# 6th International Exhibition INVENTCOR

## 3-5 April 2025 – Deva, Romania

| EXHIBITION REGISTRATION FORM | |
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| **INTERNATIONAL EXHIBITION INVENTCOR**<br><br>Deva, Nucilor street, no. 8, zip code 330069<br>Hunedoara county, Romania<br>Tel.: +40729304129<br><br>inventcordeva@gmail.com<br>https://fb.me/e/1Rqpq94QU<br>https://www.facebook.com/CorneliuGroup/ | **REGISTRATION DEADLINE & FEE**<br><br>**01.02.2025** confirmation of participation (number of inventions, projects, etc.)<br><br>**15.02.2025** **registration deadline** sending the registration form and the poster/s<br><br>The participation fee is 100€/project or invention and the transport fees depending on the country |

The **International Exhibition INVENTCOR** will be organized in a hybrid format (on site & online) at the Cultural Center „Drăgan Muntean" from Deva city.
The registration form (in WORD) and the poster (in PPT) will be sent to the following email **inventcordeva@gmail.com**

## Section 1 – Contact information

**Name of the institution / Exhibitor's name:** CorneliuGroup association
**Address:** Nucilor street, no. 8
**Post code:** 330069 **City:** Deva **Country:** Romania
**Telephone:** +40729304129 **Email:** corneliugroup@gmail.com

**Total number of inventions / projects** submitted: 2

## Section 2 - Invention / Project

(If the same institution or private inventor has several inventions / projects, only section 2 will be multiplied for each one)

**Title: DRIFT super-aspirating air filter**
**Patent/project number:** patent no. 125034/30.07.2013.
**Author/s:** Corneliu Birtok Baneasa
**Institution:** Politehnica University of Timisoara, Faculty of Engineering Hunedoara
**Category** (choose from **Section 3** the category to which the invention/project belongs): D
**Description**: DRIFT or multifunctional super-aspirated air filters are dedicate for Drift competition cars. In addition to the main air filtration task, the DRIFT super-aspirating air filters perform the following functions: captures air, increase the speed air flow, pre-cool the air.
**State of development** (product, prototype, concept, virtual idea, scientific paper, research project, student project, PhD thesis, laboratory): product
**Contact:** www.corneliugroup.ro corneliugroup@gmail.com +40729304129
**Presentation link:** https://www.youtube.com/watch?v=xRBt4u_COco

## Section 3 - InventCor categories:

**A** - Energy, Protection of the environment, Biotechnology; **B** - Nanotechnology, Advanced materials, Metallurgy, Civil engineering; **C** - Computer sciences, Electronics and Electrical engineering; **D** - Automotive, Space science, Aviation, Ships, Mechanics; **E** - Teaching methods, Books, History and Cultural studies; **F** - Medicine, Paramedical, Pharmacy, Cosmetics, Hygiene; **G** - Agriculture, Veterinary medicine; **H** - Foods, Drinks, Restaurants, Hotels & Spa; **I** - Textiles, Clothing, Fashion, Handmade; **J** - Kids Corner, Games, Toys, Sports, Outdoor activities; **K** - Innovative ART, Music, Video, Photography, Publicity

**Title: POSSIBILITIES OF RECYCLING Lithium-ion ELECTRIC VEHICLES BATTERIES**
**Patent/project number:** PhD thesis
**Author/s:** RUS Ioan Alexandru; Mentors: NICOLAE Eugen-Viorel, BIRTOK-BANEASA Corneliu
**Institution:** University of Pitesti, Faculty of Mechanics and Technology; Politehnica University of Timisoara, Faculty of Engineering Hunedoara
**Category:** D
**Description:** Energy storage systems, usually batteries, are essential for all-electric vehicles, plug-in hybrid electric vehicles (PHEVs), and hybrid electric vehicles (HEVs). Lithium-ion batteries are currently used in most portable consumer electronics such as cell phones and laptops because of their high energy per unit mass relative to other electrical energy storage systems. Most components of lithium-ion batteries can be recycled, but the cost of material recovery remains a challenge for the industry. Most of today's all-electric vehicles and PHEVs use lithium-ion batteries, though the exact chemistry often varies from that of consumer electronics batteries. Research and development are ongoing to reduce their relatively high cost, extend their useful life, and address safety concerns in regard to overheating.
**State of development:** Doctoral research project
**Contact:** alecsandru.rus@yahoo.com
**Presentation link:** https://www.upit.ro/ro/academia-reorganizata/facultatea-de-mecanica-si-tehnologie-2



# Poster specifications

**The poster must be made in accordance with the InventCOR Model in PPT format and A1 size (59.4 x 84.1 cm).**

**The poster must contain the following elements of identity:**

**1 – Institution**

**2 - Category (top right)**

**3 - The title**

**4 – Patent/project number**

**5 – Author/s**

**6 – Description, pictures & graphics**

**7 - Contact**

**The registration form and the poster/s will be sent to the following email address inventcordeva@gmail.com**

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# YXV super-aspirated air filter

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**Author: Corneliu BIRTOK BANEASA**

**Mentor: Prof.Dr.Eng.Habil. Virginia Ana SOCALICI**

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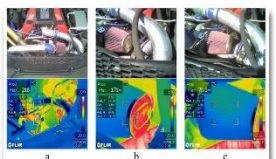
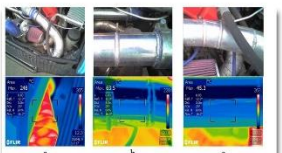
YXV is a super-aspirated air filter dedicated for IC engine. YXV reduce the thermal, the gas and dynamic losses by contributing to the increase of the filling degree of the engine cylinders.

This study presents the influence of the air filter location on the intake system temperature in the case of engines for drifting. The heat flow dispersion map at the engine compartment was determined for four different cases. The measurements were performed with a thermographic camera in the area of the air filter and intake manifold. The results obtained after the test contribute to the efficiency of the thermal management of the engine by reducing the temperature of the intake air.

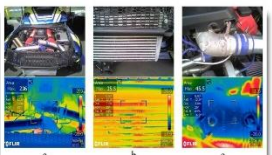
Four Drift engines with an engine displacement between 3.2l and 4.4l were considered for this study: I BMW E36; II Nissan Skyline r32; III BMW E30; IV BMW E36.



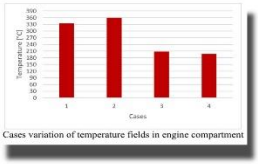
Air filter heat flow dispersion: a-air filter aria; b-frontal surface of the air filter; c-lateral surface of the air filter



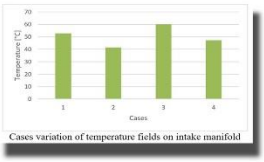
Pipes heat flow dispersion: a-exhaust pipe; b-intercooler inlet pipe c-intercooler outlet pipe



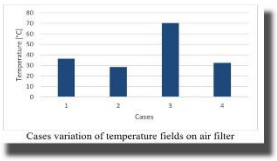
Intecooler heat flow dispersion: a-aria of intercooler pipes; b-surface of the intercooler; c-surface of the intake pipe



Cases variation of temperature fields in engine compartment



Cases variation of temperature fields on intake manifold



Cases variation of temperature fields on air filter

The relatively high values of the temperature recorded on the intake path in the case of the 4 engines studied, mainly case 3 is due to the organization of the supercharging group, the air filter location and the lack of protection in the filter area.

A solution in order to reduce the temperature on the intake system consists in the implementation of an Air by Corneliu system composed of the super-aspiring air filter YXV, dynamic system of air transfer (STDA) and integrated thermal deflector. The researches has shown that temperatures have been reduced by up to 50%.

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**Contact:** corneliugroup@gmail.com +40729304129

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