



CAETS



EDITOR-IN-CHIEF'S WORD

Dear readers,

With the completion of the present HATZ Administration's mandate, this second issue for 2022 also marks the end of the Editorial Council's mandate for our long-running bulletin Engineering Power.

Since 2016, the Editorial Council, which includes Prof. Vladimir Andročec, Ph.D, Prof. Zdravko Terze, Ph.D., Prof. Slavko Krajcar, Ph.D., and Prof. Vladimir Mrša, Ph.D., has been offering an overview of our members' scientific-professional achievements to the content of Engineering Power as a guest editor of a specific number, ensuring that as many of our members as possible are active in the Academy's activity and on this level.

The guest editor of this issue is our distinguished member, Prof. Emer. Nedjeljko Perić, Ph.D., who is known as a promoter of cooperation between science and business. He demonstrated the achievements of five companies focused on the development of new technologies, which are on the rise globally and are visible in our country.

Editor-in-Chief
Vladimir Andročec



EDITOR'S WORD

Dear readers,

The Croatian Academy of Engineering is always pleased to report on collaborations between academic institutions and the innovative industry sector.

To this end, in this edition of HATZ bulletin Engineering Power, we focus on Croatian start-up ecosystem and present four successful companies whose business activities are inextricably linked to technological advancements in their respective niches.

Professor Emeritus Nedjeljko Perić, Innovation Centre Nikola Tesla and University of Zagreb Faculty of Electrical Engineering and Computing, and Full Member of the Academy, participates as a guest editor.

I am confident that you will enjoy reading the presented contributions.

Editor
Zdravko Terze



FOREWORD

Five papers on the evolution of Croatia's start-up ecosystem have been chosen for publication in this edition of Engineering Power. Although the establishment and development of start-ups in Croatia do not have a long history, there is a significant tendency in their development. It is expected that the new wave of digitization of the Croatian industry would accelerate the development of new business models such as start-ups.

The first paper presents a young drone solution company - AIR-RMLD, which is specialized in Drone Flying and Drone Development. Its primary focus is airborne industrial gas-pipeline inspection but has developed into a drone solution company that develops or operates practically anything that flies without a pilot.

The second paper describes the FIVE company, a digital design, development, and growth marketing agency. Their primary goal is to solve essential business problems and produce results through end-to-end product design from fuzzy ideas through launch and iteration. They enable data-driven decisions that benefit clients - global companies in finance, media, publishing, NGOs, pharmaceuticals, and other global marketplaces. FIVE has been a member of the international Endava software group since 2021.

The third paper presents H2O Robotics, a SME company established in 2017. Corporate R&D focuses on marine technologies, autonomous vehicles, and applications. To promote its own innovations, the company was very successful on EU Horizon calls for proposals, and *APad – a smaller, lighter, smarter autonomous marine surface vehicle* was funded in 2017. The project intended to turn an autonomous drone/robot into a commercially attractive, sustainable, and innovative product that would be highly competitive in global markets.

The title of the fourth paper is *Crossing the Innovation Valley of Death through the Venture Builder Model*. A Venture Builder concept could be one feasible way to bridge the valley of death. This model is a novel approach that is essentially a start-up that builds deep-tech start-ups using its own ideas while focusing on resource sharing among its partners. Venture Builders leverage their extensive network consisting of different partners, experts, and seasoned entrepreneurs to share their capital, skills, and market expertise with the participating ventures, resulting in a perfect innovation ecosystem. When it comes to the commercialization of innovations and the development of deep-tech ventures, collaboration between academia and industry is essential from the get-go.

The fifth paper describes Romb Technologies, an academic spin-off company focusing on commercializing autonomous navigation technologies in the logistics sector. Romb Technologies offers a complete software suite for automated material handling, from map-building and localization to layout planning and path following. As a newly founded company with strong academic ties, Romb Technologies invests a significant portion of its resources in R&D, developing rich visual perception modules, powered by deep learning, which will endow the vehicles with a semantic understanding of their environment and open up new use-cases for AGVs.

Guest-Editor

Nedjeljko Perić, Innovation Centre Nikola Tesla, and University of Zagreb, Faculty of Electrical Engineering and Computing