



وحدة البحث والتصنيع التجريبي

RESEARCH & PILOT PRODUCTION UNIT



Contents

الرؤية.....	1
الرسالة	1
الأهداف	1
المهام	1
الإمكانات المتاحة وخطة الأسعار	2
ZETASISER NANO ZS	2
UV-2000s Ultraviolet Transmittance Analyzer (Labsphere USA).....	4
Wells-Brookfield Cone/Plate and cylindrical viscometer (DV3).....	5
Buchi Mini Spray Dryer B-290	7
ERWEKA All-Purpose system AR 403.....	7
HPLC Shimadzu (20A).....	9
تشكيل وحدة البحث والتصنيع التجريبي.....	10



وحدة البحث والتصنيع التجريبي

الرؤية

تسعى وحدة البحث والتصنيع التجريبي كلية الصيدلة - جامعة ٦ أكتوبر - أن تكون من الوحدات ذات الطابع الخاص المتميزة ذات قدرة تنافسية في مجال البحث العلمي الصيدلي محليا واقليميا.

الرسالة

تهدف وحدة البحث والتصنيع التجريبي - كلية الصيدلة - جامعة ٦ أكتوبر - إلى المساهمة الفعالة في زيادة المزايا التنافسية للكلية في مجالات التعليم والبحث العلمي وخدمة المجتمع والتواصل الفعال مع سوق العمل، كذلك المساهمة في تنمية الموارد الذاتية للكلية ورفع كفاءة خريجها من خلال خبرات بشرية ذات كفاءة وتجهيزات معملية حديثة في إطار من الحفاظ على القيم والأخلاقيات.

الأهداف

- ١- المساهمة في تطوير البحث العلمي في جمهورية مصر العربية.
- ٢- التواصل الفعال والدائم وتقديم خدمات بحثية متميزة مع المؤسسات العلمية والبحثية وشركات تصنيع الدواء (سوق العمل).
- ٣- تنمية القدرات والمهارات العلمية والتطبيقية لطلاب وخريجي كلية الصيدلة - جامعة ٦ أكتوبر.
- ٤- المساهمة في تنمية الموارد الذاتية لكلية الصيدلة - جامعة ٦ أكتوبر.
- ٥- تعظيم المزايا التنافسية لكلية الصيدلة - جامعة ٦ أكتوبر- على المستوى المحلي والإقليمي.

المهام

- ١- التواصل مع مؤسسات سوق العمل والتعريف بأنشطة الوحدة والخدمات التي يمكنهم الاستفادة منها.

- ٢- تقديم خدمات متميزة للباحثين في كليات الصيدلة والمراكز البحثية بجمهورية مصر العربية في مجالات الصيدلة المختلفة.
- ٣- التعاون في حل مشكلات التحليل والتصنيع الدوائي ورقابة الجودة.
- ٤- القيام والمساهمة في الدورات التدريبية وورش العمل بالكلية والمقدمة الي الطلاب والخريجين والأطراف ذات العلاقة والتي تهدف الي الارتقاء بالقدرات العلمية والمهنية وزيادة الوعي البحثي للمشاركين من مختلف انحاء جمهورية مصر العربية.

الإمكانات المتاحة وخطة الأسعار

ZETASIZER NANO ZS

ZETASIZER NANO ZS



What makes the Zetasizer Nano ZS so popular?

The Nano ZS has become the market leading system by providing great value and by simplifying the measurement of a range of important parameters to help make you more productive.

The NIBS optics and M3-PALS technology ensure a wide size and concentration range, which reduces your time and effort for sample preparation.

A high degree of automation of the measurement procedure means that you can be up and running in minutes, minimising the training requirement.

The Zetasizer Nano ZS is a high performance two angle particle and molecular size analyzer for the enhanced detection of aggregates and measurement of small or dilute samples, and samples at very low or high concentration using dynamic light scattering with 'NIBS' optics. The ZSP also incorporates a zeta potential analyzer that uses electrophoretic light scattering for particles, molecules and surfaces, and a molecular weight analyzer using static light scattering.



Specification:

Particle size and molecular size

Measurement range:	0.3nm – 10.0 microns* (diameter).
Measurement principle:	Dynamic Light Scattering
Minimum sample volume:	12 μ L
Accuracy:	Better than +/-2% on NIST traceable latex standards
Precision / Repeatability:	Better than +/-2% on NIST traceable latex standards
Sensitivity:	0.1mg/mL (Lysozyme)

Zeta potential (and optional Protein Mobility):

Measurement range:	3.8nm – 100 microns (diameter)*
Measurement principle:	Electrophoretic Light Scattering
Minimum sample volume:	150 μ L (20 μ L using diffusion barrier method)
Accuracy:	0.12 μ m.cm/V.s for aqueous systems using NIST SRM1980 standard reference material
Sensitivity:	10mg/mL (BSA).

Molecular weight:

Measurement range:	980Da – 20M Da*
Measurement principle:	Static Light Scattering using Debye plot
Minimum sample volume:	12 μ L (3-5 sample concentrations required)
Accuracy:	+/- 10% typical

UV-2000s Ultraviolet Transmittance Analyzer (Labsphere USA)

Achieve instantaneous UVA/UVB protection factor values of sunscreen samples

ADVANCED Labsphere's UV-2000S incorporates the latest component and software technology to achieve accurate in-vitro SPF/UVA-Protection Factor analysis of sun care products developed to receive the "very high" sun protection label. Driven by rapidly evolving industry requirements to simplify product labeling and new in-vitro methods to validate product UVA Protection, the UV-2000S is designed to comply with recently approved in-vitro methods, such as COLIPA UVA-PF, ISO 24443, Boots Star Rating and the US FDA, as well as several pending global standards/methods.



The UV-2000S has replaced Labsphere's UV-1000S as the Industry's choice for laboratory in-vitro SPF/UVA analysis and production floor quality control.

Fast The UV-2000S rapidly measures the diffuse transmittance of sunscreen samples in the ultraviolet wavelength region from 250 - 450 nm. Labsphere's Spectralon® integrating sphere incorporates a re-optimized xenon flash lamp to provide exceptional diffuse illumination of the



product sample and minimize data integration time. New high performance diode array spectrometers coupled by new advanced fiber optics are optimized at the system level for low stray light with superior wavelength stability and flash-to-flash repeatability.

IMPROVED Many improvements are incorporated in the UV-2000S to realize a new industry standard for in-vitro sun care product analysis. System improvements include new spectrometers, Xenon Flash Lamp, optical coupling fibers, optical head positioning mechanism, sample positioning stage and a new, robust software development platform.

System Properties and Performance

Wavelength Range:	250 to 450 nm*
Wavelength Accuracy:	±1 nm
Bandwidth: (FWHM)	<4 nm
Wavelength Step: (Data Interval)	1 nm
Optical Geometry:	Hemispherical Illumination/0° viewing (d/0)
Integrating Sphere Geometry:	Spectralon®
Integrating Sphere Port Area:	< 5%
Sample Exposure Area:	0.79 cm ²
Lamp:	Xenon Flash Lamp
UV Dose Per Measurement Cycle:	< 0.2 J/cm ²
Sample Positioning Stage:	Manual Stage
Measurement Range:	
Transmittance:	0 - 100%
Absorbance:	0 - 2.7 A (Dual Doped PMMA Method)
SPF:	1 - 50+
Scan Time:	< 5 s

Measurement Methods Supported:

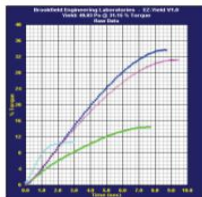
Bare Substrate Analysis and Data Archival:	Yes
SPF:	Yes
UVA/UVB:	Yes
Critical Wavelength:	Yes
UVA Protection Factor: COLIPA Method (2011)**	Yes
UVA Protection: Revised Boots Star Rating (2008)**	Yes
UVA Protection Factor: FDA UV1/UVA (2011)**	Yes
UVA Photoprotection Method: ISO 24443	Yes

Wells-Brookfield Cone/Plate and cylindrical viscometer (DV3)

RheocalcT Software Optional (see p14 for more details)
GET TOTAL CONTROL OF YOUR INSTRUMENT AND TEST PARAMETERS

Automatically control the instrument and collect data with RheocalcT running on a dedicated PC with USB interface. RheocalcT can analyze data, generate multiple plot overlays, print tabular data, run math models and perform other time-saving routines. Up to five comparison data sets can be plotted and saved. Other features include:

- Wizards to guide you through the creation of common tests
- Yield Testing, alone, or in conjunction with other viscosity measurements
- Secure 21CFR features including multiple logins, access levels, digital signatures, and data storage in a password-protected database
- Looping functions for repetitive tasks
- Averaging of collected data by individual step or whole test
- Math models: Bingham, Casson, Power Law, Herschel-Bulkley
- Export data to Excel® file format and create data reports in PDF format



TORQUE RANGE	SHEAR STRESS RANGE	
	Pa	dyne/cm ²
LV	Contact Brookfield	
RV	.5-100	5-1K
HA	1-200	10-2K
HB	4-800	40-8K
5xHB	20-4K	200-40K

Yield tests can be performed with the use of optional vane spindles.

- Complete spindle set (CPA 40, 41, 42, 51, 52)



Buchi Mini Spray Dryer B-290

Mini Spray Dryer B-290 The world leading R&D solution for Spray Drying

For more than 30 years BUCHI provides an easy to use instrument with proven performance. Discover its outstanding efficiency and flexibility.

Large range of applications due to:

- Free access to global application database
- Over 700 publications
- Over 400 application patents
- Local application support by BUCHI
- Thousands of satisfied customers

Efficient

- Reproducible powder production at lab scale
- Small sample amount saves valuable material (< 5 g)
- High yields (up to 70%)
- Fast drying process (up to 1 L / h)
- Shorter times to optimize formulations
- Lowest maintenance costs

Easy to use

- Intuitive handling
- Scale up to pilot or industrial scale possible
- Fast setup and cleaning times
- Visible process due to glass assembly
- Adjustable particle size (2 to 25 microns)



ERWEKA All-Purpose system AR 403

The ERWEKA All-Purpose system is based on a powerful drive unit available in two versions. The various attachments can be easily and quickly connected



by means of a coupling. The drive unit AR 403 is equipped with a three-phase AC motor. The sturdy ball bearing worm gear drive is completely maintenance free and provides an output torque of max. 23 Nm. The unit features electronic speed control, variable between 20 and 400 rpm. A digital dial regulates the speed.

Through permanent nominal/actual adjustment the preselected speed is kept, even under varying load. The AR 403-S is similar to the AR 403, but has a different drive train. This connection is designed for heavy use.

R&D and Small-Scale Production (The ideal solution)

ERWEKA's All-Purpose equipment is ideal for small scale production in the pharmaceutical, chemical, cosmetic and food industries. In addition, it fits perfect into R&D and the development of powder tablets, ointments, crèmes and more. The modular design is compact, economical and offers a powerful motor drive with a wide ideal for R&D and small-scale production range of easily interchangeable attachments for various purposes.



Wet Granulator FGS

For the production of wet granules.





HPLC Shimadzu (20A)

Purpose:

HPLC is able to identify and quantify the individual components of the mixture based on their relative polarities and interactions with the column's stationary phase and quantitative determination of the impurities and degradation products in raw drug materials and pharmaceutical formulations.



Notes:

- Sample fees not include solvents and water for HPLC.
- For method adjustment: each two trials are computed as one sample injection.
- Samples preparations are belonged to researcher responsibilities.



تشكيل وحدة البحث والتصنيع التجريبي

تشكيل وحدة البحث والتصنيع التجريبي

كلية الصيدلة - جامعة 6 أكتوبر

للعام الأكاديمي 2019/2018

م	الاسم	الصفة
١.	أ.د/ محمود أحمد حسن كحيل	عميد الكلية - رئيس مجلس إدارة الوحدة
٢.	أ.د/ فتحية زكي الشرقاوي	وكيل الكلية لشئون خدمة المجتمع وتنمية البيئة
٣.	أ.د/ نبوية عبد العزيز	وكيل الكلية لشئون التعليم والطلاب
٤.	د/ أسامة شوقي النحاس	مدرس قسم الصيدلانيات - مدير الوحدة
٥.	د/ شيرين سامح	عضوا - مدرس قسم الصيدلانيات
٦.	د/ محمد أشرف ممدوح	عضوا - مدرس قسم الصيدلانيات
٧.	د/ شادي محمد عبد الحليم	عضوا - مدرس قسم الصيدلانيات
١.	د/ نرمين محمد شتا	عضوا - مدرس قسم الصيدلانيات
٢.	د/ شريف محمد عيد	عضوا - مدرس قسم الكيمياء