

Activity Report – EMERALD International Summer School (12th – 23th of September 2022)

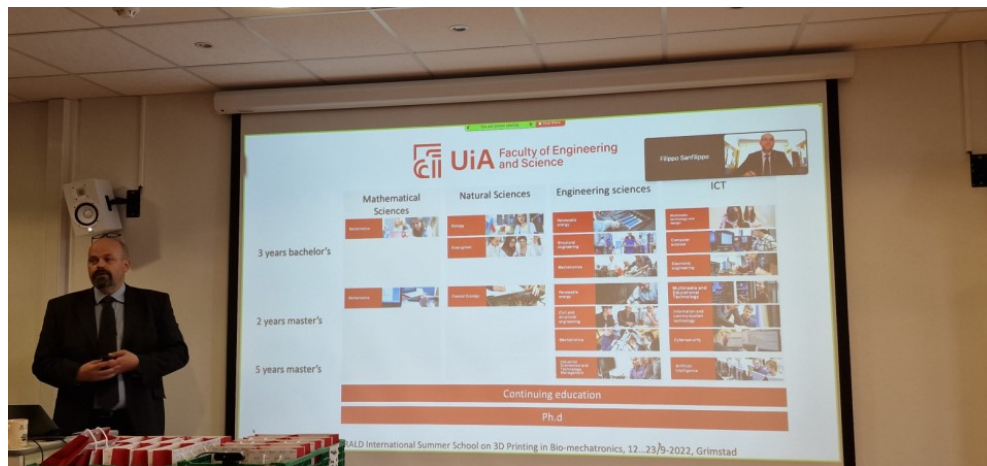
In the frame of the EMERALD 21-COP-0019 Project, financed from the Norwegian grants, at the University of Agder in Grimstad (Norway) it was organized an International Summer School event in the field of 3D printing for bio-mechatronics. Participants coming from the EMERALD project consortium (Technical University of Cluj-Napoca (Romania) – leading partner of the EMERALD project, Politehnica University of Bucharest (Romania), Poznan University of Technology (Poland) and BIZZCOM s.r.o. company from Slovakia), professors, researchers and students have participated to this very important event, which was organized with the main aim of finding the proper solutions from the constructive and manufacturing point of view in realizing medical products like orthoses, robotic arms, etc. destined to be used for people with special needs (amputated arms).

During the EMERALD International summer school, the participants to this event had the chance to attend to different lectures that were delivered by specialists (professors and researchers) coming from various domains, like Computer Aided Design, Computer Aided Engineering, 3D printing, Bio-mechatronics, Intelligent (smart) materials, Sensors and Actuators, Programming, Metrology, Mechanical Testing, VR/ AR programming, etc.



The lectures provided during the International Summer School were modern, very applicative and concrete, providing not only the basics regarding the bio-mechatronic systems as a whole, but they provided the necessary knowledge for the students so they were able to work in groups on the conceiving, designing, manufacturing, programming and testing the prototyping systems that were conceived especially for the people with special needs.

One big plus regarding this event consisted the presence at the opening event of Mr. Ambassador of Romania in Norway – his excellence Mr. Cristian Bădescu, who provided his support for extending the bi-lateral cooperation between Romania and Norway countries on future common projects financed by the Norwegian grants and EU (institutional, educational and research grants). In the same time one very big support has been offered during the event by Prof.dr.eng Michael Rygaard Hansen, (dean of the Faculty of Engineering Sciences – University of Agder – Grimstad - Norway) – with whom there were discussed and established different concrete ways through which the students of the EMERALD consortium partners will be able to get future support regarding the possibility of completing their BSc, MSc or PhD thesis in supervision / co-supervision regime with the support of the University of Agder from Grimstad Norway.



Also it is to be mentioned the interest, support and presence on this event of one of the most prestigious company in Norway which is activating in the field of 3D printing and mechatronics, like Blatchford Ortopedi A.S. from Norway, who has organized a full day during this event in which they were actively involved in finding potential way of cooperation with the Universities involved in the EMERALD consortium for testing new products, innovating and extending the area of the mutual research in the future in cooperation with EMERALD partners.





Possibilities of developing different common educational and research projects financed by the Norwegian or EU grants by the EMERALD consortium partners, in cooperation with the University of Agder and Blatchford Ortopedi A.S. company from Norway have also been discussed for the future. One first step was made already in the sense that the Blatchford company from Norway will be part of the Multiplier event organized in the field of 3D printing for bio-mechatronics at the Technical University of Cluj-Napoca within the EMERALD project in February 2023, where also other prestigious companies that are activating in the field of 3D printing / mechatronics like Admasys, Leycom, NU Technologies from Romania, Omni 3D from Poland, Materialise from Belgium, SLM Solutions GmbH from Germany has confirmed their intention in participating to this event.



All these activities and other similar activities (like visiting of the University of Agder laboratories / using of the provided logistics with the support of the University of Agder) have constituted the premises for the participants to the EMERALD summer school to experience and get familiar with all the challenges that one bio-mechatronic system is assuming to, starting from the Computer Aided Design stage, continuing with the Computer Aided Engineering stage, 3D printing, programming (Arduino programming, sensors and actuators programming, etc.) and finalizing with all tests imposed by such systems that are developed in a very customized way for the patients (people with special needs).

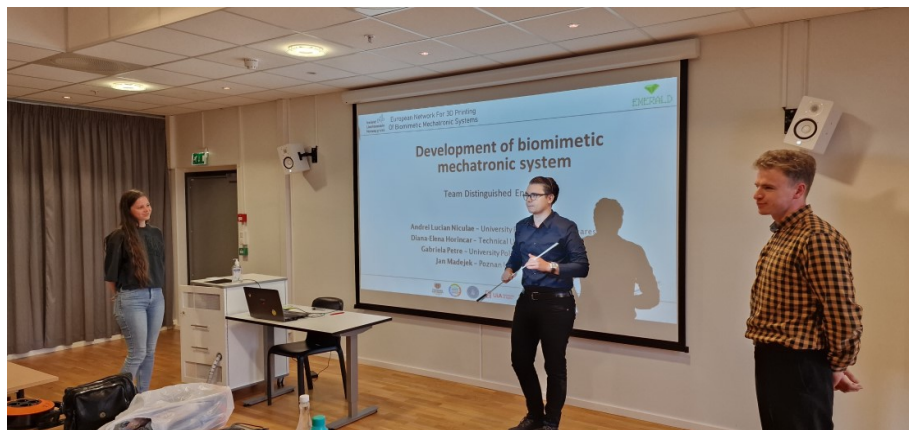


Students were working in groups (coming from different countries), having the possibility to experience in detail every stage of developing of a new bio-mechatronic system, to talk to the experts, to experience and to get feedbacks regarding their work at the end in terms of CAD, CAE, 3D printing, programming and testing.





At the end of the EMERALD International summer school, students have defended their final tests and final presentations, having the chance to receive feedbacks from the audience, questions, new ideas for improving their work in the future not only from the audience, but also from the companies that were actively involved during the summer school on the practical activities.



In sign of appreciating the qualitative work of the students and to appreciate their achievements after 2 weeks of hard and intensive work, all participants to this edition of the EMERALD International summer school have received certificates with the Norwegian grants label signed by the University of Agder – Grimstad – Norway in the end.

The final feedbacks received from the EMERALD participants to the International summer school 2022 edition were very positive, were very constructive and very consistent, emphasizing that the EMERALD International summer school organized at the University of Agder – Grimstad Norway was organized on high standard level in terms of course materials, presentations, etc.



All the recommendations provided by the participants in the questionnaires regarding the EMERALD International summer school 2022 edition will be very helpful in the organizing of the next edition of the EMERALD International Summer School in September 2023 on at least the same standard level as are the expectations, that's for sure.

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