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Study of Organic Molecules: Dye-Sensitized Solar Cells Application

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Abstract

The organic molecules have important role in our life. The large applications of organic molecules are electronic and optical devices, consumer electronics and screens, clean energy devices, sensors, membranes, and light-harvesting antennas, among others. Finding and optimizing such materials for dye-sensitized solar cells (DSSCs) applications would be very helpful for the advancement of clean energy. In this work, a theoretical investigation was performed to examine some electronic and optical properties of some different organic dyes. We used the density functional theory (DFT) and time-dependent DFT (TD-DFT) methods with B3LYP functional and 6-31G basis set by using Gaussian 09 program to test some organic molecules by studying the UV-Vis spectrum, the electronic states transition and the range of the absorption spectrum. The improvement of dyes was done by the terminal addition with organic molecules where the absorption becomes higher than that of the original dyes and also the energy transition becomes lower in the DSSCs that use TiO2 as a collector charge. Some electronic properties were done such as HOMO, LUMO distribution, energy gap, oscillator strength, and the geometrical optimization of these organic dyes. From these properties one can candidates these dyes as DSSCs.

Keywords: TD-DFT, organic molecules, organic solar cells, dye-sensitized, optoelectronic properties

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Parallel litigation and its application in Iraq

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Abstract

The most important principles upon which the legal state is based are the principle of legitimacy, i.e. subjection of everyone to the law, and work to establish judicial oversight of the administration to limit the excess of the administration by creating a specialized administrative judiciary with knowledge and knowledge of the requirements of the administration in a way that balances them with individual freedoms and rights.Many countries have adopted a dual judicial system by introducing an administrative judiciary that specializes in administrative cases, in addition to the ordinary judiciary, whose mandate is limited to examining ordinary cases. This administrative judiciary is no less efficient and organized than the ordinary judiciary, whether for the employees who work in it or for its organs or judicial bodies. The Iraqi legislator had to take the expected step by introducing an administrative judiciary, which would be a watchdog of all actions issued by the administration, and this actually happened with the establishment of the Administrative Judiciary Court, following the second amendment to the State Shura Council Law No. 106 of 1989 to be practiced alongside a court The employees 'judiciary supervises some of the administration's actions and decides the cases that are held on this occasion, and one of the most important of these cases is the cancellation lawsuit. And finally there are conditions Related to the lack of a parallel appeal or the absence of a parallel case**.**

Keywords: State Shura council law, judiciary court, parallel case, legal state

الدعوى الموازية وتطبيقاتها في العراق

الخلاصة

ان أهم المبادئ التي تقوم عليها الدولة القانونية هو مبدأ المشروعية، أي خضوع الجميع للقانون، وان تعمل على وضع رقابه قضائية على الادارة للحد من تجاوز الإدارة وذلك بإيجاد قضاء اداري متخصص ، ذي إلمام ومعرفة بمتطلبات الادارة بشكل يوازن بينهما وبين الحريات والحقوق الفردية. اخذت الكثير من الدول بنظام القضاء المزدوج باستحداث قضاء اداري متخصص في القضايا الادارية ، فضلاً عن القضاء العادي الذي اقتصرت ولايته على النظر في الدعاوى العادية. وهذا القضاء الاداري لا يقل كفاءة وتنظيماً عن القضاء العادي سواء بالنسبة الى الموظفين الذين يشتغلون فيه او بالنسبة الى أجهزته او هيئاته القضائية. كان لابد للمشرع العراقي من أن يخطو الخطوة المنتظرة منه ، باستحداث قضاء اداري ، يكون رقيباً على كل ما يصدر من الادارة من تصرفات ، وقد حدث ذلك فعلاً بإنشاء محكمة القضاء الاداري ، اثر التعديل الثاني لقانون مجلس شورى الدولة المرقم 106 لسنة 1989 لتمارس الى جانب محكمة قضاء الموظفين الرقابة على بعض اعمال الادارة والفصل في الدعاوى التي تقام بهذه المناسبة ، ومن اهم هذه الدعاوى دعوى الالغاء ، ولقد قرر المشرع مجموعة من الشروط لقبول هذه الدعوى امام المحكمة منها ما يتعلق بالمدعي ، ومنها ما يتعلق بالقرار المطعون فيه ، ومنها ما يتعلق بمدة الطعن ، واخيرا هنالك شروط متعلقة بانعدام طريق الطعن الموازي او انتفاء الدعوى الموازية.

الكلمات المفتاحية: قانون مجلس شورى الدولة ، محكمة القضاء ، حالة موازية ، دولة قانونية

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The effect of humic acid and biofertilizer on nutrient readiness, growth and yield plant

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Abstract

The addition of humic acid is very feasible compared to the chemical fertilizers, both in terms of the positive impact in increasing nutrient readiness in the soil or in terms of economic costs as well as environmental protection and human health. The inoculation of microorganisms that encourage plant growth leads to an increase in all growth indicators and an increase in the readiness of the nutrients necessary for plant growth such as nitrogen, phosphorus, potassium, iron, zinc and manganese in the soil. Where studies have proven that adding humic acid at a level of 70 kg ha^{-1} with biofertilizer resulted in dispensing with chemical nitrogen fertilizer and filling the plant's need for some macor and micro nutrients, which is the appropriate combination to obtain a good quality of yield while ensuring the amount of production.

Keywords: Humic acid, biofertilizer, soil, environmental protection

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Legal and international approaches to the assassination of Soleimani

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Abstract

Iranian military commander Qassem Soleimani was killed in an American bombing. It targeted his convoy at Baghdad international Airport and the united states of America Justified that his killing was legal according to Article (51) of the Charter of United Nations. It is related to self –defense, but through research it was found that the killing of Soleimani was not applicable and the article above and that his death violated Iraqi sovereignty. The Iraqi American security agreement and the universal Declaration of Human rights.

Keywords: Qassem Soleimani, Baghdad International Airport, United Nations, Iraqi Security Agreement

نظرات قانونية ودولية في حادثة اغتيال سليماني

الخلاصة

مقتل القائد العسكري الايراني قاسم سليماني في قصف امريكي استهدف موكبه في مطار بغداد الدولي وبررت الولايات المتحدة الأمريكية أن مقتله قانوني استنادا الى المادة (51) من ميثاق الأمم المتحدة والخاصة بالدفاع عن النفس ولكن من خلال البحث تبين أن مقتل سليماني لاينطبق والمادة اعلاه كما ان مقتله خرق للسيادة العراقية وللأتفاقية الأمنية العراقية الأمريكية وللاعلان العالمي لحقوق الانسان لعام 1948 م.

الكلمات المفتاحية: قاسم سليماني ، مطار بغداد الدولي ، الأمم المتحدة ، ألاتفاقية الأمنية العراقية

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[14] The Iraqi-American security agreement on November 2, 2008 in Baghdad, which is an agreement Especially in joint cooperation to eliminate terrorism.