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EDITEUR
Université Mouloud MAMMERI de Tizi-Ouzou

BP 17 RP 15000, Tizi-Ouzou
Tél : 026 21 89 95 – 026 21 53 14 – 026 41 07 78
Fax : 026 21 29 68
Courriel : univ_tizi@mail.ummto.dz
Site internet : http://www.ummto.dz

Email: rrst@ummto.dz
http://revue.ummto.dz

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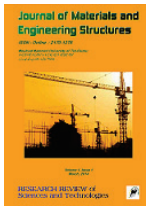

Journal of Materials and Engineering Structures

EDITORIAL

It is already three years since the launch of the first issue of the ***Journal of Materials and Engineering Structures (JMES)*** in 2014, with eleven (11) issues already published. We are preparing to start this fourth year with the publication of this twelfth issue, which contains five articles from four different countries (Egypt, Morocco, India and Nigeria).

The first article is devoted to the study the effect of stirrups as shear reinforcement in enhancing the punching strength of interior slab-column connections. The parameters of the study are the presence of shear reinforcement and stirrups concentration around the supporting column. The article shows that a good distribution of the stirrups on the critical perforation shear zone is an efficient solution to enhance not only the punching shear capacity but also the ductility of the connection.

The second paper deals with the dislocation nucleation phenomena in nanomaterials obtained by hetero-epitaxial growth of thin films on substrates having lattice mismatch defects. The article develops theoretical calculation on the principle of nucleating edge dislocations from free lateral surfaces by the theoretical calculation, using the method of image stress and energy study.

The third article presents a study the development of Self Compacting Concrete (SCC) using copper slag (CS) as fine aggregates with partial and full replacement of sand. The authors observed that the fluidity of SCC mixes was significantly enhanced with the increment of copper slag. The results of the tests showed that copper slag has the potential to replace sand in the range of 40-60% to obtain SCC with desirable fresh and strength properties. The use of copper slag (industrial waste) reduces the dosage of superplasticizer, consumption of natural resources which is a solution to decline the cost of concrete and boon for construction industry.

The fourth paper aims to assess geotechnical properties of uncemented/cemented clayey soil incorporated with waste crumb rubber. Authors concluded that unconfined compressive strength and split tensile strength of rubberized cemented clayey soil decreases with the increase of the percentage of crumb rubber whereas the axial, and diametral strain are found to be increased with the

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addition of crumb rubber up to 5% after that it starts to decrease. The CBR values (California Bearing Ratio), swelling pressure, and toughness index of uncemented/cemented clayey soil was significantly affected by incorporation of crumb rubber.

The fifth paper investigated the effect of fly ash, silica fume and metakaolin on the air permeability of Portland cement concrete at equal water/cement ratios and strengths. At equal water/cement ratios, while fly ash binary cement concretes have higher coefficients of air permeability than Portland cement concrete due to delayed pozzolanic reactivity, silica fume and metakaolin binary cement concretes have comparable coefficients with Portland cement concrete. The ternary cement concretes have coefficients comparable with that of Portland cement concrete. The author concluded that high volume fly ash would be required to increase the resistance of concrete to air permeability at equal strength.

During the first few years of **JMES** existence, we have tried to respect the regularity in the publication of the issues with a quarterly frequency, and by publishing for each issue a number of articles ranging from four to five with the goal of maintaining a certain level of scientific quality which reflects the ambitions and objectives that **JMES** has set itself.
At the moment when we are closing this twelfth issue, **JMES** is being evaluated by two of the most respectable scientific databases which are **DAOJ** (Directory of Open Access Journals - https://doaj.org) and **COMPENDEX** (https://www.elsevier.com/solutions/engineering-village/content/compendex). All this would not have been possible without the assistance and the help of expert colleagues, who have done us the honor of evaluating the numerous papers submitted to the **JMES** during its first three years of existence. We are also taking advantage of this opportunity to renew our confidence in the members of the Reading Committee for the next years.

The journal **JMES** which is yours continues its reflection on its evolution and aims to position itself as a scientific journal indexed in scientific databases respectable and recognized by the international scientific community. It is in this mind that the Editorial team reiterates its call to all national and foreign researchers to contribute by the quality of their articles to the success of **JMES** which is theirs and which is a tool for promotion and sharing of their research through their publication.

We wish you a good reading.

Editor in Chief: Dr. Farid ASMA, Senior lecturer, Department of mechanical engineering, University of Mouloud Mammeri, Tizi Ouzou, Algeria

Associate Editor: Dr. Hocine HAMMOUM, Senior lecturer, Department of civil engineering, University of Mouloud Mammeri, Tizi Ouzou, Algeria.