



**نموذج (I) : بيانات بحث مقدم للترقية
البحث الثاني – (مؤتمر) مشترك**

1- عنوان البحث

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Effect of using concretes containing marble as shielding material from the nuclear energy

2- بيانات المؤتمر

<i>2nd International scientific Conference 2018, Paper</i>	إسم المؤتمر
<i>Qaroun Lake, Fayoum, Egypt</i>	مكان إنعقاد المؤتمر
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دراسة تجريبية	منهجية البحث

5- ملخص البحث باللغة الإنجليزية

Applications of γ -rays are on the rise in recent years. thanks to their ionizing nature, γ -rays are hazardous for living cells and tissues. the power of a cloth to be used for engineering purposes and attenuate most penetrating ionizing radiations gamma radiations (γ) is taken into account the essential requirements of nuclear establishments. the foremost used materials are like concretes and lead as they need high atomic numbers. Incorporation of marble dust powder (MDP) as a fine aggregate additive to the concrete has been investigated during this work for its effect on shielding properties from the atomic energy radiations. Several mixtures were prepared with different proportions of MDP starting from 0% to twenty as fine cement replacement. gamma radiation transmission and therefore the parameters which affect this process like attenuation coefficients, cross-sections, tenth value layer, relaxation length and effective atomic numbers at different photon energies were calculated theoretically by WinXcom program. The results show that the values of attenuation parameters of the concrete mixtures are found to be decreased



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with the rise in nonparticulate radiation photon energy. Among the investigated samples; the concrete sample which contains 20% marble has the minimum relaxation length and tenth value layer so it will be used as a decent nonparticulate radiation shielding.