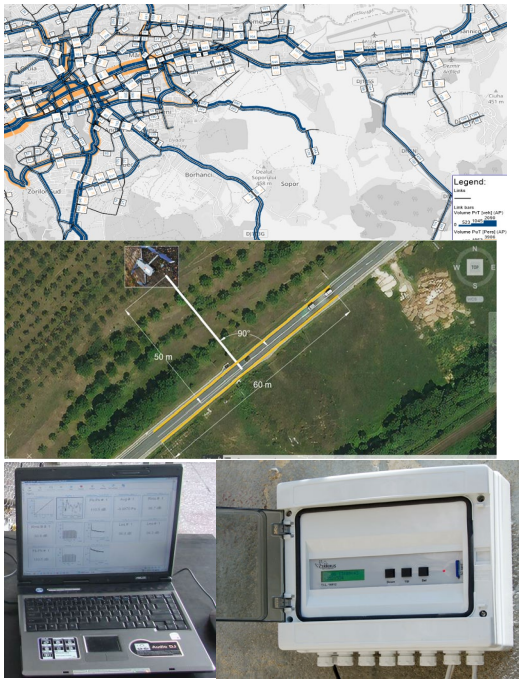



## Road Traffic and Traffic Security Research laboratory

### Contact details

Name	Road Traffic and Traffic Security Research laboratory	
Acronym	RTTS	
Logo		
Site		
Address	103-105 Muncii Street, D09d	
Faculty Department	Faculty of Automotive Engineering Mechatronics and Mechanics	
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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

#### 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 CNCIS 834 2009 - 2012

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

Plan de mobilitate urbană pentru municipiul Bistrița Năsăud 2015

Plan de mobilitate urbană pentru orașul Cugir 2016

IT solution for public transport Baia Mare city 2019-2021

Regional public transport optimization county Bistrița Năsăud

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

ITS study for electric buses 2019

ITF solution for hydrogen buses 2021

Urban regeneration for Cluj Napoca city Nord area 2021-2022

### Significant results

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

1. 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.

2. 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.
3. 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.**
4. Gheorghe C., **Filip N. Research Regarding on Choosing Optimal Traffic Organization Using Ranking Criteria. Book Series. Proceedings in Automotive Engineering. Page 775-783. DOI**
  - a. 10.1007/978-3-319-94409-8\_90
5. 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>;
6. 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);
7. 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>;
8. 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);
9. 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).
10. Deac, T., Fecete-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>.
11. Gaspar, F., Deac, T., Fecete-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>
12. 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.
  13. Fecete 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
  14. 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.

**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
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