

Fourth Issue, 2017

School of Applied Technical Sciences

SATS Newsletter



SATS NEWSLETTER

FOURTH ISSUE



Eng. Marwa AlFaouri

School of Applied Technical Sciences

German Jordanian University 

About SATS

The School of Applied Technical Sciences (SATS) was established in 2005. SATS offers undergraduate programs in three engineering disciplines giving the students the knowledge and skills they need for success in a technically oriented career. Graduates of the SATS are expected to fill the gap in the Jordanian and the regional markets in critically needed disciplines concerning technology transfer, innovation, and management. The approach of the faculty is to foster applied learning in all courses offered via practical projects, teamwork, technical writing, and presentations.

SATS provides labs in the following areas: materials science, manufacturing processes, industrial automation, work measurements, ergonomics, systems simulation, instrumentation and measurements, automatic control systems, hydraulic and pneumatic systems, and automotive maintenance. In addition, the SATS has a modern engineering workshop facility.

Vision

The School of Applied Technical Sciences aspires to be the preeminent engineering school, nationally and regionally, that delivers a world-class education and research

Mission

School of Applied Technical sciences is committed to the intellectual, personal, and professional growth of its students, faculty, and staff to function effectively in an interdependent global community.

SATS mission is:

- To educate students to the highest quality of education by blending teaching, research, and creative activity in an engaging, challenging, and supportive learning environment
- To prepare students to become productive, responsible, ethical, creative and compassionate members of society in an interdependent global community.
- To prepare students to become citizens for lifelong learning in a global society.

Word from the Dean

Welcome to the School of Applied Technical Sciences (SATS) at the German Jordanian University. Here at SATS, we aspire to solidify the core definition of our name. To be more specific, if you seek Oxford's dictionary's interpretation of the word "technical" (or in German *technisch*), you would find it as involving or concerned with applied and industrial sciences. Whereas Wikipedia defines "Applied science" as a discipline of science that applies existing scientific knowledge to develop more practical applications, like technology or inventions. Simply this is our story.

The three engineering study programs (Industrial Engineering, Mechanical and Maintenance Engineering, and Mechatronics Engineering) offered here are designed, built, and executed to serve this concept, making them one of today's most exciting and rewarding career choices. It was only then a natural outcome that after 10 years, the school has become the most popular and the largest engineering school in the German Jordanian University comprising of 800 students.

Study programs at the School of Applied Technical Sciences are both interesting and demanding. Our curriculum focuses on academic knowledge, analytical skills, and hands-on experience. We have recruited faculty with excellent academic credentials and industrial experience. This ensures unsurpassed quality, experience, and commitment for the education of the future engineers who choose the German Jordanian University. Our study programs respond to the local and regional industry's increasing demand for engineers who are able to deal with more sophisticated and challenging technologies, and who have good academic and practical skills. I am deeply gratified by the progress and achievements of our students, faculty, and staff during the past year. The SATS's successful network of German partners and industrial partnerships play an active role in our success. Through student exchange, advisory councils, financial assistance, and other supporting activities, stakeholders in the SATS reflect the dedication and generosity needed for our school to be one of the top schools in the region.



Dr. Ala'aldeen T. Al-Halhouli

SATS

Newsletter

Achievements

Graduation of the First Batch of Participants in the “Aircraft Manufacturing and Maintenance Technology” Training Course



On Tuesday 29th of August 2017, the Mideast Aviation Academy (MAA) with the cooperation of the School of Applied Technical Sciences (SATS) at German Jordanian Universities (GJU), celebrated the graduation of the first batch of the students who participated in the “Aircraft Manufacturing and Maintenance Technology Training Course”.

The training course is a result of two Memorandum of Understanding (MoU) that were signed by both parties earlier this year, to qualify the students in

the field of aircraft maintenance and enhance their opportunities in the Labor market.

Assistant Dean Dr. Hisham ElMoaqet, stressed the importance of identifying the students’ needs, to equip them with the necessary skills and knowledge through practical training for the labor market nationally and internationally.

He clarified that the MoUs target both current students and graduates, specifying that GJU graduate Engineers who are interested in pursuing careers in the aviation industry, can obtain six months of training customized for them.

From his side, the Training Director Eng. Hasan Obiedat, said that GJU’s teaching approach is very exceptional; pointing that the graduates training program is comprehensive and covering the latest technological developments and in line with the needs of the aviation sector in Jordan and the area.

Student Mahmoud AlAmri, said in the Graduates’ Speech that such training courses are very important in improving their skills technically and interpersonally.

At the end of the ceremony, General Director of MAA, Captain Rakan AlQuraan and Acting Dean for SATS Dr. Safwan AlTarzi, handed the certificates to the graduates.

Activities

Robotics Laboratory Guest Lecture



On Sunday 29th of October 2017, the Robotics Laboratory, in cooperation with the Embassy of Japan, organized a lecture on “Human-robot interaction” presented by Prof. Hiroshi Ishiguro (Osaka University) who is world famous for creating human-like robots and researching what it means to be human. The lecture was organized by Dr. Nathir Rawashdeh of the Department of Mechatronics Engineering.

SATS Participates in the German Week – Jordan Museum



The German Jordanian University (GJU) participated in the German Jordanian Week that commenced during the period 16 – 21 of September, 2017. The activity which was inaugurated by the General Manager of the Jordan Museum Mr. Ihab Ammareen on behalf of H.R.H. Princess Sumaya bint El Hassan aims to raise the awareness with German institutions presence and achievements in Jordan, especially in the field of saving water, the use of solar energy for cooling, heat production and Archaeological excavations. Dr. Nathir Rawashdeh and Eng. Mahmoud Al-Maghrebi from the School of Applied Technical Sciences (SATS) Robotics Laboratory contributed to the event by presenting some students projects, including an Indoor Mail Robot based on Festo-Robotino, a Person-following Smart Cart, and industrial KUKA robot applications.

Workshops

Certified Energy Manager (CEM) Course

Prof. Ismael Al-Hinti conducted the first Certified Energy Manager (CEM) course and exam in Lebanon.



The course was organized by the Lebanese Chapter of the Association of Energy Engineers which was established earlier this year with the support and assistance of Prof. Hinti. The course was attended by 28 participants representing different sectors of the emerging Lebanese Energy Sector.

SATS Hosts German Professors under the Flying Faculty program

In July 2017, the School of Applied Technical Sciences(SATS) has gratefully hosted three German Professors under the Flying Faculty program. SATS extends their appreciation for the experience these guest professors have provided for the School's staff and students. Their assignments are detailed here: Prof. Dr. Ansgar



Meroth, from Hochschule Heilbronn, taught microcontroller based course about sensor networks for the Mechatronics Engineering Department. Prof. Ralph Schuhmann, from EAH Jena, taught a course in Engineering, Management and Law for the Industrial Engineering Department. Dr.-Ing. Naser Al Natsheh, from Technische Universität Braunschweig, taught the course Dynamics Simulation Using Matlab & Simulink for the Mechanical Engineering Department.

The 2nd IEEE Amman Metro Area Workshop



Prof. Ismael Al-Hinti was invited to give a keynote address at the 2nd IEEE Amman Metro Area Workshop which was held in Geneva Hotel August. Prof. Al-Hinti presented a critical review of the current renewable energy regulatory and financial frameworks in Jordan, and provided a number of recommendations to enhance the potentials of utilizing renewable energy on the national level.

EGREEN Project 2nd Steering Committee Workshop

The Second Steering Committee Meeting for EGREEN project took place during the period of September 13-15, 2017 at Ostwestfalen-Lippe University of Applied Sciences, Höxter, Germany. The opening ceremony was attended by the President of the Ostwestfalen-Lippe University of Applied Sciences, and President of Tishreen University. The Steering Committee meeting gathered representatives from partner universities in Jordan, Syria and Europe. The meeting aimed at monitoring the progress of the project and

update the action plans for different work packages.



From SATS, Dr. Louy Qoaider, the quality manager of the project has participated in the meeting. GJU is the leader of the monitoring and evaluation work package, in which they monitor and evaluate the progress of the project to ensure a proper execution of the project to achieve its objective according to European Standards and Guidelines for Quality Assurance. A special focus is being laid on the elaboration of clear methods to ensure quality control of the academic and administrative outcomes.

DESIRE 4th Project Steering Committee Workshop

The fourth DESIRE project biannual and steering committee meeting was held in Dresden, Germany at the Technical University of Dresden, from July 31st, 2017 to August 2nd, 2017. Project partners from the German Jordanian University, the University of Jordan, University of Cyprus, Sapienza University of Rome, Wuppertal Institute, Technical University of Dresden, Damascus University, and Tishreen University participated in the meeting.

Project coordinator Dr. Louy Qoaider and the Host partner Mr. Philipp Hauser opened the meeting and welcomed participants. On the meeting's first day, the project partners presented progress made in the project in the last six months and have gone through evaluation and assessment of project progress and outputs. Furthermore, the project external evaluator joined the meeting and gave her interim evaluation results and recommendations for each work package.



The second project meeting day was put to present results and progress made in the elaboration of the project teaching materials and the e-Learning platform.

The steering committee meeting was held on the meeting's third day to wrap up the project meeting results, discuss project achievements and progress, and plan the next steps.

The following faculty members, research assistants, and administrative staff from SATS, other schools and departments have participated in the meeting, Dr. Ala'aldeen Al-Halhouli, Dr. Louy Qoaider, Eng. Haneen Sa'deh, Eng. Nouf Alheyari, Eng. Mai AlZu'bi, and Mr. Muneer Baniyounis.

Visits

DESIRE Training Courses

Three training courses have been successfully conducted in Germany and Italy for the instructors and students from Jordan and Syria in the framework of DESIRE project which is funded by the Erasmus+ program of the European Commission. The main focus of these courses is Socio-economic impacts of the renewable energy and energy efficiency implementation.

The first training course was held in Wuppertal by Wuppertal institute from July 3rd to 14th, 2017, The second training course was held in Rome by SAPIENZA University of Rome, from July 10th to 21st, 2017, and the third training course was held in Dresden by Technical University of Dresden, from July 17th to 28th, 2017.



The training courses focused on the sustainable energy system transformation, the socio-economic impacts of the Renewable Energy and Energy Efficiency implementation and the sustainable environmental development.

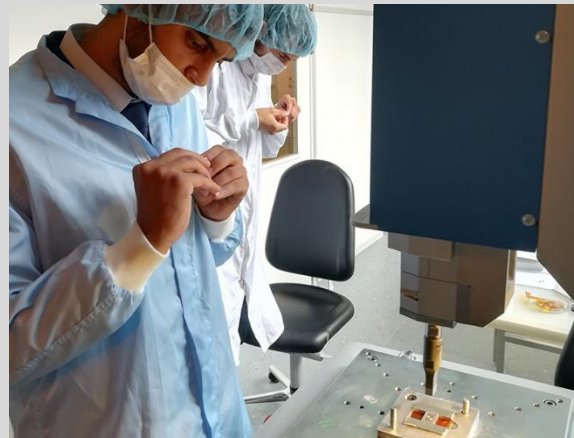
A total number of 24 professors and 18 students from Jordan and Syria have participated in these courses from different technical backgrounds. From the school of applied technical Sciences, Dr.

Ala'aldeen Al-Halhouli, Dr. Louy Qoaider, Dr. Wahib Owhaib, and Eng. Haneen Sa'deh from SATS have participated in these courses.

Nanolab @ GJU – IMT @ TU BS: DAAD- Change by Exchange

During the first week of September 2017, a group from the Nanolab team participated in the exchange activities that took place at the Institute of Microtechnology (IMT) at the Technische Universität Braunschweig (TU BS) in Germany.

These activities are fall under the framework of DAAD funded projects: "Inertial focusing for continuous nanoparticles separation in femtosecond laser 3D micromachined curved channels".



This project is funded by the German Exchange and Academic Services (DAAD) through its transformation program: German-Arab Research partnerships with partner universities in Tunisia, Jordan, Morocco, Libya or Yemen. The Nanolab team participated with IMT team in several activities in Braunschweig such as: training on microfabrication in the clean room facilities or

using femtosecond laser, microfluidic chip fabrication and testing using hot embossing technique as alternative to Softlithography- PDMS, scientific presentations in the SPHERE symposium and social programs.

In addition, the Nano lab team visited the IaF-Institute of Adaptronics and Function Integration and get introduced to the institute facilities and run experiments related to vibration damping and piezo electric sensors and actuators. Another event was a visit to the KUKA Roboter Niederlassung Nord, where a basic training course was given on how to control the KUKA robot using the control panel.

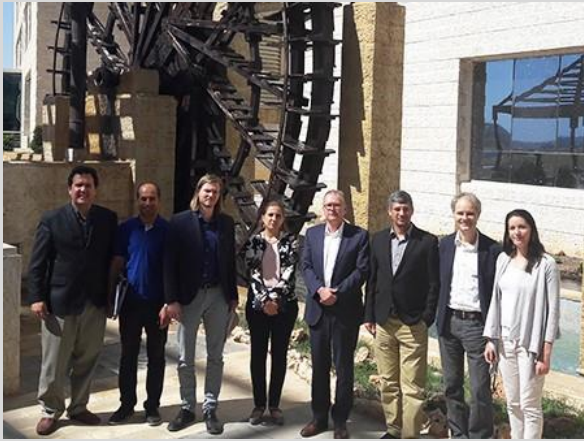
Reykjavik University Delegation Visits GJU



On Wednesday 22nd of November 2017, a delegation from the University of Reykjavik of Iceland visited the German Jordanian University (GJU), to explore collaboration opportunities with a number of universities in the region and GJU. The School of Applied Technical Sciences (SATS) took part in this visit, the delegation visited SATS's labs and other labs to learn about the most important projects and plans of the university in the fields of Information Technology, Sustainability Projects, Energy and Robotics; in

order to plan for future projects and cooperation between the two parties.

Head of German Mechatronics Network Visits GJU



As a follow-up to the GJU Network Heads conference held last February in Amman, Prof. Rolf Biesenbach visited GJU for an interfaculty meeting on 12/10/2017. Prof. Biesenbach has been the Head of the mechatronics engineering network of German partners since the founding of GJU in 2005. He met with representatives of the schools of applied technical sciences, electrical engineering and information technology, as well as natural resources engineering and management and the international office. From the GJU side, the meeting was planned and organized by Dr. Nathir Rawashdeh, mechatronics engineering Exchange Coordinator.

Conferences

The 8th International Beirut Energy Forum

Prof. Ismael Al-Hinti participated in the 8th International Beirut Energy Forum which was held in September. He presented a paper in the title of "Towards a regional strategy for renewable energy in municipalities across the Mediterranean".



The conference was attended by hundreds of energy experts and professionals from over 50 countries.

MicroTAS Conference

Dr. Ala'aldeen Al-Halhouli participated in one of the most important conferences in microfluidics and its applications: The 21st International Conference on Miniaturized Systems for Chemistry and Life Sciences, μ TAS 2017 Conference - October 22- 26, 2017 - Savannah, Georgia, USA.



He presented two papers on new generation of microfluidics CD and Microrobots in microfluidics.

Honors & Awards

SATS Won the First Prize in the 19th Arab Forum for Entrepreneurship

The School of Applied Technical Sciences (SATS) represented by Dr. Hisham ElMoaqet and The forum in its 19th version was co-organized by the Arab Council for Training Students of Arab Universities (ACTSAU) and the Arab-German Young Academy of Sciences and Humanities (AGYA).



Under the track of Systems and Information Technology, GJU student Ismael Ismael and Supervisor Dr. Hisham ElMoaqet won the first prize for the graduation project: "Designing, Commissioning, Programming, and Testing of an Internet of Things (IoT) Device for Training Purposes of Industry 4.0". The graduation project includes a complete device development for a Cyber-Physical System with IoT integration featuring the smart factory vision including many important features of the 4th industrial revolution (Industry 4.0). The project was supported and funded by Bosch-Rexroth in Germany.

SATS Won the Annual Industrial Graduation Projects Competition

The School of Applied Technical Sciences (SATS) participated in the Annual Industrial Graduation Projects Competition which was organized by Jordan Engineers Association (JEA), and Amman Chamber of Industry.

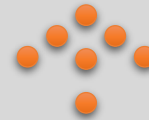
Under the supervision of Prof. Ismael Al-Hinti, Students "Tareq Mohammad Abu-alrub", and "Mohammad Yasser Almalla" won the first prize of

the competition with their project titled: "Energy Audit on Building C of the GJU". This project included conducting a detailed energy audit of Building C at the GJU campus, with the aim of understanding how energy is consumed in the building and to assess the energy saving potentials. The audit recommended that over 280,000 kWh can be saved annually in building C with minimum investments.

Also, under the supervision of Prof. Ala'aldeen Al-Halhouli, student "Osama Deeb" won the third prize of the competition with the project titled: "Development of Autonomous Micro-robots". The project aims at fabricating and controlling micro scale robots using weak magnetic field. The general idea of the control is that the robot contains a ferromagnetic material that allows it to interact with magnetic field. By developing their own closed loop control system, it was possible to make robots autonomous. As for feedback system they used image processing along with MATLAB software to detect the robot position in a certain time.

Promotions

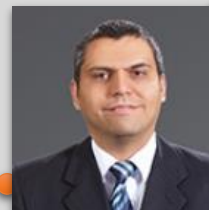
The School of Applied Technical Sciences has witnessed one of the richest years in terms of the number of faculty members who have applied and promoted to a higher academic position. The promotion included the following academic staff:



Prof. Ismael Al-Hinti
Professor



Dr. Mahmoud Al-Banna
Associate Professor



Dr. Ma'en Sari
Associate Professor



Dr. Louy Qaider
Associate Professor

PROF. ISMAEL AL-HINTI

Deans Council Decision of Promotion to Full Professor took place in July 2017

Dr. Ismael Al-Hinti is a professor of Mechanical Engineering in the School of Applied Technical Sciences at the German Jordanian University. He joined GJU in 2011. Dr. Al-Hinti received his Ph.D. in Mechanical Engineering in 2002 from Queen's University Belfast, UK. His Ph.D. research was supported by Ford Motor Company, and later received a research grant from General Motors for his post-Doctoral research at the same university.

Beside his rich academic experience, Dr. Al-Hinti is also a renowned expert and national leader in the fields of in energy management, energy auditing, measurement & verification, and renewable energy applications. He authored/co-authored 32 research papers in international energy journals, and received several local and international awards and research grants. In addition, he supervised the design and installation of grid-connected and off-grid solar photovoltaic projects in Jordan with a total capacity exceeding 11,000 kWp and managed over 35 energy audits for industrial facilities and office buildings in Jordan, Kuwait, and Saudi Arabia.

Dr. Al-Hinti has a proven track record for developing and conducting capacity building and training programs in energy management and renewable energy for high profile regional clients, and is an authorized trainer by the Association of Energy Engineers (AEE) for its CEM, CMVP, BEP courses and examinations.



About

Position: Professor

Department: Mechanical and Maintenance Engineering

Professional Experiences:

7/2017 – date Professor, Department of Mechanical & Maintenance Engineering, School of Applied Technical Sciences

1/2011 – 7/2017 Associate Professor, Department of Mechanical & Maintenance Engineering, School of Applied Technical Sciences

10/2011 – 10/2014 Head of Mechanical & Maintenance Engineering Department

Renewable energy & energy management expert, ETA-max

DR. MAHMOUD AL-BANNA

Deans Council Decision of Promotion to Associate Professor Rank B took place in July 2017

Dr. Mahmoud al-Banna is an associate professor of industrial engineering. He received his Ph.D. in Industrial Engineering from Wayne State University, MI, USA. He conducted his Ph.D. thesis with Ford Motor Company at Advanced Manufacturing Technology Development department (AMTD), and then he worked as a Research Engineer at Welding Technology Corporation. His current research interests are Machine Learning, Pattern Recognition, Cancer Diagnostics, Applied Operations Research, Intelligent Supply Chain Management, and Healthcare Management Systems.



About

Position: Associate Professor

Department: Industrial Engineering

Professional Experiences:

7/2017 – date Associate Professor,
Department of Industrial Engineering

2/2011 – 7/2017 Assistant Professor,
Department of Industrial Engineering,
School of Applied Technical Sciences

DR. MA'EN SARI

Deans Council Decision of Promotion to Associate Professor Rank B took place in January 2017

Dr. Ma'en Sari is an associate professor of mechanical and maintenance engineering. He joined GJU in 2014. Dr. Sari received his Ph.D. in Mechanical Engineering in 2011 from New Mexico State University, NM, USA. His research was supported and funded by NASA. After graduation, he worked as a post-doc in the same university for one academic year, and then he joined the Mechanical Engineering department in King Faisal University in Saudi Arabia in 2012. His research interests include free vibration analysis of continuous systems, stability and dynamic analyses of continuous systems, non-linear dynamics, time-varying systems, hydrodynamics and thermal behavior of Micro electro mechanical systems (MEMS), non-local behavior of different continuous structures, damage identification in aerospace and mechanical systems, and structural health monitoring. Dr. Sari has 27 articles published in peer reviewed journals and conferences, and he is a reviewer for several journals and conferences in the field of applied mechanics.



About

Position: Associate Professor

Department: Mechanical and Maintenance Engineering

Professional Experiences:

1/2017 - date Associate Professor,
Department of Mechanical & Maintenance
Engineering, School of Applied Technical
Sciences

9/2014 -4/2017 Assistant Professor,
Department of Mechanical & Maintenance
Engineering, School of Applied Technical
Sciences

2016 - 2017 Head of Mechanical &
Maintenance Engineering Department

DR. LOUY QOAIDER

Deans Council Decision of Promotion to Associate Professor took Place in December 2016

Dr. Louy Qoaider is an associate professor of mechatronics engineering. He has joined the German Jordanian University as Assistant Professor in January 2014. He is a senior technical consultant of solar power projects in Jordan and the MENA region. Prior to this, he worked at the German Aerospace Center DLR (January 2010 to December 2013) as project manager of an international project: enerMENA that deals with technical support, research and training of MENA partners in the field of solar energy technology. During his work as enerMENA project manager, Dr. Qoaider coordinated the preparation and the implementation of the teaching and training materials that are currently implemented in several universities and training centers. In addition to his project management tasks, he was involved in the project as trainer of trainers. Previous to his employment at the DLR, Dr. Qoaider worked as project developer at the Karau Group (2009), based in Germany, with focus on Photovoltaic projects planning and development in Germany and in Europe. He also worked at Cologne University of Applied Sciences (2005-2008) as instructor and researcher and was involved in several training and consultancy projects in his domain. He has a mechanical engineering back ground with a specialization in renewable energy engineering and management he has a PhD in Engineering/energy from the University of Rostock in Germany.



About

Position: Associate Professor

Department: Mechatronics Engineering

Professional Experiences:

12/2016 - date Associate Professor,
Department of Mechatronics Engineering,
School of Applied Technical Sciences

1/2014– 12/2016 Assistant Professor,
German Jordanian University

9/2014 – 9/2015 Head of Energy
Engineering Department

Under supervision of Dr. Iyas – Department of Industrial Engineering, student “Mohannad Al Majali” conducted his graduation project “Implementing Agile Management in a Manufacturing Environment with the example of a combustion manufacturing plant” at Siemens, Germany.

Dr. Nathir Rawashdeh, Dr. Jumana Abu-Khalaf, and former student Eng. Sarah Ghobj, attended the 18'th International Conference on Research and Education in Mechatronics (REM) held in Wolfenbuettel-Germany during 14-16/9/2017.

Dr. Hani Mohsen – Department of Mechatronics Engineering, attended the International Renewable and Sustainable Energy Conference held during 4-7/12/2017 in Tangier Morocco.

Dr. Nathir Rawashdeh – Department of Mechatronics Engineering, served as a member of the Higher Education Accreditation Committee for the review of Electrical Engineering study programs, Amman, 2017.



Dr. Nathir Rawashdeh – Department of Mechatronics Engineering, started work as a consultant for King Abdallah II Design and Development Bureau (KADDB) in project for electrification and tele-operation of an unmanned dune buggy. Assignment period: 8/2017 – 3/2018.

Dr. Nathir Rawashdeh – Department of Mechatronics Engineering, served as a Technical Committee member during the founding of Prince Hussein University in Amman, 2017.

Dr. Rula Allaf – Department of Industrial Engineering, published a book chapter titled “Melt molding technologies for 3D scaffold engineering” in “Functional three-dimensional tissue engineering scaffolds” book.

Prof. Ala'aldeen Al-Halhouli– Department of Mechatronics Engineering, attended the 1st NYU Biomedical and Biosystems Conference at NYU Abu Dhabi during April 9-11, 2017. His presentation was about Recent advances in microfluidics at the Nanolab @ GJU.

Prof. Ala'aldeen Al-Halhouli and Prof Ziyad Masoud participated in the World Science Forum held in Dead Sea, Jordan during 7-10/11/2017.

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