ing. David Paloušek, Ph. D.



Deformation of the porous structure at impact load (Mines 2016)



Conventional energy absorber filled with aluminum foam (Kremer 2004)



Lattice structure BCC (Mines 2016)

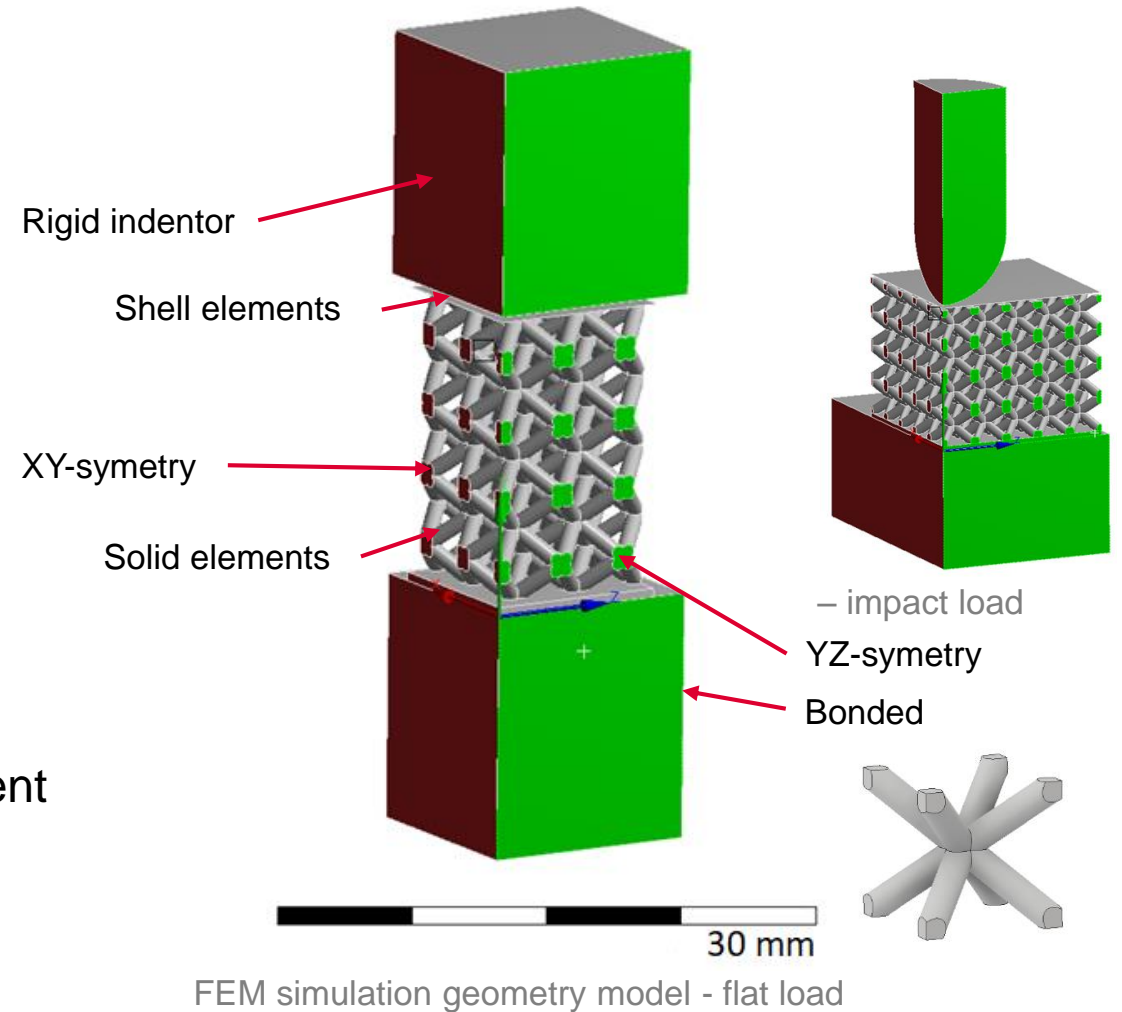
TEACHING AND LEARNING ACTIVITIES

Teaching

- ZAT Additive Technologies
- 3CD CAD
- ZKP Team Project
- 1K Machine Design Fundamentals
- RS1 3D digital technology and CAD

Learning

- 9MOP Methodologies of scientific work
- 9VPR Research Project and Its Management
- 9AJ English for Doctoral Degree Study
- 9MKP FEM in engineering calculations
- 9NMT Nonlinear mechanics and FEM



THANK YOU FOR YOUR ATTENTION

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