UNIVERSITATEA TEHNICĂ DIN CLUJ-NAPOCA

Tehnologia Constructiilor de Masini

Prof. Nicolae Balc

Decan, Facultatea Constructii de Masini

Universitatea Tehnica din Cluj-Napoca

Universitatea Tehnica din Cluj-Napoca









Certificarea EUR-ACE 2012



European Accreditation of Engineering Programmes
EUR-ACE®

This is to certify that the engineering degree programme

Tehnologia construcţiilor de maşini
(Manufacturing engineering)

provided by

Universitatea Tehnică Cluj-Napoca,
Facultatea Construcţii de Maşini

accredited by

ARACIS

on **(28th June 2012)** until **(28th June 2017)**

satisfies the criteria for **Bachelor** degree **programmes** specified in the **EUR-ACE Framework Standards for the Accreditation** of **Engineering Programmes**, and therefore for the above period of accreditation is designated as a **EUROPEAN-ACCREDITED ENGINEERING BACHELOR** Degree Programme.

For the European Network for Accreditation of Engineering Education (ENAEE)

The President
Dr. Iring Wasser

Brussels, 14 November 2013

For Agenţia Română de Asigurare a Calităţii în Învăţământul Superior (ARACIS)

The President
Prof. Ioan Ghiu

Bucharest, 14 November 2013

Note: A graduate of this programme may define him/herself "EUR-ACE Bachelor/Master" as appropriate

Universitatea Tehnica din Cluj-Napoca

* Certificarea EUR-ACE recunoscuta la nivel international
* Posesorilor acesteia li se confera, la cerere
* Titlul “EUR Ing”



* ARACIS a realizat deschiderea si evaluarea EUR-ACE
* Acum sunt mai multe programe certificate EUR-ACE
* Sper ca se va reusi la nivel national, **introducerea “EUR-ACE label pe diploma** de inginer

Experienta TCM Cluj, cu EUR-ACE

* Grupuri tinta:
  * Studenti / Absolventi
  * Departament / Facultate
  * Angajatori
* Evolutia in ultimii 5 ani
* Studentii beneficiaza de orientare profesionala practica, spre nevoile firmelor
* A crescut procentul de angajabilitate al absolventilor
* Departamentul IF – TCM s-a dezvoltat prin proiecte
  * Nationale
  * Europene
  * Comerciale – cu firmele care angajeaza absolventi TCM

TCM Cluj

- **Specializarea inginerilor TCM in stiinta fabricarii competitive a produselor industriale, din intreprinderile mici si mijlocii sau din marile companii industriale;**
- **Adaptarea inginerilor TCM la noutatile tehnice din industria de automobile, aparate electro-casnice, etc.**
- **Formarea abilitatilor practice a inginerilor TCM, prin invatarea bazata pe proiecte si colaborari cu firme industriale sau cu parteneri internationali**
- **TCM are o traditie de peste 60 de ani la Cluj-Napoca**
  - **laboratoare moderne, cu imprimante 3D, centre de prelucrare cu comanda numerica si alte echipamente de exceptie**
  - **utilizate pentru instruirea practica a studentilor TCM.**

TCM - cu predare in romana, germana si englezĂa

* **TCM se preda la Cluj in limbile:**
* **ROMANA – 60 de ani de traditie si experienta**
* **GERMANA – peste 20 de ani de colaborare si schimburi de studenti cu universitati din Germania**
* **ENGLEZA – acreditare din 2013, studentii sunt angrenati in parteneriate internationale**

* **TCM se preda la Cluj, dar si in extensiile din:**
  * **Zalau**
  * **Satu-Mare**
  * **Alba-Iulia**

Posibilităţi de angajare
in 2017, peste 52% angajati in inginerie, in mai putin de o luna

* La firme naționale şi multinaționale în domenii precum:
  * Fabricația componentelor auto
  * Fabricația de electrocasnice
  * Fabricația implanturilor medicale
  * Fabricația echipamentelor sportive
* Profesori cu experienţă europeană
* Dotari de varf, echipamente foarte moderne de fabricatie asistata de calculator, imprimante 3D performante, etc

Cadre didactice – TCM Cluj


Prof. N. Bâlc
Director DIF


Prof. Gh. Achimaş


Prof. M. Ancău


Prof. D. Banabic


Prof. P.Berce


Ş.I. Paul Bere


Ş.I. V. Bocăneţ


Ş.I. Cristian Caizar


Ş.I. H. Chezan


Ş.I. G. Conţiu


Prof. M. Borzan


Prof. M. Bulgaru


Prof. S. Grozav


Prof. Cs. Gyenge


Prof. L. Hancu


Ş.I. D. Leordean


Ş.I. L. Lăzărescu


Ş.I. N. Panc


Ş.I. A. Păcurar


Ş.I. R. Păcurar


Prof. H. Iancău


Prof. M. Popa


Prof. O. Roş


Prof. Gh. Vuşcan


Conf. A. Cărean


Ş.I. A. Radu


Ş.I. E. Sabău


Ş.I. A. Trif


Asist. V. Ceclan


Asist. C. Miron-Borzan


Conf. Gh. Ciutrilă


Conf. O. Costin


Conf. S. Comşa


Conf. M. Damian


Conf. D. Frăţilă


Asist. Alina Popan


Asist. A. Popan


Asist. A. Popescu


Tehn. M. Pojar-Feneşan


Tehn. L. Popa

Conf. Gh. Gligor

Conf. M. Mera

Conf. D. Păunescu

Tehn. A. Roşca

Tehn. C. Moldovan

Tehn. I. Pintea

Tehn. Gh. Vele

MATEC Web of Conferences

volume 116 - 2017

The 6th International Scientific Conference "Reliability and Durability of Railway Transport Engineering Structures and Buildings" (TransBud 2017) was held on April 19-21, 2017 in Ukrainian State University of Railway Transport (UkrSURT) in Kharkiv. This conference has been held since 2006 every two years at the UkrSURT. The plenary session and three sections worked at the 6th Conference: Section 1 - "Construction Materials, Protection and Repair of Structures and Buildings"; Section 2 - "Structures, Buildings and Facilities"; Section 3 - "Railways and Highways, Subways and Industrial Transport". 311 participants from 31 institutions and companies from fifteen cities and five countries presented 150 reports at the 6th Conference.

ISBN: 978-2-7598-9022-4

MATEC Web of Conferences

www.matec-conferences.org

MATEC web of conferences

MTeM – AMaTUC 2017

volume 116 - 2017

Materials science, Engineering and Chemistry volume 116 - 2017

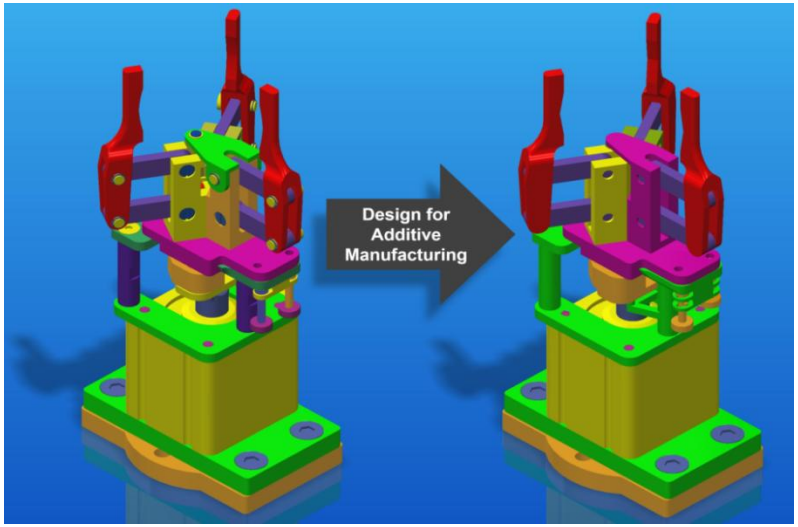
MATEC Web of Conferences

Proceedings

MTeM – AMaTUC 2017

Advanced Manufacturing Technologies

Nicolae Balc, Editor



edp sciences

Proiecte aplicative, orientate spre parteneriate cu industria, aflate in derulare la TCM Cluj

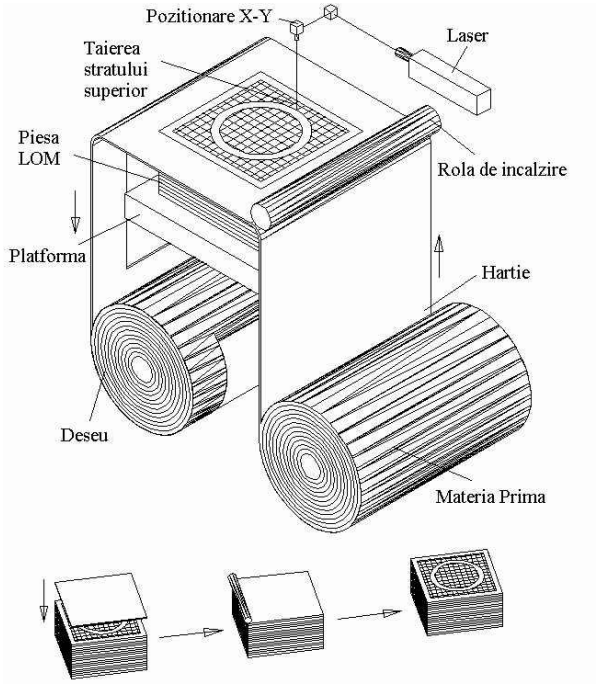
* UEFISCDI – 2017-2018
* 3 proiecte de tip Bridge
  * SLM / WJC / CM
* 1 proiect PCCA
* 1 proiect TE - 2017
* 1 proiect de tip consortiu 2018

* Orizont 2020
  * AMaTUC – Twinning- 3 ani
    * Additive Manufacturing at Technical University of Cluj
    * www.amatuc.com
  * DiCoMI – RISE – 4 ani
    * Dezvoltarea unui nou tip de imprimanta 3D

Procesul LOM si aplicatii TCM - Cluj

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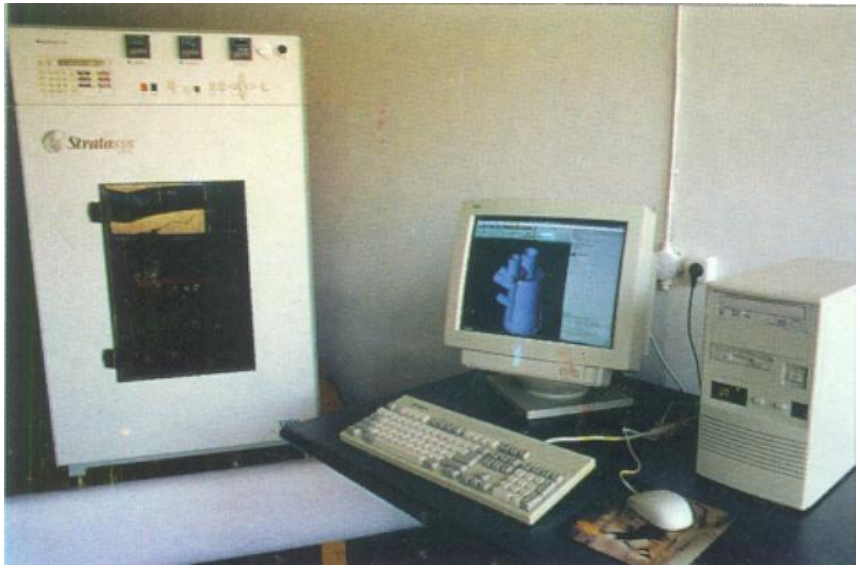


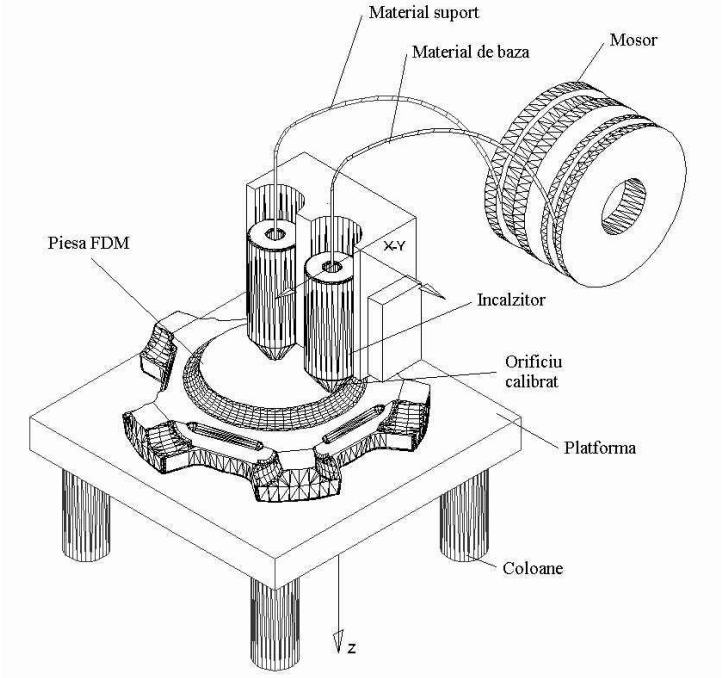




Procesul FDM si aplicatii TCM - Cluj

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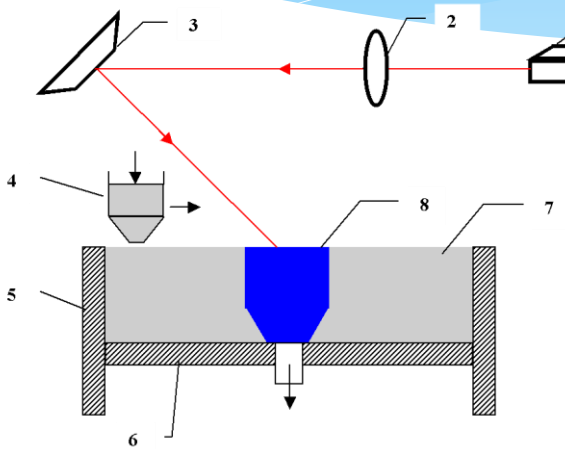


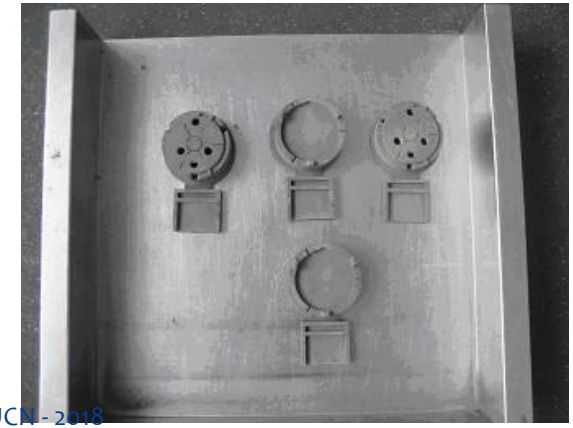


Procesul SLS si aplicatii TCM - Cluj

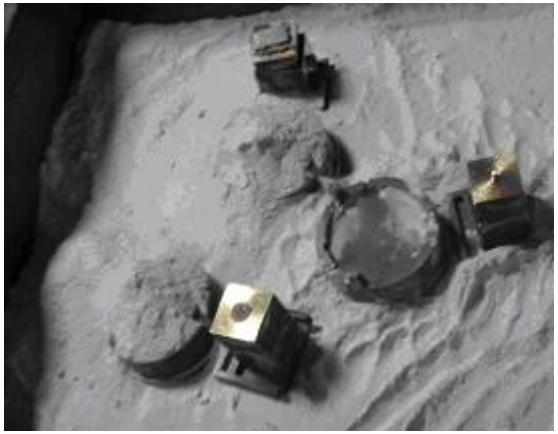
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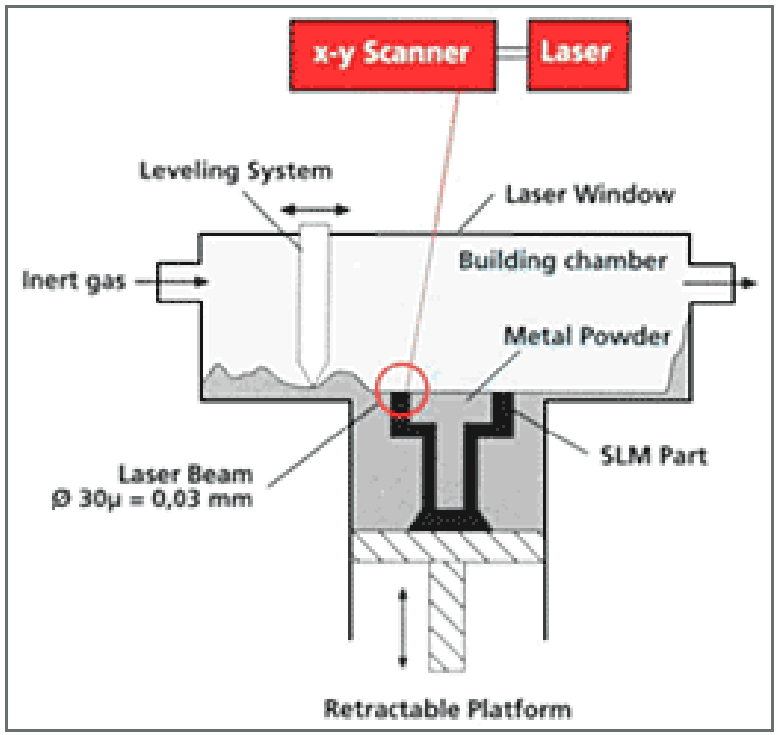






Topire Selectiva cu Laser (SLM) TCM - Cluj

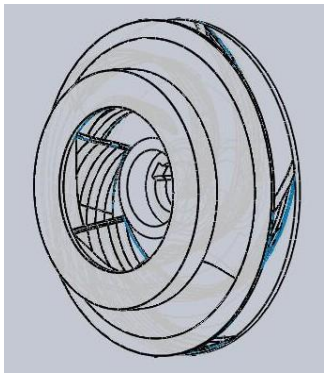
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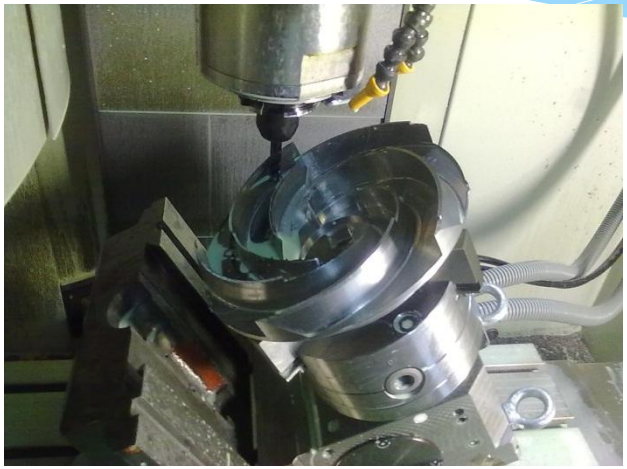




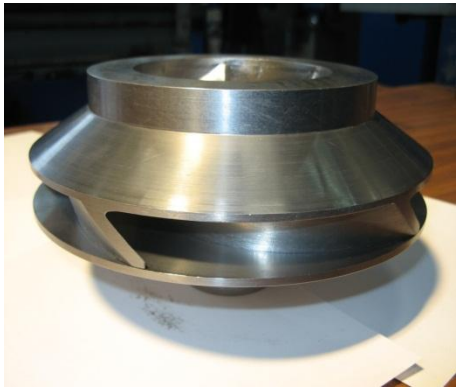
Fabricatia pieselor complexe

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Turnare sub vid si aplicatii TCM - Cluj

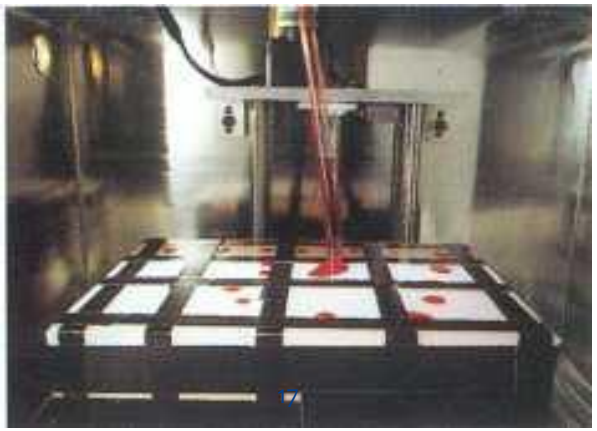
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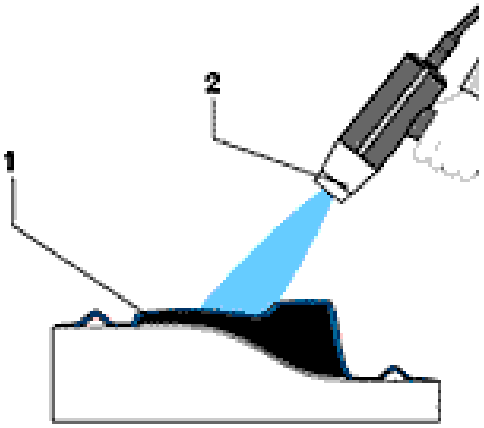






Pulverizare de metal topit si aplicatii / TCM - Cluj

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Turnarea rapida a metalelor si aplicatii / TCM - Cluj

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Fig.4. Casting unit, Indutherm VC 1000D, at TUCN



Fig.5. Aluminium cast parts made at TUCN



Fig.2. Silicon rubber mould, at TUCN

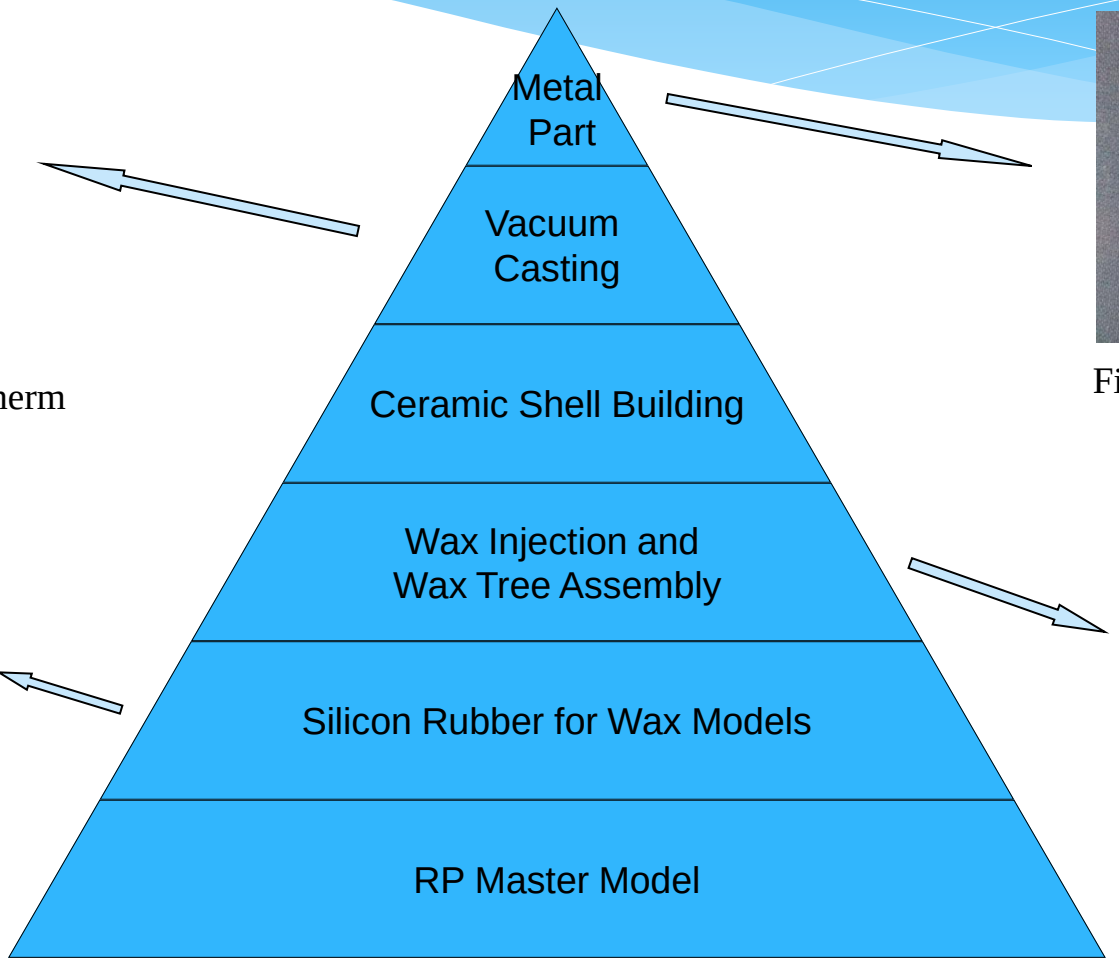


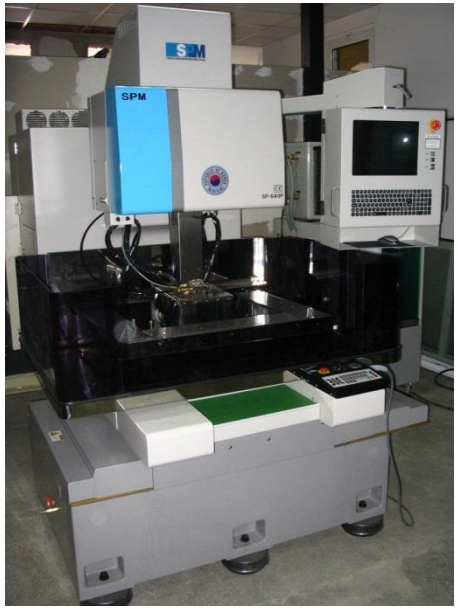


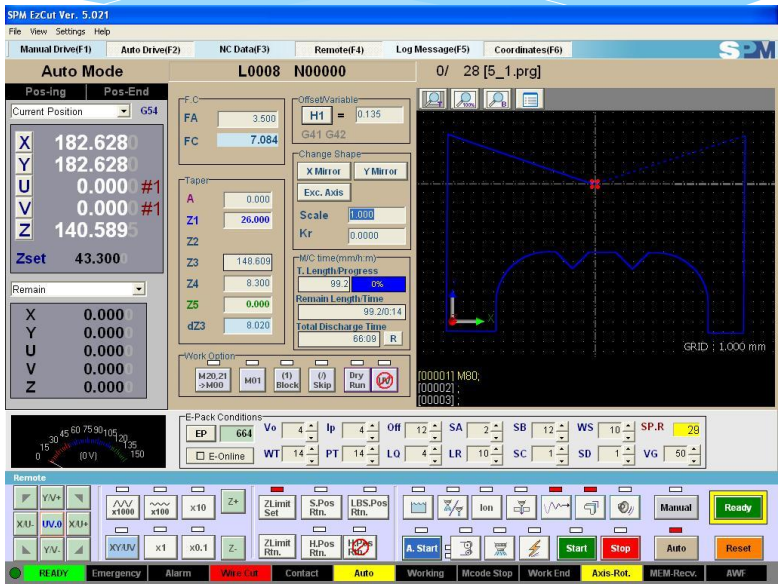
Fig.3. Wax tree set up made at TUCN

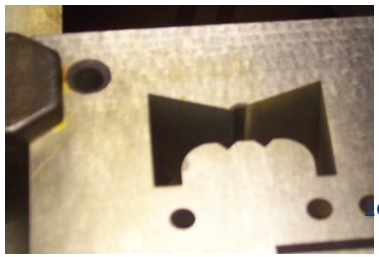
Taiere prin EDM cu fir – 5 axe CNC TCM - Cluj

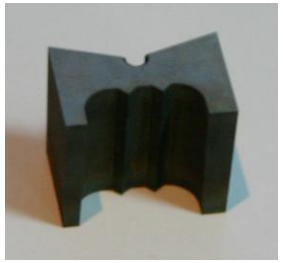
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Prelucrari cu jet de apa - Omax 2626 / TCM Cluj

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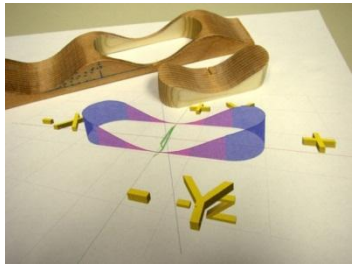








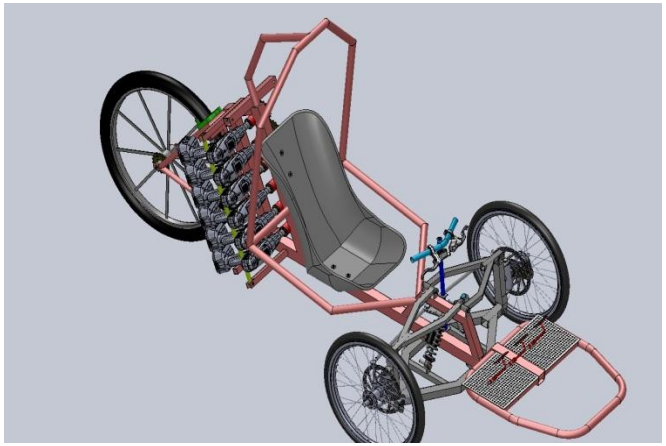




Proiecte ale studentilor TCM

Vehicul electric, TCM - Cluj

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F1 – Masina de Formula 1 asamblata la TCM Cluj

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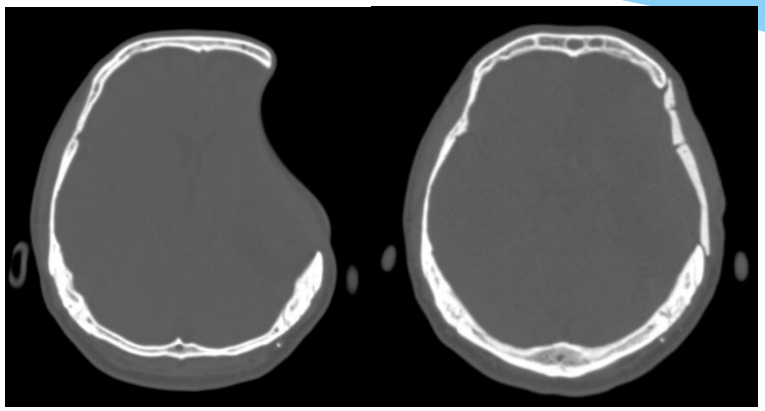


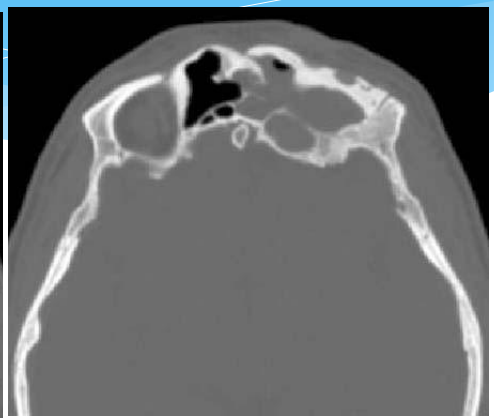
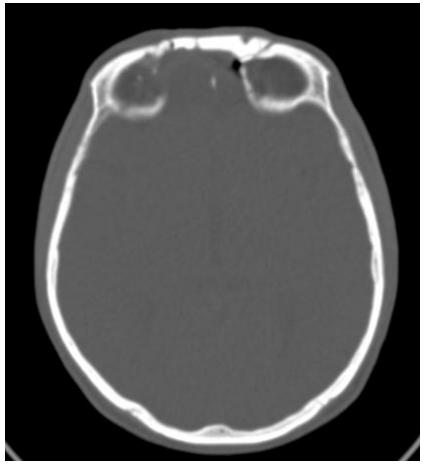
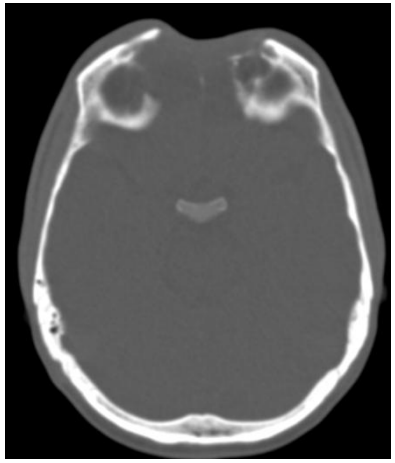
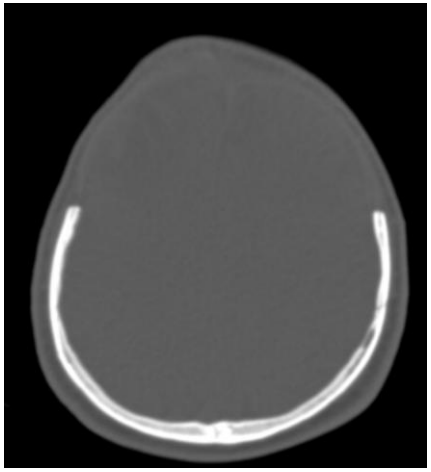
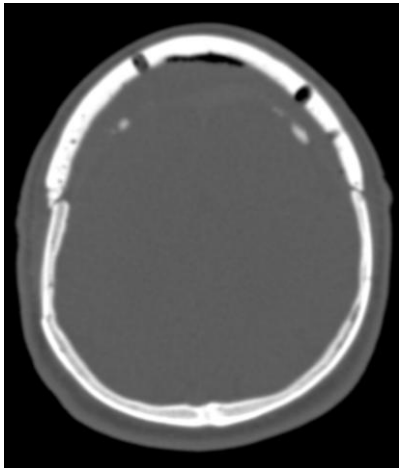


- http://www.youtube.com/watch?v=mcvfT21cJac
- http://stirileprotv.ro/stiri/ardeal/primul-monopost-de-formula-1-din-romania-a-fost-construit-la-cluj.html
- http://stiri.tvr.ro/romania-ar-putea-ajunge-in-formula-1-cu-o-masina_28992.html

Aplicatii medicale
Imagini CT

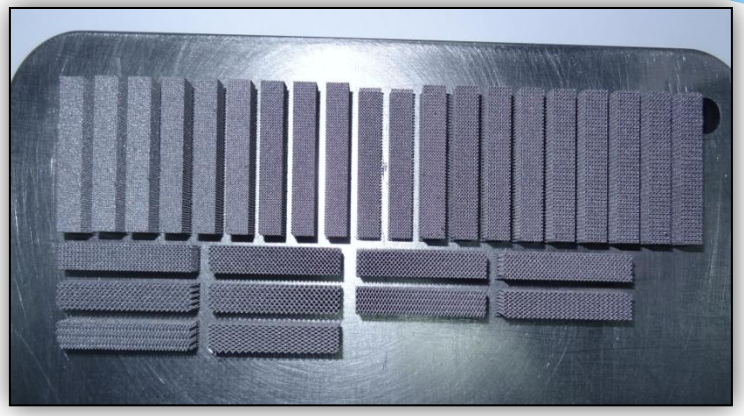
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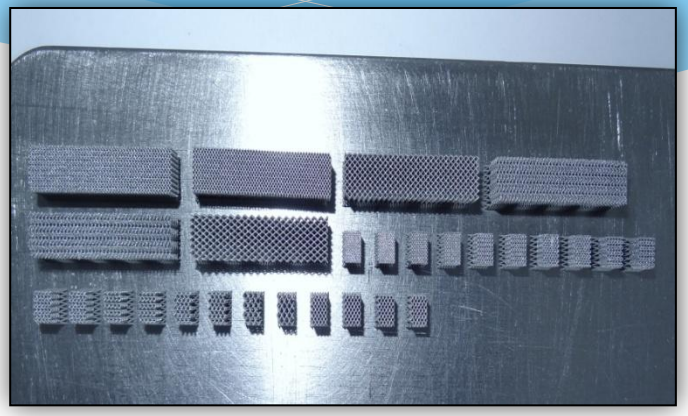


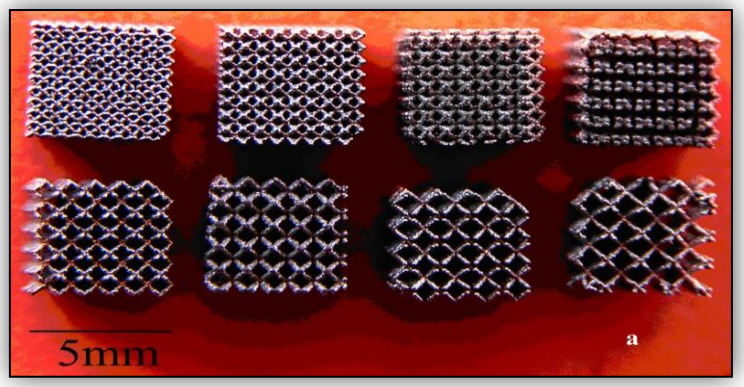






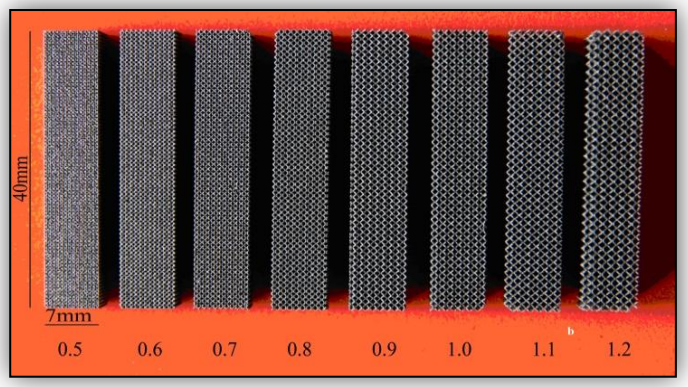
Cercetari experimentale Implanturi cu porozitate controlata (SLM)

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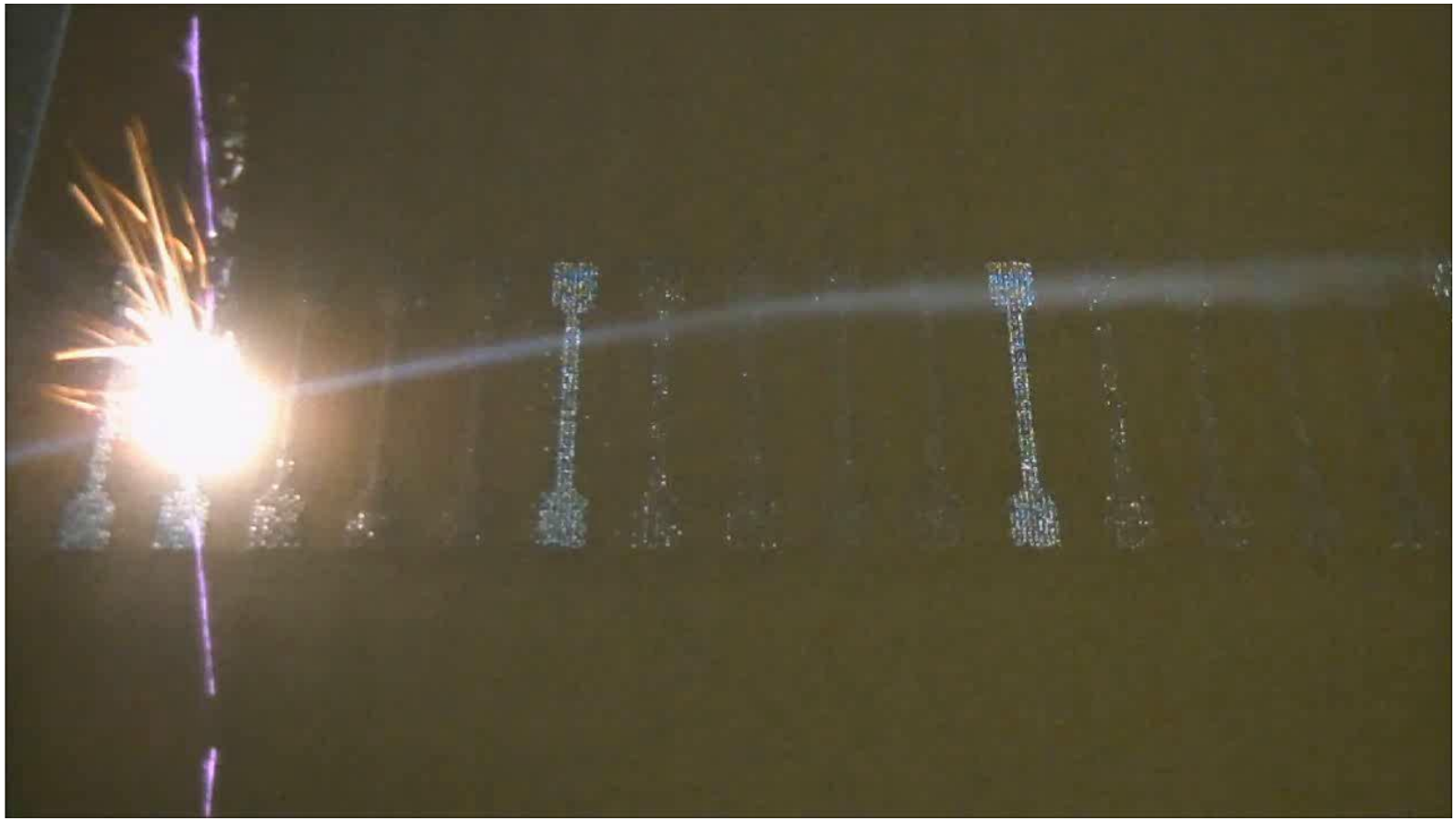








Controlul procesului SLM

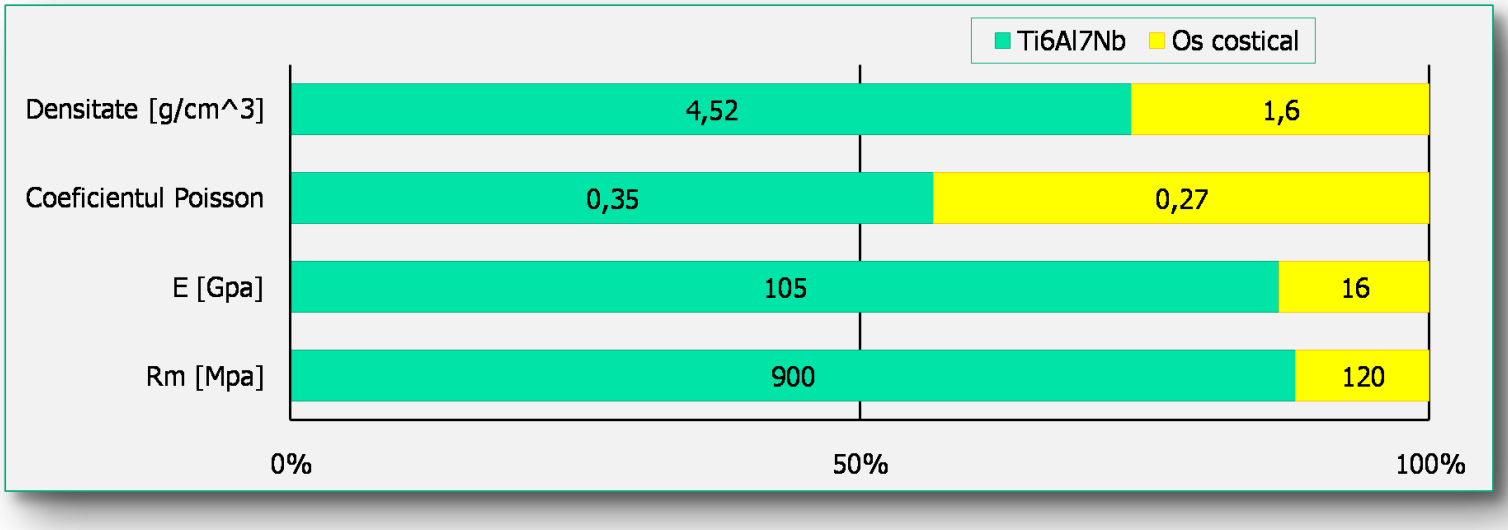


Comparatii ale caracteristicilor mecanice ale osului cortical, cu aliajul Ti6Al7Nb

* Ti6Al7Nb alloy – Characteristics

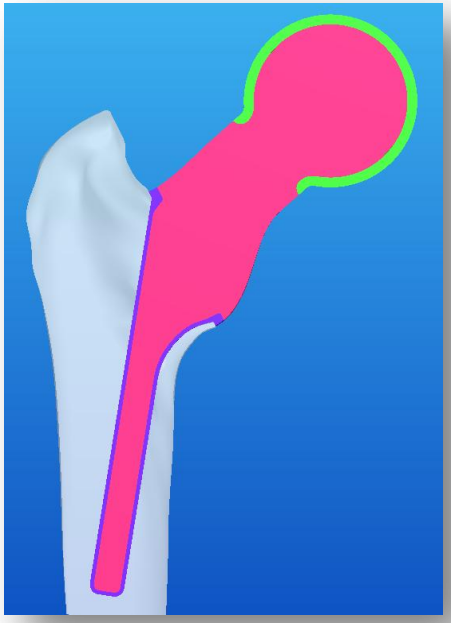
	Al	Nb	Ta	Fe	O	C	N	H	Ti
Min [%]	5,5	6,5	-	-	-	-	-	-	88,0
Max [%]	6,5	7,5	0,50	0,25	0,20	0,08	0,05	0,009	84,9

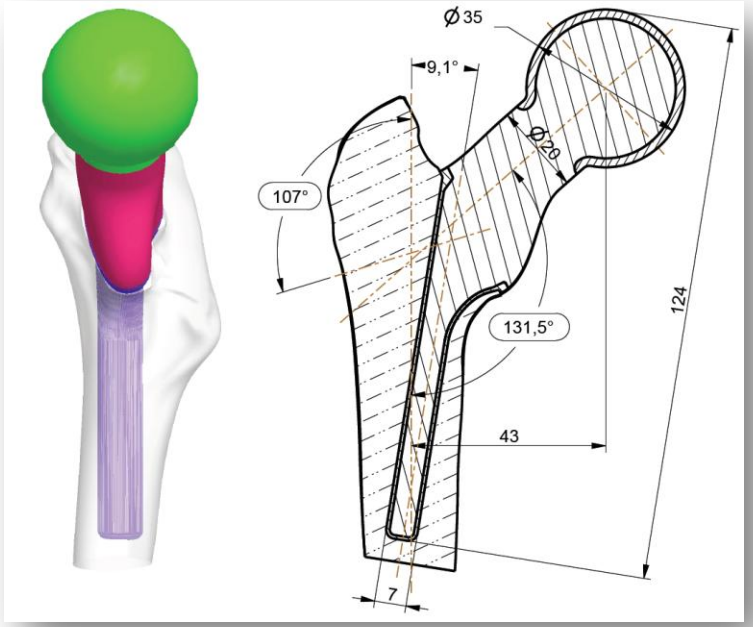
Caracteristica	T_t [°C]	T_β [°C]	Densitatea [g/cm³]	Rm [MPa]	$R_{P0,2}$ [Pa]	A [%]	E [GPa]	Coeficientul Poisson
Valoarea	1538-1649	1010±15	4,52	900	800	10	105	0.33-0.37



Endo-proteza cu structura multistrat

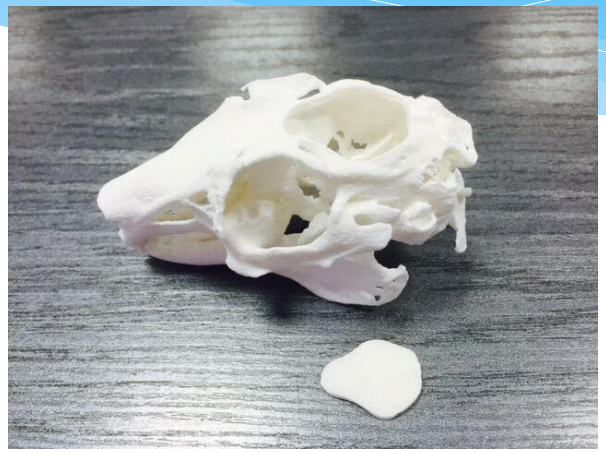
- **magenta – 50W, red – 70W, green – 100W**
- Solution with redesigned insert – multistructured endoprothesys
- Considered materials – structures made with 50W, 70 W and 100 W



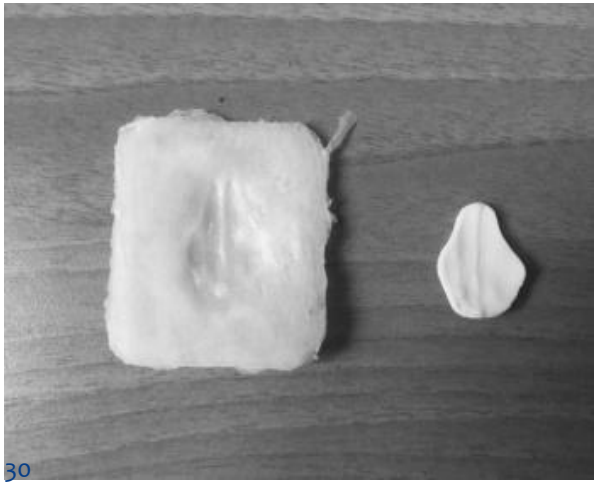


Modele master (personalizate), fabricate prin SLS





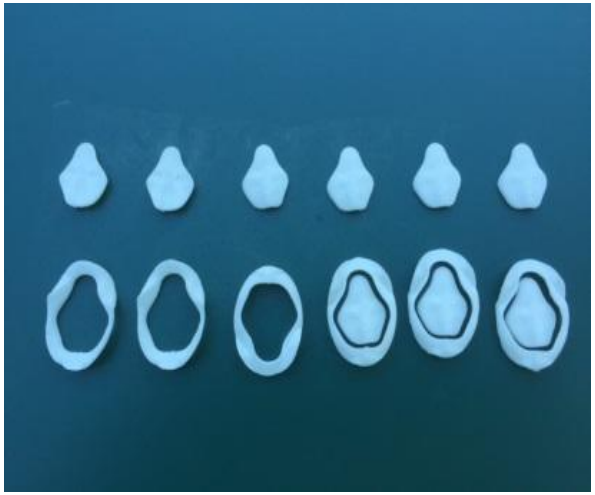




Sabloane chirurgicale, fabricate prin SLS

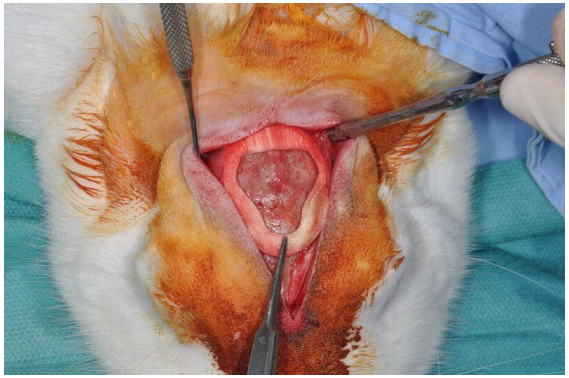
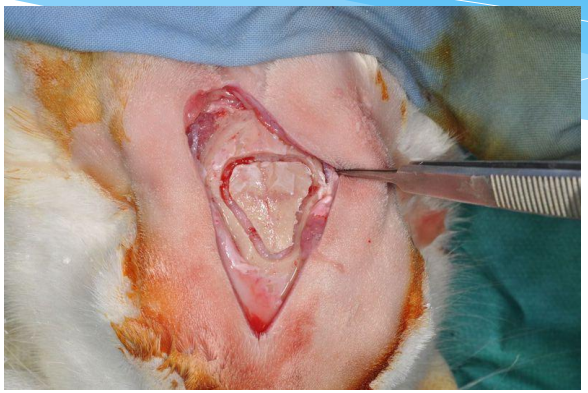


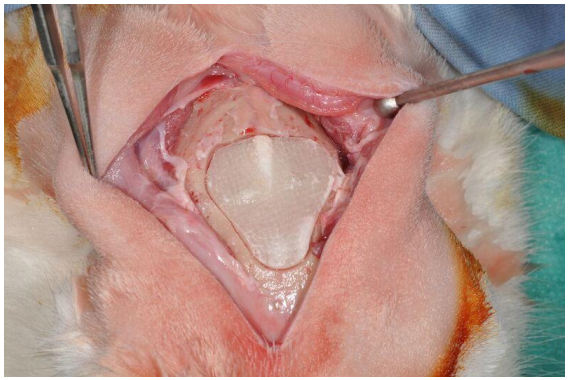
* The size of the cutting blade used by the surgeon, was taken into account

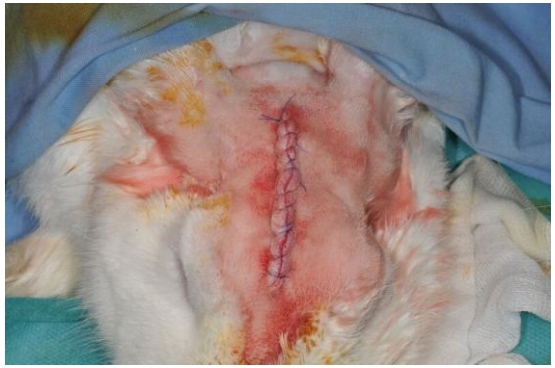




Teste in vivo, desfasurate in 2017





Va multumesc!

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