



مركز التميز البحثي في تقنية تحلية المياه
Centre of Excellence in Desalination Technology

BROCHURE

Characterization Laboratory

Introduction:

The Characterization laboratory is established in Center of Excellence in Desalination Technology (CEDT). It is well equipped with sophisticated instruments such as, Gel Permeation Chromatography (GPC), FTIR Spectrometer, Electrokinetic Analyzer, Optical Tensiometer, Zetasizer etc.

Purpose:

The purpose of Characterization lab is to do characterization testing of different types of Liquid, Polymers and Membrane samples etc.

Services:

- We provide services internally to Ongoing Research projects of CEDT.
- We provide services externally to other Research centers and Departments within KAAU and Industrial sector.

Cost of services:

Services are provided by charging fees for analysis depending upon the source of Sample.

Reports:

- Results of analysis are provided in the form of printed hard copies or by e-mails as per the requirement within 1- days.2
- If a health related water quality failure is noticed, then it will be notified to client by phone or email.

Data Security:

- The analytical data is kept confidential.
- Data is secure and not accessible to third person/party.

Instruments available:

Instrument :	Gel Permeation Chromatography (GPC/SEC)
Manufacturer:	Agilent Technologies
Model:	PL-GPC- 50

Instrument:	Electro kinetic Analyzer
Manufacturer:	ANTON PAAR, AUSTRIA
Model:	SURPASS- ANTON PAAR

Instrument:	ZetaSizer
Manufacturer:	Malvern Instruments UK
Model:	Nano series, MPT- ZS

Instrument:	FTIR Spectrometer
Manufacturer:	Agilent Technologies
Model:	Cary 660 FTIR

Instrument:	Optical Tensiometer Contact angle
Manufacturer:	Attention, Finland
Model:	Theta

Instrument:	PH meter
Manufacturer:	Metrohm
Model:	827

Instrument:	Conductivity meter
Manufacturer:	Thermo scientific
Model:	ORION 3-STAR

Instrument:	Viscometer
Manufacturer:	A & D Company, Japan
Model:	A & D Vibro viscometer, SV-10

Instrument:	Porometer
Manufacturer:	Quanta chrome instruments
Model:	Porometer 3G ZH

Instrument:	Mechanical Strength Tester
Manufacturer:	Instron
Model:	5944

Instrument:	Differential Scanning Calorimetry (DSC)
Manufacturer:	Setaram Instrumentation K & P Technologies.
Model:	dScBI evo

Instrument:	High-performance liquid chromatography (HPLC)
Manufacturer:	Agilent Technology
Model:	1220 Infinity LC

Instrument:	Viscosity
Manufacturer:	BROOKFIELD
Model:	Rheometer DV3T

Instrument:	TEP (Transparent Exopolymer Particles)
Manufacturer:	ADVANTEC
Model:	VT2000

Instrument:	SDI (Silt Density Index)
Manufacturer:	Simple SDI
Model:	Simple SDI- 45

Instrument:	Turbidity meter
Manufacturer:	HANNA
Model:	H—88703

Instrument:	PH-EC-TDS meter
Manufacturer:	HANNA
Model:	HI-3512

Instrument:	Thickness measurement tool
Manufacturer:	
Model:	

Instrument:	Filtration system
Manufacturer:	
Model:	

Tests performed and Cost of analysis:

Sr. No.	Test Description	Test Equipment	Cost of Analysis (SR)
1.	Polymer Characterization & Molecular Weight determination	GPC/SEC	300
2.	Dynamic contact angle measurement.	Optical Tensiometer	200
3.	Optimize Surface chemistry, Surface & Zeta potential.	Electro kinetic Analyzer/ ANTON PAAR	350
4.	Zeta potential, Size of Molecule & Molecular weight	Zeta Sizer	200
5.	Qualitative & Quantitative FTIR Analysis.	FTIR Spectrometer	200
6.	Pore size distribution of membrane.	Porometer	300
7.	Mechanical properties of polymer film & Tensile strength of membrane	Mechanical Strength Tester	300
8.	Thermal Analysis	Differential Scanning Calorimetry (DSC) 0-700 °C.	300
9.	HPLC	1220 Infinity LC	250
10.	Viscosity	Rheometer DV3T	150
11.	PH, EC and TDS test	PH, EC and TDS meter	50
12.	Exopolymer Particles test	TEP	100
13.	Turbidity test	Turbidity meter	50
14.	Porosity test	Thickness measurement tool	50
15.	Membrane filtration test	Filtration system	50
16.	Silt Density test	SDI	70
17.	Conductivity test	Conductivity	50