
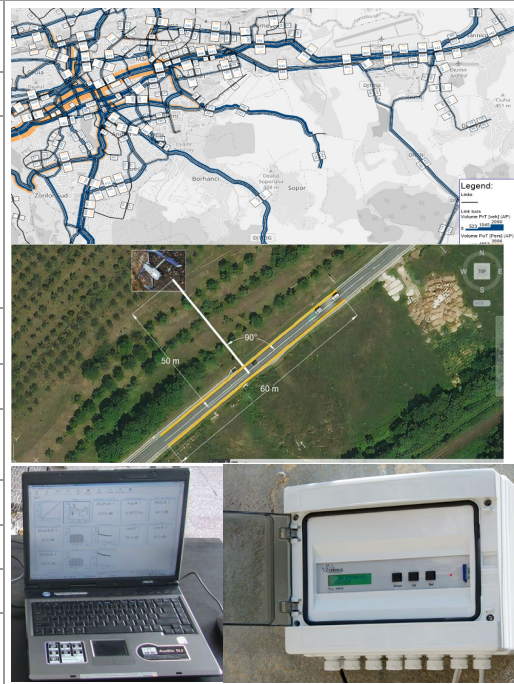


## Road Traffic and Traffic Security Research laboratory

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### Areas of expertise

#### Intelligent Transportation System

Bus line design: Urban area regeneration using new traffic approach: Intelligent traffic lights: pedestrian safety. The traffic network macroscopic simulation.

#### Increase urban mobility

Integrate system for Urban Mobility Plans

#### Research in the field of image processing for traffic scan

-Traffic drones: Image processing equipment

#### The noise produced by traffic conversion in electric energy

-Selective FFT noise conversion systems and energy storage devices

### Team

**Prof. Dr. Eng. Nicolae Filip**; Assoc. Prof. Dr. Eng. Teodora Deac; Assoc. Prof. dr. Eng Lucian Fehete Tutunaru, Lecturer dr. Eng. George Popescu, assistant dr. arh. Ioana Craciun, lecturer Dr. Eng. Ferent Gaspar  
PhD student Carmen Gheorghe, PhD student Georgiana Muresan.  
Extern member PhD. Marius Deac. PhD. Claudiu Golgot

### Representative projects

**JUST STREETS - Mobility justice for all: framing safer, healthier and happier streets**, HORIZON-MISS-2022-CIT-01, 2024-2027, <https://just-streets.eu>

Urban Mobility Plan for Cugir city

**Development of studies for optimizing the county public transport service, taking into account the principle of economic efficiency in service management and the efficient use of funds in Bistrița-Năsăud County, for the period 2024-2033, as well as the circulation schedules**, N-C-ST 6721/05.03.2024, 2024.

**Urban regeneration for Cluj Napoca city Nord area 2021-2022**

**ITF solution for hydrogen buses 2021**

**IT solution for public transport Baia Mare county 2019-2021**

**ITS study for electric buses 2019**

**Bus line design for Est-Wet axes in Cluj Napoca city 2018-2019**

**MOBURBIS CEEX project nr. X2-C34 (2007 – 2011)**

**Valorificarea potențialului energetic din undele de presiune de la motoarele cu ardere internă, prin conversie termodinamică și electrică** ,, cod CNCSIS 834 2009 - 2012

**Identificarea arealului de acoperire al aeroportului internațional Cluj-Napoca, 2012**

**Plan de mobilitate urbana pentru municipiul Bistrita Nasaud 2015**

**Plan de mobilitate urbana pentru orasul Cugir 2016**

**Regional public transport optimization county Bistrita Nasaud**

## Significant results

### The most representative publications of the past 5 years:

1. Filip N., Gheorghe C., Deac M., THE EFFECT OF DEDICATED BUS LANE IN A CITY CENTER, INGINERIA AUTOMOBILULUI, Issue 71, 2024.
2. Heller AV, Filip N, Deac T. STUDIES ON THE DEVELOPMENT OF A RELIABILITY DIAGNOSIS FOR AGRICULTURAL TRACTORS GEARBOXES. INMATEH-AGRICULTURAL ENGINEERING. DOI 10.35633/inmateh-71-75. <https://www.webofscience.com/wos/woscc/full-record/WOS:001165595900003>
3. Heller AV, Filip N., RESEARCH ON THE MEASUREMENT OF THE GEARBOX VIBRATIONS IN ORDER TO DETERMINE THE FREQUENCY RESPONSE, INGINERIA AUTOMOBILULUI, Issue 70, 2024.
4. Heller AV, Filip N. and Deac T., STUDIES ON THE DEVELOPMENT OF A RELIABILITY DIAGNOSIS FOR AGRICULTURAL TRACTORS GEARBOXES, INMATEH-AGRICULTURAL ENGINEERING, Vol. 71, Issue 3, Pp. 857-864, 2023.
5. Gheorghe C., Filip N. Image Processing Applied in Road Traffic Using a Quadcopter. 30TH SIAR INTERNATIONAL CONGRESS OF AUTOMOTIVE AND TRANSPORT ENGINEERING: SCIENCE AND MANAGEMENT OF AUTOMOTIVE AND TRANSPORTATION ENGINEERING. Page 297-303, DOI 10.1007/978-3-030-32564-0\_35. Published 2020.
6. Muresan GS., Gheorghe C., Filip N. Road Traffic Studies for Urban Development. 30TH SIAR INTERNATIONAL CONGRESS OF AUTOMOTIVE AND TRANSPORT ENGINEERING: SCIENCE AND MANAGEMENT OF AUTOMOTIVE AND TRANSPORTATION ENGINEERING. Page 304-311. DOI 10.1007/978-3-030-32564-0\_36. Published 2020.
7. Gheorghe C., Deac TA., Filip N. IMAGE PROCESSING TECHNIQUES USED IN SOIL MOISTURE ANALYSIS. INMATEH-AGRICULTURAL ENGINEERING. Volume 58 Issue 2 Page 147-154. DOI 10.35633/INMATEH-58-16. Published 2019.
8. Gheorghe C., Filip N. Research Regarding on Choosing Optimal Traffic Organization Using Ranking Criteria. Book Series. Proceedings in Automotive Engineering. Page 775-783. DOI 10.1007/978-3-319-94409-8\_90
9. Popescu V., Molea A., Moldovan M., Lopes P.M., Moldovan Mazilu A., Popescu G.L., „The Influence of Enzymatic Hydrolysis of Whey Proteins on the Properties of Gelatin-Whey Composite Hydrogels”, Materials, Vol. 14, Nr. 13, 06.2021, p. 3507, <https://doi.org/10.3390/ma14133507>;
10. Popescu G.L., Filip N., Dudescu M.C., Popescu V., „BIODEGRADABLE AGAR-AGAR FOILS WITH POSSIBLE USES IN AGRICULTURE. OBTAINING AND CHARACTERIZATION”, ISB-INMATEH AGRICULTURAL AND MECHANICAL ENGINEERING, Vol. 8, ISSN 2344 – 4126, 10.2019, p. 448-455; [https://isbinmateh.inma.ro/pdf/Volume\\_Symposium\\_2019.pdf](https://isbinmateh.inma.ro/pdf/Volume_Symposium_2019.pdf);
11. Popescu G.L., Filip N., Popescu V., “Research Aiming Simultaneously Recycling Of Waste Polyolefins By Pyrolysis, In Order To Obtain Some Fuels For Compression Ignition Engines”, Applied Mechanics and Materials, Vol. 822, Online: 2016-01-12, ISSN: 1662-7482, p. 235-242, <https://doi.org/10.4028/www.scientific.net/AMM.822.235>;
12. POPESCU G.L., FILIP N., MOLEA A., POPESCU V., “THE EFFECT OF USING PYROLYSIS OILS FROM POLYETHYLENE AND DIESEL ON THE POLLUTANT EMISSIONS FROM A SINGLE CYLINDER DIESEL ENGINE”, STUDIA UBB CHEMIA, Vol. 60(LX), Issue 4, December 2015, ISSN (print): 1224-7154, ISSN (online): 2065-9520, p. 273-288; [http://chem.ubbcluj.ro/~studiachemia/issues/chemia2006\\_2015/Chemia2015\\_4.pdf](http://chem.ubbcluj.ro/~studiachemia/issues/chemia2006_2015/Chemia2015_4.pdf);
13. Popescu G.L., Filip N., Popescu V., Molea A., “A comparison between the consumption of polyethylene pyrolysis oils and diesel to supply a generator powered by a single cylinder diesel engine”, International Journal of Engineering and Applied Sciences (IJEAS), Volume-2, Nr.-8, August 2015, ISSN: 2394-3661, p. 7-10; [https://www.ijeas.org/download\\_data/IJEAS0208003.pdf](https://www.ijeas.org/download_data/IJEAS0208003.pdf).
14. Deac, T., Fechete-Tutunaru, L., Gaspar, F., Environmental Impact of Sawdust Briquettes Use–Experimental Approach, Energy Procedia, Elsevier, 85 (2016) 178–183, ISSN 1876-6102; Indexată: ISI Web of Science, Scopus, Ebsco, etc.; Disponibilă la: <http://www.sciencedirect.com/science/article/pii/S1876610215029896>.
15. Gaspar, F., Deac, T., Fechete-Tutunaru, L., Moldovanu, D., Experimental Study on the Sun Tracking Ability of a Spherical Solar Collector, Energy Procedia, Elsevier, 85 (2016) 220-227, ISSN 1876-6102; Indexată: ISI Web of Science, Scopus, Ebsco, etc.; Disponibilă la: <http://www.sciencedirect.com/science/article/pii/S1876610215028921>
16. Porumb, B, Unguresan, P, Tutunaru, LF, Serban, A, Balan, MEENVIRO-YRC 2015 – BUCHAREST Book Series Energy Procedia Volume 85 Page 461-471 DOI 10.1016/j.egypro.2015.12.228 Published 2016.
  17. Fechete T.L., Filip N., s.a. INFLUENCE OF INPUT FLOW OVER GRAIN MILL EFFICIENCY UTILISATION. Book Series Actual Tasks on Agricultural Engineering-Zagreb. Volume 46. Page 439-446. Published 2018
  18. Crisan G.H., Filip N. BUSES FLEET MAINTENANCE OPTIMIZATION, USING COMPUTER SIMULATION METHODS ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING Volume 60 Issue 3 Page 417-426 Published 2017

### Significant solutions:

Buses line design with lights adaptive phases;  
Point to point vehicles speed determination;  
Car shape laser scanning for vehicles classification;  
Urban mobility plan for regional development;  
Traffic counter device.  
A I solution for traffic management

### National Patents:

Filip N. Dispozitiv pentru conversia zgomotului in energie electrica. Brevet nr 128582. 2019

Filip, N., Chiriciuc, M. Contor electronic trafic. Patent nr. 019017. 2011

**The offer addressed to the economic environment**

Research & development	Development of original solutions for traffic. Development of original algorithms for image processing Development of original algorithms for vehicles scan GES evaluation algorithm Drone for traffic survey in urban area
Consulting	Consulting, for urban mobility actions Consulting for buses fleet optimization Consulting in traffic safety Consulting in traffic studies development
Training	Traffic macroscopic parameters measurements; Vehicle speed detection. Noise conversion in electric energy GES evaluation in transportation field Drones pilot training