

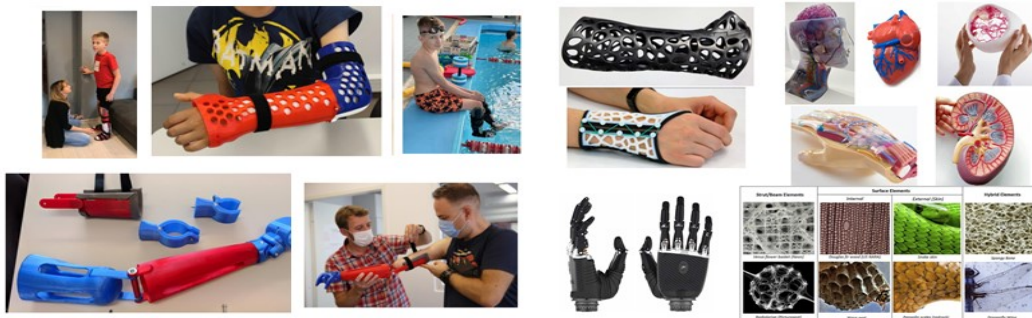
Activity Report – BRIGHT International Summer School (18th – 29th July 2022)

In the frame of the ERASMUS KA 226 BRIGHT Project, Juraj Dobrila University of Pula (Croatia) together with its partners from the BRIGHT project consortium hosted an international summer school in the field of 3D printing for medical applications between 18th and 29th July 2022. A total number of 60 participants coming from 10 European countries have registered to this event that was organized with the main aim of testing and experiencing the 3D virtual platform for medical applications which has been conceived by the BRIGHT consortium in 2022.

The event was hosted by Istrian Development Agency (IDA d.o.o), where course and workshops were held with the professors and students that attended to this event. Each day has been actively organized by students and professors coming from a specific institution of the BRIGHT consortium. Pictures were taken at the end of the day with specific flags of the organizing teams (Croatian, Polish, Romanian, Slovak and Serbian). This aspect was very positive since each participant felt that is actively engaged in the activities organized in the frame of BRIGHT summer school.



Professors coming from the BRIGHT consortium have shared their knowledge with the students, that had the possibility to follow the whole chain that it is needed when a medical product is required to be realized, starting from Computer Aided Design, continuing with Computer Aided Engineering, 3D printing and testing of the realized products (mechanical testing, quality control, etc).



The latest new trends in the field of smart materials, 3D printing technologies (including 3D bio-printing) but also modern testing procedures that are used to validate and implement the results in the medical domain, as well as the main challenges that exists in this field were provided as basic knowledge to the students.



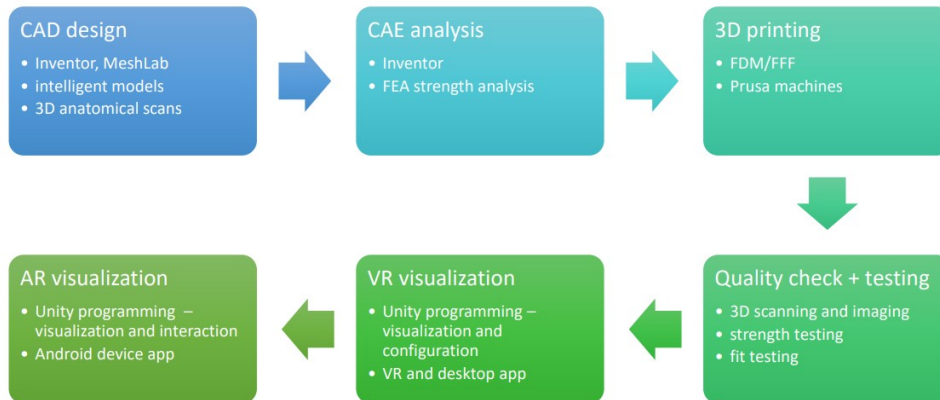
The courses that were provided to the students by the professors that delivered presentations at BRIGHT International 2022 summer school were very practical, real case studies being provided to the students in the first day of the summer school.

Case 1: bicycle prosthesis



Case 2: hand orthosis

COURSE OF WORK WITH THE CASES



The main aim of the BRIGHT International summer school was to have practical activities with the students in which they could experience different stages of the developing of a new medical product (real case studies), starting with CAD design (where students had the chance to come with improvements in terms of design, flexibility), CAE analysis, 3D printing and testing of the products (in the first week), as well as to develop VR/ AR applications (during the second week).

In these sense it can be mentioned that one important contribution had also the visiting of different companies from Croatia, like B M Plast (partner in the consortium of BRIGHT project).



Also during the BRIGHT International summer school, all participants had the chance to visit the METRIS institute, where in one afternoon, the students had also the possibility to experience the Mechanical testing procedures of medical products, but also material testing characterization that is done using specific equipment items (including several types of microscopes, like SEM or Optical Microscopes, etc).



Visiting of a Medical Hospital and Medical School in Pula (Croatia) was also very important in the BRIGHT International summer school, by the sharing experience point of view between engineers and surgeons (medical doctors). The participants to the summer school had the chance to better understand which are the main challenges that the doctors are facing / were facing in the pandemic period and how engineers can come with important solutions to support hospitals in this context.



All these activities have constituted one strong context and background for the participants to the BRIGHT summer school in relation with the products (real case studies) that they had to develop and realize them for this edition of summer school. Students were mixed in groups (coming from different countries), they had lot of brainstorming activities, they have received feedbacks from the experts that have attended to this edition of BRIGHT summer school (professors coming from BRIGHT consortium) and finally they came with very practical results in terms of CAD, CAE & 3D printing.



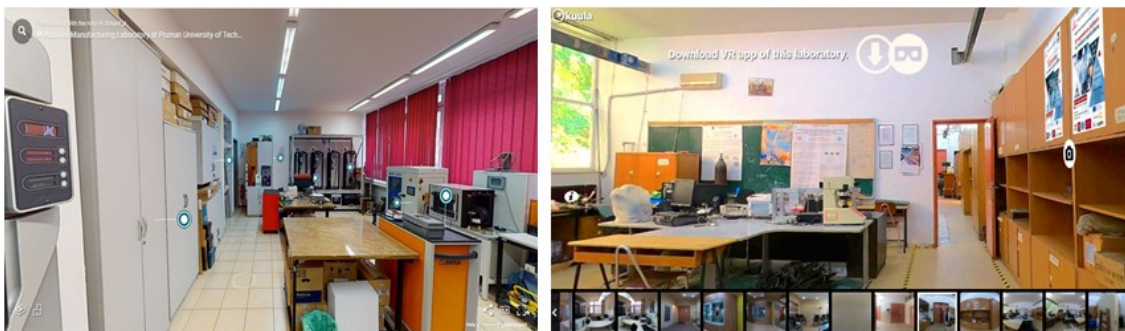
Students had the chance to realize the products finally by 3D printing and also to do testing and measurements from the dimensional (accuracy) point of view.



The students had also the chance to go through VR / AR programming and experiencing of such modern environments that are used mainly for training and teaching using Unity software and VR goggles.



This constitutes actually the base of the virtual platform that it is aimed to be realized by the BRIGHT consortium in the frame of the BRIGHT project. In this sense students were trained also on how to use the 360 photos and tagging using specific software like Kuula, where also elements of VR / AR are aimed to be introduced in the BRIGHT virtual laboratory platform for teaching and training purposes.



At the end of the BRIGHT International summer school, students have defended their final tests and they defended also their final presentations, having the chance to provide themselves feedbacks regarding their progress and their work / quality of the results they have achieved / challenges that they were facing / etc.



All students have been awarded in the end and were appreciated for their qualitative work and results they have achieved, all participants to this edition of BRIGHT International summer school receiving certificates with the Erasmus+ label signed in the end.





Preparing of new ERASMUS KA project proposal in the next academic year has also been discussed, since BRIGHT project is ending in February 2023. BRIGHT International summer school 2022 edition has been a real success and feedbacks expressed at the end by all participants to this event were very positive, so this is one of the main reasons why sustainable solutions in organizing next editions of BRIGHT International summer school events in the future in the frame of ERASMUS program have to be searched and exploited in the future at the level of BRIGHT consortium, that's for sure.

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Further details on the BRIGHT International Summer School – 2022 Edition and the activities of the BRIGHT consortium scheduled for the time interval 2021-2023 are provided on the Internet page of the ERASMUS KA 226 BRIGHT project: <https://bright-project.eu>