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## **NEWS FROM THE MCAA**

**T**he fifth MCAA Conference and General Assembly (C & GA) took place on February 2<sup>nd</sup> and 3<sup>rd</sup>, 2018, in Leuven, Belgium. The host for this event is the **University of Leuven**. Highlights were the **MCAA Board election** and the range of **different sessions** on offers for all MCAA participants. The main areas of interest that have been covered during the two days were about **career development, innovation** and **societal challenges**. Participants were encouraged to be active contributors in poster presentations, short pitches and plenary talks.

**The MCAA Board Election** - A new MCAA Board has been elected: **Chair Mathew DiFranco, Vice-Chair Valentina Ferro** and **Mostafa Moonir Shawrav, Treasurer Bala Attili** and **Secretary Murat Gunes** will present together the Executive MCAA Board Committee and will continue the effort to fully utilize the potential of the organization.



## NEWS FROM THE CHAPTER

### **The Year of Involvement (by Mohammad Rezaei)**

The year 2018 has been so far an outstanding year for the Austrian chapter. In February, two members from the Austrian chapter board were promoted to serve at the MCAA executive committee. Dr. Matthew DiFranco (Past Chair – past advisor of Austrian chapter) was elected as the MCAA chair and Dr. Mostafa Moonir Shawrav (Past Chair – current advisor of Austrian chapter) was elected as the MCAA vice chair. A big congratulation to their success.

In the Austrian chapter, the new board, composed of Mohammad Rezaei (Chair), Jana Kemnitz (Vice-Chair), Zlatan (Secretary), Simona (public relation), and Mostafa Moonir Shawrav (Past Chair - Advisor) were elected at the chapter meeting in April to assure further development of the Chapter for two years.

MCA3C efforts for bidding Vienna as the next city to hold the MCAA general assembly successfully resulted in winning. The musical capital of the world has been selected to hold the next general assembly 2019. Since then, a task force including MCA3C members have been working intensively to assure successful planning and organizing the event. I would like to use this opportunity and invite all MCAA members to be a part of task force team and

contribute to organizing the GA as volunteers. Please send us an email containing your contact info and we will put you in the task force team.

For the year 2018, MCA3C board is working hard to offer a range of training and career development opportunities to its members, as well as to foster networking among Members for both research and professional collaboration.

To enhance personal and career development of our members, MCA3C would like to support financially the MCA3C members to take part in the online trainings based on their needs and interests throughout popular platforms such as Coursera or Edx. This will be done at the end of the training by either reimbursing the training and certificate fees of the online trainings up to 100€ per member or giving Coursera vouchers.

In addition to our biannual chapter meetings in spring and autumn, we are organizing informal social events in various cities throughout the year. For more info on our next social event, visit the following link:

<https://goo.gl/forms/oJbsmHd0rTOTfqav1>

Finally, let us name the year 2018 for the MCA3C as the "Year of Involvement". Therefore, we invite all MCAA Members to become more active in their local chapters. The success and growth of MCAA chapters depends on member involvement at every level!

The MCA3C Board would like to thank the current and past MCAA executive committee, board and contractor for their continued support and encouragement.

Warm wishes,  
Mohammad  
MCA3C Chair



*Spring 2018 Chapter Meeting, TU Graz*

## MEMBERS' CORNER

### MSC ZLATAN AJANOVIĆ

Zlatan Ajanovic was born in Sarajevo, Bosnia, and Herzegovina, on May 18, 1989. He holds a Master of Electrical engineering from the University of Sarajevo, Bosnia, and Herzegovina. He started a career in automotive in 2011, with specialized education in Prevent School of Automotive. Afterward, he was working in a Prevent Group, Bosnia, and Herzegovina on a



project of establishing a new production process and a research project utilizing machine vision in product quality management. During 2014 and 2015, he was working in AVL List, Austria on a research project in the field of control of hybrid electric vehicles, as his Master thesis. He is a Marie Curie Fellow within Virtual Vehicle, Austria and he is pursuing Ph.D. degree at Technical University Graz, Austria through the ITEAM project. He made several Guest visits to the Delft University of Technology and the University of Sarajevo. He is a member of IEEE and IFAC, where he is a member of Technical Committee on Intelligent Autonomous Vehicles. He published his work on major conferences such as IROS, received IFAC Young

Author Award and reviewed works for major journals such as Automatica, IEEE Robotics, and Automation Letters.

**Area of research interest:** His area of research interest includes Robotics (Motion Planning), Artificial Intelligence (Planning, Learning, and Multi-agent systems) and optimal control applied to automated driving and Transportation systems.

#### **Selected Publications:**

Ajanovic, Z., Lacevic, B., Shyrokau, B., Stolz, M., Horn, M., 2018 October. Search-based optimal motion planning for automated driving. In Intelligent Robots and Systems, 2018. IROS 2018. IEEE/RSJ International Conference on. IEEE. (Accepted)

Ajanovic, Z., Stolz, M., and Horn, M., 2018, June. A novel model-based heuristic for energy optimal motion planning for automated driving. Proceedings of the 15th IFAC Symposium on Control in Transportation Systems (CTS 2018). IFAC.

Ajanovic, Z., Lacevic, B., Stettinger, G., Watzenig, D., Horn, M., 2018 July. Safe learning-based optimal motion planning for automated driving. In Proceedings of the ICML/IJCAI/AAMAS 2018 Workshop on Planning and Learning (PAL-18).2018.

Ajanovic, Z., Stolz, M., and Horn, M., 2018. Energy-Efficient Driving in Dynamic Environment: Globally Optimal MPC-like Motion Planning Framework. In Advanced Microsystems for Automotive Applications 2017 (pp. 111-122). Springer, Cham.

Ajanovic, Z., Stolz, M., and Horn, M., 2017. Energy efficient driving in dynamic environment: considering other traffic participants and overtaking possibility. In Comprehensive Energy Management-Eco Routing & Velocity Profiles (pp. 61-80). Springer, Cham.

## The SELECTA ITN (by Simona Zajkoska)

SELECTA (Smart ELECTrodeposited Alloys for environmentally sustainable applications: from advanced protective coatings to micro/nano-robotic platforms) is a joint academic-industry and highly interdisciplinary Innovative Training Network founded by the European Union's Horizon 2020 research and innovation programme with the grant agreement No 642642. The focus of the projects lies on the "green" electrochemical synthesis and characterisation of metallic alloys with tuneable composition and microstructure. The subsequent application of the alloys as advanced protective coatings, micro/nano electromechanical systems (MEMS/NEMS) and innovative micro/nano-robotic platforms for environmental healing is an inherent part of the project.

With the increasing demand of the industry and limited availability of natural resources, there is a risk of reaching a point where technological advances will not be possible, due to the imbalance between the demand and the availability of the natural resources [\*]. For this reason, sustainable technological progress is becoming one of the major challenges. SELECTA tackles this problem by developing smart electrodeposited alloys that do not make use of scarce resources, neither employ highly hazardous chemicals. To achieve this goal, following restrictions have to be considered:

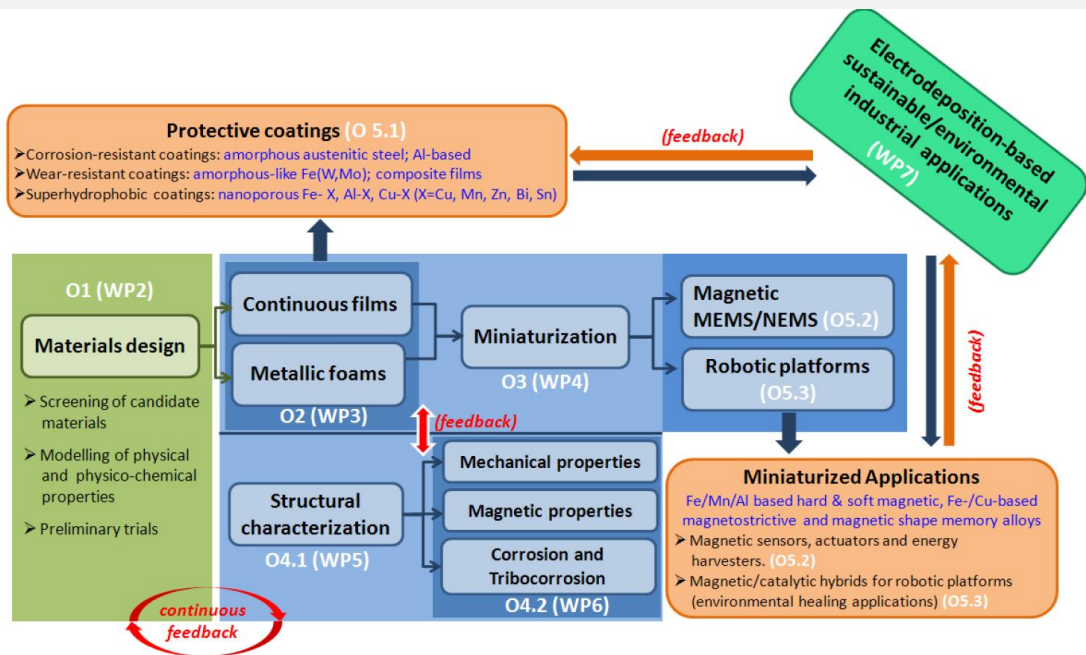
- I. Avoiding the use of rare-earths (RE) and noble metals (NM) in the electrodeposited alloy compositions. The lack of RE is indeed a major concern for the European Union (EU) ([http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical/index\\_en.htm](http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical/index_en.htm)).

- II. Avoiding the use of highly toxic metals and avoiding (or minimizing) the use of hazardous chemicals in the electrolytic baths, in particular those related to the “substances of high concern”, as stipulated by the European Chemicals Agency (<http://echa.europa.eu/web/guest/candidate-list-table>).
- III. Avoiding the use of cobalt or nickel because of environmental issues. Co(II) salts appear also as “substances of high concern”, while Ni is toxic and highly allergenic.
- IV. Minimizing the use of gallium and phosphorus. Gallium will become one of the scarcest resources in 2030 (<http://echa.europa.eu/web/guest/candidate-list-table>). Phosphorus is essential as nutrient for plants, animals and humans and is non-replaceable. European Commission (EC) launched a consultation on how to use phosphorus in a more sustainable way in 2013 ([http://europa.eu/rapid/press-release\\_IP-13-658\\_en.htm](http://europa.eu/rapid/press-release_IP-13-658_en.htm)).

SELECTA is trying to cover broad spectra of the material development and manufacturing. Starting from the material design (screening of the candidate material and modelling of the physical-chemical properties), through the production of the dense films and metallic foams to the miniaturization and production of the MEMS/NEMS devices and upscaling of the innovative protective coatings and miniaturized devices (**Error! Reference source not found.**). Materials mainly based on Fe-, Cu-, Al- will be developed for high wear and corrosion resistance (free from hard Cr and Cd), magnetic applications (magnetostrictive alloys, magnetic shape memory alloys and high saturation magnetization alloys) as well as environmental remediation and robotic applications (nanoporous coatings and foams with tuneable pore size).

This ITN brings together 9 Beneficiaries and 6 Partner Organizations, including 4 private companies. The project partners belong to 10 EU member states and to 2 non-member states (Switzerland and Serbia). In total, 15 PhD positions are founded by this ITN, out of them 2 are located in Austria at Hirtenberger Engineered Surfaces GmbH (HES, previously Happy Plating GmbH). The aim of the PhD projects, that are led by HES, is the development of sustainable electrolytes for electrodeposition of high wear and corrosion resistance alloys based on FeWP and for electrodeposition of high saturation magnetization Fe-Sn alloys as a possible replacement for nowadays used NiCoFe- alloys.

More information about SELECTA can be found on <http://selecta-etn.eu/project> and on <https://www.facebook.com/selecta2015/>.



An overview of the SELECTA-ITN research structure indicating all project objectives (O) and work packages (WP).

[\*] W.C. Clark, N. M. Dickson, PNAS 100 (2003) 8059-8061

# UPCOMING EVENTS IN 2018

Join us at the next planned Chapter events!

## Social Events in all Major Cities

VIENNA – Friday August 24, 2018 at 5:30 PM ; Registration Deadline: August 23  
7stern Bräu - Siebensterngasse 19, 1070 Wien (drinks will be provided by MCA<sup>3</sup>C)  
Contact Person: Jana Kemnitz (0664/2796148 or [j.kemnitz@outlook.com](mailto:j.kemnitz@outlook.com))

LINZ - Friday August 31, 2018 at 16:30 PM; Registration Deadline: August 30  
Minigolf Freinberg, Freinbergstraße 49, 4020 Linz (Minigolf fee and drinks will be provided by MCA<sup>3</sup>C)  
Contact Person: Mohammad Rezaei (0699/17840626 or [mohammad.rezaei@jku.at](mailto:mohammad.rezaei@jku.at))

GRAZ - Friday August 13, 2018 at 18:00 PM; Registration Deadline: August 12  
Brot & Spiele, Mariahilferstraße 17, 8020 Graz (Billard and drinks will be provided by MCA<sup>3</sup>C)  
Contact Person: Zlatan Ajanovic (0650/7404026 or [ajanovic.zlatan@gmail.com](mailto:ajanovic.zlatan@gmail.com))

[Registration here!](#)

Chapter **Autumn Annual Meeting** in Vienna.  
Details TBA  
Registration required.

## MCA<sup>3</sup>C - Marie Curie Alumni Association Austrian Chapter

[austria.chapter@mariecuriealumni.eu](mailto:austria.chapter@mariecuriealumni.eu)

<https://www.mariecuriealumni.eu/groups/mcaa-austrian-chapter-mca3c>



The MCA<sup>3</sup>C is part of the [Marie Curie Alumni Association](#). We encourage local networking and support members' career development. If you are still not a member of MCAA or MCA<sup>3</sup>C, you can [sign up now](#). Membership is open to all MCAA current fellows and alumni and is free of cost.

If you prefer not to receive our Newsletter in the future, please send us an e-mail with the heading "[unsubscribe to Newsletter](#)."

Design: Clara Gomes-Koban

Content: Mohammad Rezaei, Jana Kemnitz, Zlatan Ajanovic, Simona Zajkoska