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المغرب عضو في الأمم المتحدة منذ 1956 وجامعة الدول العربية منذ 1958 واللجنة الدولية الأولمبية منذ 1959 ومنظمة المؤتمر الإسلامي منذ 1969 والمنظمة الدولية للفرانكوفونية منذ 1981 والاتحاد المغاربي منذ 1989 ومجموعة الحوار المتوسطي منذ 1995 ومجموعة سبعة وسبعون منذ 2003 ومنظمة حلف شمال الأطلسي كحليف رئيس خارجي منذ 2004، ثم الاتحاد من أجل المتوسط سنة 2008. كما تم انتخاب المغرب مؤخرًا عضوًا جديدًا غير دائم بمجلس الأمن التابع للأمم المتحدة لولاية تهيئ لسنتين، ابتداءً من فاتح يناير 2012 إلى غاية ديسمبر 2013.

والمغرب هي الدولة الأفريقية الوحيدة التي ليست عضوًا في الاتحاد الأفريقي الذي حل محل منظمة الوحدة الأفريقية والتي انسحب منها المغرب عام 1984 بسبب رفضها الاعتراف بسيادته على الصحراء الغربية، بيد أن لها مكانًا خاصًا في الاتحاد: بالاستفادة من الخدمات التي تتيحها دول الاتحاد، كمجموعة البنك الأفريقي للتنمية. [8] سنة 2008 منح الاتحاد الأوروبي للمغرب الوضع المتقدم في اتفاقيات الشراكة والجوار والذي يمكن المغرب من المشاركة في بعض الوكالات الأوروبية. [9] كما وافق المغرب على الانضمام تدريجيًا إلى مجلس التعاون الخليجي بعد دعوة تلقاها للانضمام سنة 2011. [10]

المغرب دولة ذات نظام ملكي برلماني دستوري برلمان يتم انتخابه. الانتخابات البرلمانية لعام 2011 تم رصدها من طرف مراقبين دوليين لثاني مرة في المغرب. [11] وعلى الرغم من ذلك فإن نسبة المشاركة بلغت 45,44% من إجمالي الناخبين. [12] الرابحان الرئيسيان في هذه الانتخابات هما حزب العدالة والتنمية ثم حزب الاستقلال وكلاهما أحزاب محافظة، كما حققت المعارضة متهمة في حزب الاتحاد الاشتراكي للقوات الشعبية وهو حزب اشتراكي زيادة متواضعة في عدد النواب كذلك حزب التجمع الوطني للأحرار وهو حزب يساري. في 25 نوفمبر 2011 شغل عبد الإله بنكيران من حزب العدالة والتنمية منصب رئيس الحكومة للمملكة المغربية.



Morocco has a population of over 33 million and an area of 446,550 km² (172,410 sq mi). Its political capital is Rabat, although the largest city is Casablanca; other major cities include Marrakesh, Tangier, Tetouan, Salé, Fes, Agadir, Meknes, Oujda, Kenitra, and Nador. A historically prominent regional power, Morocco has a history of independence not shared by its neighbours. Its distinct culture is a blend of Arab, indigenous Berber, Sub-Saharan African, and European influences.

Morocco claims the non-self-governing territory of Western Sahara as its Southern Provinces. Morocco annexed the territory in 1975, leading to a guerrilla war with indigenous forces until a cease-fire in 1991. Peace processes have thus far failed to break the political deadlock.

Morocco is a constitutional monarchy with an elected parliament. The King of Morocco holds vast executive and legislative powers, especially over the military, foreign policy and religious affairs. Executive power is exercised by the government, while legislative power is vested in both the government and the two chambers of parliament, the Assembly of Representatives and the Assembly of Councillors. The king can issue decrees called *dahirs* which have the force of law. He can also dissolve the parliament after consulting the Prime Minister and the president of the Constitutional court.

Morocco's predominant religion is Islam, while the official languages are Berber and Arabic. Moroccan Arabic, referred to as *Darija*, and French are also widely spoken.

The area of present-day Morocco has been inhabited since Paleolithic times, sometime between 190,000 and 90,000 BC.[11] During the Upper Paleolithic, the Maghreb was more fertile than it is today, resembling a savanna more than today's arid landscape.[12] 22,000 years ago, the Aterian was succeeded by the Iberomaurusian culture, which shared similarities with Iberian cultures. Skeletal similarities have been suggested between the Iberomaurusian "Mechta-Afalou" burials and European Cro-Magnon remains. The Iberomaurusian was succeeded by the Beaker culture in Morocco.

Mitochondrial DNA (MtDNA) studies have discovered a close link between Berbers and the Saami of Scandinavia. This confirms theories that the Franco-Cantabrian refuge area of southwestern Europe was the source of late-glacial expansions of hunter-gatherers who repopulated northern Europe after the last ice age.[13]

Berber Roman King Ptolemy of Mauretania.

Mosaic of Diana in Volubilis.

North Africa and Morocco were slowly drawn into the wider emerging Mediterranean world by the Phoenicians, who established trading colonies and settlements in the early Classical period. Substantial Phoenician settlements were at Chellah, Lixus and Mogador.[14] Mogador was a Phoenician colony as early as the early 6th century BC.[15][page needed]

Morocco later became part of a North African empire headquartered in Carthage. The earliest known independent Moroccan state was the Berber kingdom of Mauretania under king Bocchus I. This kingdom in northern Morocco, not to be confused with the present state of Mauritania, dates at least to 110 BC.[16]

The Roman Empire controlled this region from the 1st century BC, naming it Mauretania Tingitana. Christianity was introduced in the 2nd century AD and gained converts in the Roman towns, among slaves and some Berber farmers.

In the 5th century AD, as the Roman Empire declined, the region was invaded from the north first by the Vandals and then by the Visigoths. In the 6th century AD, northern Morocco was nominally part of the East Roman, or Byzantine Empire. Throughout this time, the Berber inhabitants in the high mountains of the interior of Morocco remained unsubdued.



The metal–oxide–semiconductor field-effect transistor (MOSFET, MOS-FET, or MOS FET) is a type of transistor used for amplifying or switching electronic signals.

Although the MOSFET is a four-terminal device with source (S), gate (G), drain (D), and body (B) terminals,[1] the body (or substrate) of the MOSFET is often connected to the source terminal, making it a three-terminal device like other field-effect transistors. Because these two terminals are normally connected to each other (short-circuited) internally, only three terminals appear in electrical diagrams. The MOSFET is by far the most common transistor in both digital and analog circuits, though the bipolar junction transistor was at one time much more common.

The main advantage of a MOSFET transistor over a regular transistor is that it requires very little current to turn on (less than 1mA), while delivering a much higher current to a load (10 to 50A or more). However, the MOSFET requires a higher gate voltage (3-4V) to turn on.[2]

In enhancement mode MOSFETs, a voltage drop across the oxide induces a conducting channel between the source and drain contacts via the field effect. The term "enhancement mode" refers to the increase of conductivity with increase in oxide field that adds carriers to the channel, also referred to as the inversion layer. The channel can contain electrons (called an nMOSFET or nMOS), or holes (called a pMOSFET or pMOS), opposite in type to the substrate, so nMOS is made with a p-type substrate, and pMOS with an n-type substrate (see article on semiconductor devices). In the less common depletion mode MOSFET, detailed later on, the channel consists of carriers in a surface impurity layer of opposite type to the substrate, and conductivity is decreased by application of a field that depletes carriers from this surface layer.[3]

The "metal" in the name MOSFET is now often a misnomer because the previously metal gate material is now often a layer of polysilicon (polycrystalline silicon). Aluminium had been the gate material until the mid-1970s, when polysilicon became dominant, due to its capability to form self-aligned gates. Metallic gates are regaining popularity, since it is difficult to increase the speed of operation of transistors without metal gates.

Likewise, the "oxide" in the name can be a misnomer, as different dielectric materials are used with the aim of obtaining strong channels with smaller applied voltages.

An insulated-gate field-effect transistor or IGFET is a related term almost synonymous with MOSFET. The term may be more inclusive, since many "MOSFETs" use a gate that is not metal, and a gate insulator that is not oxide. Another synonym is MISFET for metal–insulator–semiconductor FET.

The basic principle of the field-effect transistor was first patented by Julius Edgar Lilienfeld in 1925.

Usually the semiconductor of choice is silicon, but some chip manufacturers, most notably IBM and Intel, recently started using a chemical compound of silicon and germanium (SiGe) in MOSFET channels. Unfortunately, many semiconductors with better electrical properties than silicon, such as gallium arsenide, do not form good semiconductor-to-insulator interfaces, and thus are not suitable for MOSFETs. Research continues on creating insulators with acceptable electrical characteristics on other semiconductor material.

In order to overcome the increase in power consumption due to gate current leakage, a high- κ dielectric is used instead of silicon dioxide for the gate insulator, while polysilicon is replaced by metal gates (see Intel announcement[4]).

The gate is separated from the channel by a thin insulating layer, traditionally of silicon dioxide and later of silicon oxynitride. Some companies have started to introduce a high- κ dielectric + metal gate combination in the 45 nanometer node.

When a voltage is applied between the gate and body terminals, the electric field generated -penetrates through the oxide and creates an "inversion layer" or "channel" at the semiconductor insulator interface. The inversion channel is of the same type, p-type or n-type, as the source and drain, and thus it provides a channel through which current can pass. Varying the voltage between the gate and body modulates the conductivity of this layer and thereby controls the current flow between drain and source.



| # | اسم الباحث | التخصص العام | الوظيفة | الدرجة العلمية |
|---|-----------------------|--------------|------------|----------------|
| 1 | احمد ابراهيم عبده شرف | هندسة حاسبات | باحث رئيسي | أستاذ مساعد |
| 2 | حمدي محمود محمد يوسف | الرياضيات | باحث مشارك | أستاذ مساعد |

| البند | القيمة بالريال السعودي |
|------------------------|------------------------|
| الموارد البشرية | |
| الاجمالي | 0.00 |
| الاجهزة و المواد الخام | |
| مواد مشعة | 0.00 |
| مواد كيميائية | 0.00 |
| أجهزة قياس | 0.00 |
| أجهزة حاسب آلي | 0.00 |
| أجهزة حاسب محمولة | 0.00 |
| الاجمالي | 0.00 |
| المؤتمرات و الرحلات | |
| المؤتمرات العلمية | 0.00 |
| ورشة عمل | 0.00 |
| مهمة علمية | 0.00 |
| الاجمالي | 0.00 |
| مصرفات أخرى | |
| مصرفات أخرى | 0.00 |
| مصرفات نشرية | 0.00 |
| الاجمالي | 0.00 |
| الاجمالي | 0.00 |