



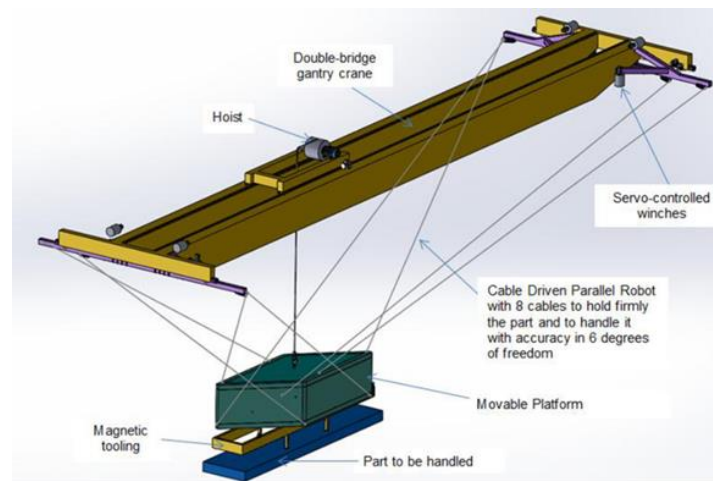
Make cities and human settlements inclusive, safe, resilient and sustainable

Ambassador of SDG 11:
Pr. Jamel NEJI
Professor at ENIT (Ecole Nationale d'Ingénieurs de Tunis)



The Tunis El Manar University: A city that wants to be sustainable in a city that we want to be sustainable.

Innovative solutions to alleviate urban flows. Transport of construction materials by airships.



The Eleventh International Conference
**Engineering Computational
Technology 2022**

23–25 August, 2022 | Montpellier, France

The Fourteenth International Conference
**Computational Structures
Technology 2022**

This approach makes it possible to limit the crossing of cities by semi-trailers, the origins of obvious pollution and traffic congestion. In this project, the team of Professor Jamel NEJI from Tunis El Manar University, in collaboration with the team of Professor Pierre JOLI from the University of Evry (Paris Saclay University) is working on the detailed analysis of the behavior of cables and their vibrations during loading.

This is to contribute to optimizing the precision and stability of the intelligent crane thus modeled. A communication entitled: "Nonlinear quasi-static modeling of cable structures including geometric constraints" was presented at the "Eleventh International Conference on Engineering Computational Technology 2022 & the Fourteenth International Conference on Computational Structures Technology 2022", in Montpellier in August 2022.

Use of drones to optimize fuel consumption and improve road traffic safety in cities.



The transition to safe and sustainable cities, and to best ensure the transport of people and goods, it is increasingly necessary to opt for fluid, safe and ecological circulation in urban areas. This project concerns and safety optimization of road traffic flows approaching intersections and level crossings in cities. The Professor Jamel NEJI from Tunis El Manar University, in collaboration with the team of Professor Lydie N

from the University of Evry (Université Paris Saclay) is working on introducing Unmanned Aerial Vehicles to optimize energy and safety in road traffic. A paper entitled: “System of Unmanned Aerial Vehicles for road traffic improvement” was presented at the “Integrated Communication, Navigation and Surveillance Conference (ICNS’23)”, IEEE, in Washington in April 2023. In this paper we aim at introducing Unmanned Aerial Vehicles (UAVs) to prevent accidents, considering a use case that is likely to happen in cities where vehicles are circulating and approaching an intersection like a pedestrian crossing, a railway crossing or a crossroad. A first UAV observes the scene from the top and will, in certain cases, notify a second UAV which will notify a car driver if its behavior is far from a reference profile, or with the infrastructure in the ultimate case. We analyze the interactions between the two UAVs (U2U communication) as well as between the UAV and the car driver (U2V communication) and between the UAV and infrastructure (U2I communication). Hence, we emphasize the benefits of using UAVs to enhance safety and reduce accident gravity rate.

Resilient cities and innovative construction.

RE-MED project: Application of innovation for the development of the circular economy for sustainable construction in the Mediterranean.





Tunis El Manar University is an associate member of the RE-MED project. The RE-MED project plans to test technologies to transform construction and demolition waste into resources in order to reduce environmental and health impacts due to failures in the management of this type of waste. The challenge in technological transfer is to initiate the generation of construction and demolition waste recycling channels in urban areas and to make them a lever for the societal, environmental and digital transition of Mediterranean countries. The project implements structured training, decision support tools (methodological guides, business models, sharing platform, environmental impact calculation, draft standards) and tests of new technologies (simulation modeling of road damage records). It forms the link between research stakeholders (universities, technicians and SMEs and industrialists (construction companies, quarries, etc.) involved in the chain of activity from construction and demolition waste (production, sorting, treatment, and valorization).

Professor Jamel NEJI participated in the seminar to present the first results in Tunis in April 2023.

Summer School: Sustainable cities, circular economy and new technologies.





Tunis El Manar University, through the National School of Engineering of Tunis, and in collaboration with the project, launched a “Summer School” which aims to transfer, between France, Tunisia, Italy and other countries, technologies and knowledge resulting from the results of research and innovation linked to the valorization of alternative materials from demolition. This approach mainly concerns urban areas with high urbanization and aims to involve socio-economic stakeholders, students and citizens. A week of training (from May 22 to 25, 2023) for masters and doctoral students was organized with Cerema on the subject of the circular economy in construction with the aim of sustainable cities. This training was inaugurated by Pr Moez CHAFRA, President of Tunis El Manar University, and called on trainers from the four partner countries (Cerema, UNIPA, ENIT, AUB). It included a mix of theoretical training, a half-day field visit and a half-day of study. Tunis El Manar University provided the necessary logistics with the aim of preparing the future generation for the challenges of ecological transition in Tunisia in the field of road construction.

International conference - Safe Cities: Security, inclusion and exchange.



**La Conférence internationale de la sécurité routière
Pré-événement Sommet de la Francophonie à Djerba
La Sécurité Routière Dans L'espace De La Francophonie
Sécurité, Inclusion Et Echanges
Du 03 au 06 Novembre 2022**

<p>PANEL 2 : Les avancées technologiques et l'intelligence pour une meilleure prévention. Président : Pr Jamel NEJI (ENIT – UTM) Modérateur : Tamime MEZOUE (Mairie du 16^{ème} Paris)</p> <ul style="list-style-type: none"> - Villes prudentes : Concept et difficultés de mise en œuvre - Zone 30 dans la Ville de Carthage : Optique, défis et enjeux - Aménagement et infrastructure routière - l'expérience du CEREMA - Technologies numériques et prévention 	<p>Anne LAVAUT (Prévention Routière française) Hayet BAYOUDH (Maire de Carthage) VARIN Berengere (CEREMA) BARBOUCH Moufida (Coach en technologies numériques)</p>	<p>PANEL 3 : La coopération internationale pour mieux prévenir dans l'espace francophone Président : Pr Moez CHAFRA (UTM) Modérateur : Maître Sylvestre PIAM (Université de Lorraine)</p> <ul style="list-style-type: none"> - L'encouragement à l'investissement en prévention routière - Quel rôle des données et de la recherche pour guider les stratégies de sensibilisation au Québec - Education : Les bonnes pratiques de la sécurité routière aux écoles primaires au Portugal - Gender lens in road safety - Expérience de l'Agence Wallonne de la sécurité routière en Belgique 	<p>Alina BURLACU (World Bank) Emmanuelle GAGNE (SAAQ – Québec) Alain AREAL (Direction générale de la PRP) Jasmina BUNEVSKA (University "St. Kliment Ohridski" – Bitola) Amira Kaddour (ATPR) (Carthage University)</p>
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Tunis El Manar University actively participated in the international road safety conference organized as a part of the Francophonie summit in Djerba in November 2022. One of the themes of this conference was safe cities. Everyone committed to working to establish safe cities by expanding the circle of speed limit 30 km/h, especially in front of schools, museums and theaters, to protect pedestrians. Professor Moez CHAFRA chaired the session on international cooperation to better prevent in the French-speaking world. Professor Jamel NEJI chaired the session on technological advances and intelligence for better prevention.

Youth Academy of Road Safety Ambassadors in safe cities





Youth Academy of Road Safety Ambassadors, in collaboration with young researchers from (LAMOED) Lab at the National School of Engineers in Tunisia, under the supervision of the Tunis El Manar University, on 15 and 16 december 2021 a scientific symposium entitled: “Towards smart cities in terms of flows, networks, infrastructure and traffic safety”.

A number of young researchers and specialized professors participated in the symposium, and the topics revolved around the following points:

- The need to further support scientific research to contribute to reducing the phenomenon of road accidents, especially serious ones that lead to the loss of human lives.
- Greater commitment to achieving the terms and objectives of the United Nations Global Decade of Action for Road Safety 2021-2030
- Involving young people in awareness-raising campaigns
- Benefiting from successful experiences in international laboratories of common interest
- The need to transfer experience from expert researchers, from professors to young people
- How to develop infrastructure to meet international traffic safety standards
- Means of modifying flows in networks to reduce traffic congestion

The symposium concluded under the supervision of Pr Moez CHAFRA, President of Tunis El Manar University.

