



# Company Profile

**Fan Niroo Company (FNC)** is specialized in giving solutions for all kinds of water and wastewater. The company was founded in 1992 to perform as an EPC contractor for seawater desalination projects. Since then, the company has grown in every aspect of industry from technology to engineering, manufacturing, installation, commissioning and operation and has played a key role in the water and wastewater treatment industry.

High technology growth of FNC in the past three decades has been achieved by investing enormous proportion of company's revenue in research and development. FNC's R&D is the essence of our commitment to progress. We are focused on innovative ideas to improve and optimize the performance of water and wastewater treatment units. The company has many innovative products as a result of successful R&D projects such as Multi-Effect Desalination (**MED**), Reverse Osmosis (**RO**), Zero Liquid Discharge (**ZLD**), Membrane Bio-Reactor (**MBR**), Dissolved Air Flotation (**DAF**) and many more to come.

Based on the proprietary know-how of our R&D department, FNC has confirmed itself as the largest and sole expert in the field of water and wastewater treatment in the region. The company has the total of about 26,000 square meter manufacturing facilities in five different locations in the Middle East and has signed a partnership contract with **Unicore L.L.C.** to represent itself in international projects.

- FNC is happy to commit to the **price match guarantee** in water and wastewater projects. We can adapt to variety of contract types, from an EPC contractor to run the projects in the form of BOT, BOO and BOOT. We are happy to be a good partner, to reduce the cost and the risk of the project for the employer.
- FNC is having world class water technology for its customers. Our key competitive advantage is our ability to identify, develop and implement variety of new technologies.
- Our strength is the ability to give economical solutions for all kinds of seawater and environmental friendly wastewater treatments.



# ZLD

Zero Liquid Discharge

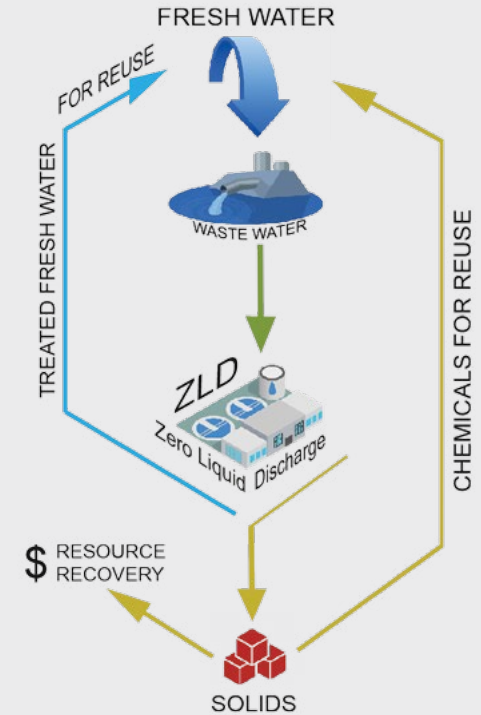


## What is ZLD?

ZLD aims to manage any and all liquid waste discharged by the system.

Liquid waste can contaminate natural water resources, disrupt the ecosystem and cause other environmental problems.

By recovering all the water in a wastewater system, not only the problem of wastewater is eliminated, but also creates a new sustainable resource of water for industrial purposes.



# ZLD advantages

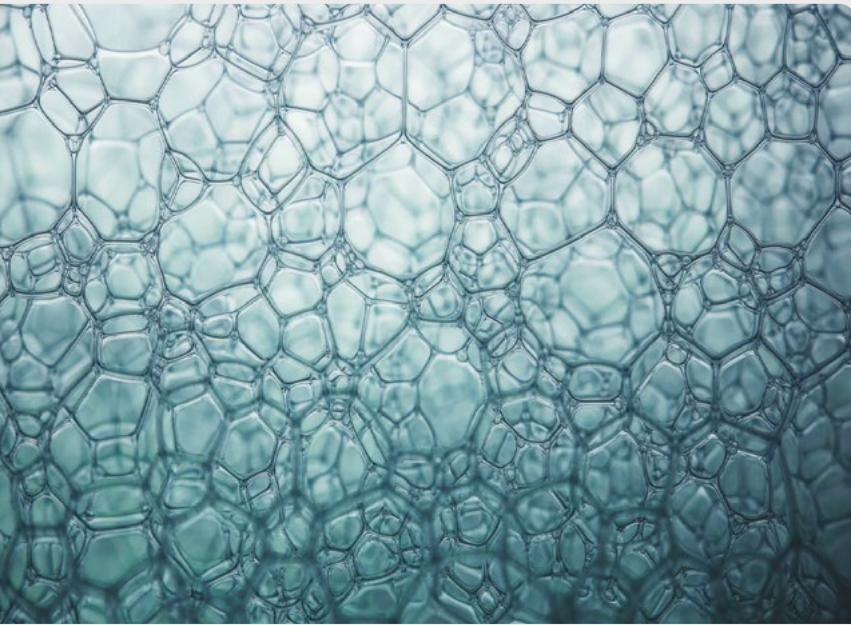
- Protecting the environment
- Water recovery and reuse
- Valuable salt recovery
- No wastewater disposal
- Compliance with environmental regulation
- No cost on wastewater disposal
- Augmenting water supply

## WE CAN...

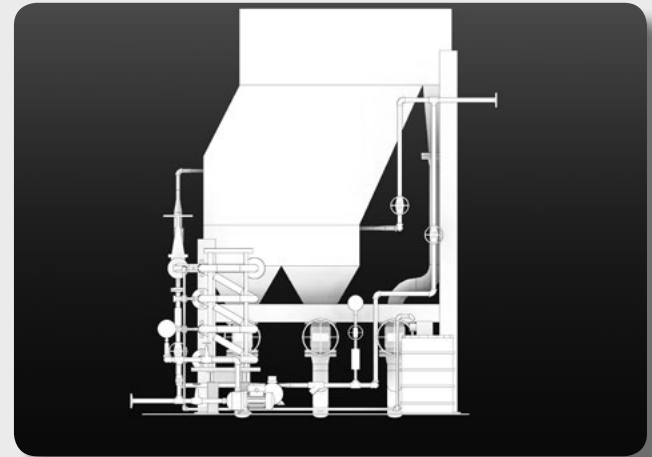
- Design the ZLD plant for any unconventional industrial wastewater with TDS up to 200,000 ppm.
- Test our design for any wastewater before construction with two specially designed pilot plants in our factory.
- Take advantages of falling film evaporators technology.
- Make use of Forced Circulation Crystallization technology.

# DAF

## Dissolved Air Flotation



Dissolved air flotation is one of the most effective methods with specific gravity of close to 1.0 from water. Dissolved Air Flotation is liquid/solid or liquid/liquid separation process to remove tiny suspended solids with any density close to water, colloid, oil and grease etc.



# DAF Advantages

- Ability to handle variable solids loading (can adjust air flow)
- Can provide high float concentration (good thickening)
- Can remove low density particles with long settling periods.
- High BOD removal
- Less unpleasant smell
- Low sensitivity to variations in water quality and flow
- Easy operation
- Low maintenance and long life
- High rise velocity and Less retention time (small footprint)
- Less chemicals required
- Less construction, maintenance and chemical costs (30% to 50%)

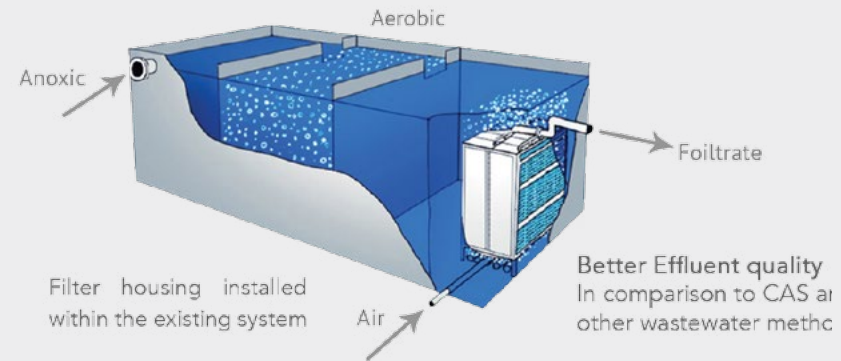
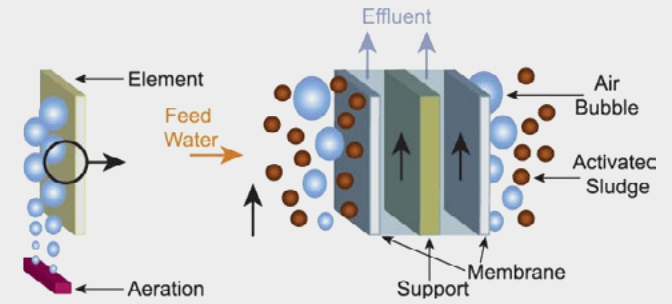
# WE CAN...

- Design, engineer, manufacture, construct and commission with various economical capacity.
- Manufacture in high industrial flow levels.
- Design in high concentration of TSS. (3000 ppm and more).
- Design simultaneous separation of TSS and oily waste.
- Make inline injection of chemicals (Coagulant-Flocculants) using Flocculation pipe.

# MBR

## Membrane Bio-Reactor

Membrane bio-reactor is the combination of a membrane process like microfiltration or ultrafiltration with a biological wastewater treatment process, the activated sludge process.



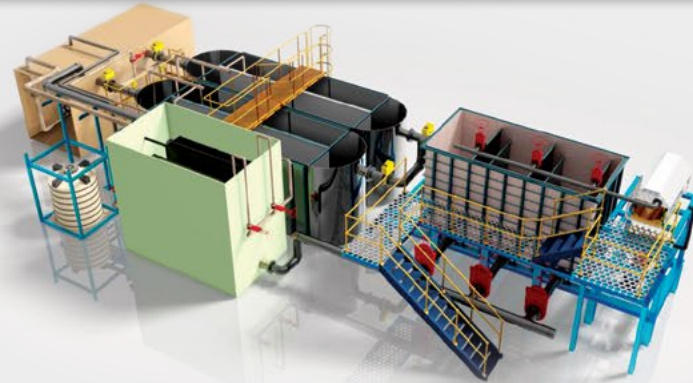


# MBR Advantages

- Compact and easy to implement
- Less equipment and civil work compare to an activated sludge treatment plants
- Produce very high water quality
- High removal of bacteria
- Fully compliant with standards for bathing areas, water reuse for irrigation and industrial applications
- Significant reducer of carbonaceous and nitrogenous pollutants
- Easier and cheaper operation and maintenance
- Doubling the capacity and increasing effluent (period) by upgrading an activated sludge sewage treatment plant to MBR plants
- Environmental friendly

# WE CAN...

- Design, Engineer, Manufacture, Construction, Commission the whole complete plant for municipal and industrial wastewater with different capacities up to 35000 P.E.
- Manufacture containerized MBR units up to 500 P.E. as they are easy to install and even portable.
- Remove COD and BOD up to 90-95%
- Construct Pilot testing
- Re-engineer the old activated sludge sewage treatment plants and changing them to MBR plants with lowest costs.

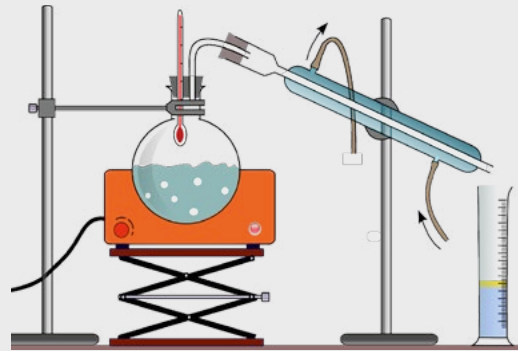


# MED

## Multi-Effect Desalination



The desalination process of MED-TVC is based on evaporation and condensation of sea water under a high vacuum, this process takes place in some evaporators. These evaporators are often called effects or cells.



**Process of Desalination:**  
Boiling and cooling the steam to make potable water.

## WE CAN ...

- *Make MED-TVC Unit with capacity to 24000 m<sup>3</sup>/day*
- *Design MED-TVC Unit with GOR up to 12*
- *Design thermo compressor with highest performance*
- *Give the best solution for erosion and corrosion*

A photograph of a large industrial plant, likely a desalination facility, at night. The plant consists of several large, cylindrical, ribbed vessels connected by a network of pipes and walkways. The scene is illuminated by warm, yellowish lights, possibly from street lamps or plant lighting, creating a glow against the dark sky. The overall atmosphere is industrial and somewhat mysterious due to the low light.

# MED Advantages

- Operates at low temperature ( $< 70\text{ }^{\circ}\text{C}$ ) and at low concentration ( $< 1.5$ ) to avoid corrosion and scaling
- Does not need pre-treatment of sea water and tolerates variations in sea water conditions
- Highly reliable and easy to operate
- Low maintenance cost
- 24hour-a-day continuous operation with minimum supervision
- Very low electrical consumption (less than  $1.0\text{ kWh/m}^3$ ) compared to other thermal processes such as Multi Stage Flash (MSF) or membrane processes (Reverse Osmosis)
- Produce steady and high purity distillate
- Easy to install with packaged units mounted on skids and delivered ready to use
- Ideal for coupling with power plants, steam can be used efficiently at pressure as low as 0.35 bar
- Minimum chemical additives required

A large industrial facility for Multi-Effect Desalination (MED) is shown under a clear blue sky. The plant consists of several large, white, cylindrical vessels with horizontal ridges, connected by a complex network of silver pipes and black hoses. The ground is covered in light-colored gravel. In the background, a body of water is visible under a bright blue sky with a few white clouds. A red banner is overlaid on the top left of the image.

MED

Multi-Effect Desalination



South Pars Gas Field Development,  
Asaluyeh, Iran, Phases 15&16  
Total Capacity : 16000 m<sup>3</sup>/day  
TDS < 10 ppm

# MED Reference List

<b>Number of units built</b>	<b>45</b>
<b>Total Capacity</b>	<b>Up to 130,000 m<sup>3</sup>/day</b>
<b>Biggest Units Built</b>	<b>8000 m<sup>3</sup>/day</b>
<b>Biggest Units Designed</b>	<b>24000 m<sup>3</sup>/day</b>
<b>Biggest Plant Built</b>	<b>16000 m<sup>3</sup>/day</b>
<b>Project in Oman</b>	Thermo Compressor & Ejectors ( re Design, installation and Operation ) For Equirepsa Company in Oman

2000 m<sup>3</sup>/day



Manufacturing,  
Installation & Start-up

Client: Kish Power & Water Co.  
Installation site:  
Kish Island, Iran  
Product water quality:  
(TDS less than 10 ppm)

**1992**

1000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Kharg Petrochemical Co.  
Installation site:  
Kharg Island, Iran  
Product water quality:  
(TDS less than 5 ppm)

**1998**

2400 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Bandar Abbas Power Plant  
Installation site:  
Bandar Abbas Power Plant, Iran  
Product water quality:  
(TDS less than 5 ppm)

**2000**

1200 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Iranian Offshore Oil Co. (I.O.O.C)  
Installation site:  
Lavan Island, Iran  
Product water quality:  
(TDS less than 5 ppm)

**2002**

3x1500 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Agip-Eni  
Installation site:  
South Pars Gas Field  
Development  
(Phases 4&5), As-  
saluyeh, Iran  
Product water quality:  
(TDS less than 5 ppm)

3x1800 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Mobin Petro-  
chemical Co.  
Product water quality:  
(TDS less than 5 ppm)

1200 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & start-up

Client: Iranian Offshore  
Oil Co. (I.O.O.C)  
Installation site:  
lavan Island, Iran  
Product water quality:  
(TDS less than 5 ppm)

3x1718 m<sup>3</sup>/day



Design and Manufac-  
turing

Client: GS/ OIEC/  
IOEC  
Installations site:  
South Pars Gas  
Field Development  
(Phases 9 & 10), As-  
saluyeh, Iran  
Product water quality:  
(TDS less than 5 ppm)

2400 m<sup>3</sup>/day



Design and  
Manufacturing

Client: Iranian Offshore  
Oil Co. (I.O.O.C)  
Installation site: Lavan  
Island  
Product water quality  
(TDS less than 5 ppm)

2x2000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Iranian Offshore  
Oil Co. (I.O.O.C)  
Installation site: Qeshm  
Island  
Product water quality  
(TDS less than 5 ppm)

**2003**

**2004**

**2004**

**2007**

**2009**

**2011**

# MED Reference List



3x4000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Kavian  
Petrochemical Co.  
Installation site:  
Assaluyeh, Iran  
Product water quality:  
(TDS less than 5 ppm)

**2012**

4x4000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client:  
Aria Naft Shahab Co.  
Installation site:  
South Pars Gas Field  
Development (Phases  
16&15), Assaluyeh,  
Iran  
Product water  
quality:  
(TDS less than 5 ppm)

**2012**

6000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client:  
PIDEC Co.  
Installation site: Bandar  
Abbas Refinery  
Product water quality:  
(TDS less than 5 ppm)

**2013**

7800 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client:  
Mobin Petrochemical  
Company  
Installation site: Mobin  
Petrochemical Site,  
Assaluyeh, Iran  
6th Unit  
Product water quality:  
(TDS less than 5 ppm)

**2013**



3x2300 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Petro Pars Ltd.  
Installation site: South  
Pars Gas Field  
Development (Phase  
12), Assaluyeh, Iran  
Onshore Facilities  
Product water quality:  
(TDS less than 5 ppm)

4x4000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & start-up

Client: Petro Sina Aria  
Installation site: South  
Pars Gas  
Field Development  
(phases 24 & 23 ,22),  
Assaluyeh, Iran  
Product water quality:  
(TDS less than 5 ppm)

3x4000 m<sup>3</sup>/day



Design and  
Manufacturing

Client: Persian Golf  
Star Oil Co.  
Installation site:  
Bandar Abbas, Iran  
Product water quality:  
(TDS less than 5 ppm)

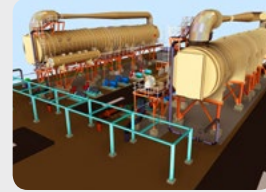
7800 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client:  
Mobin Petrochemical  
Co.  
Installation site:  
Mobin Petrochemical  
Site, Assaluyeh,  
7th Unit  
IranProduct water  
quality:  
(TDS less than 5 ppm)

2x4000 m<sup>3</sup>/day



Signed the Contract  
Construction is in progress

Client:  
Qeshm Movalled co.  
Installation site:  
Qeshm Island, Iran  
Product water quality:  
(TDS less than 5 ppm)

24000 m<sup>3</sup>/day



2014

2014

2015

2017

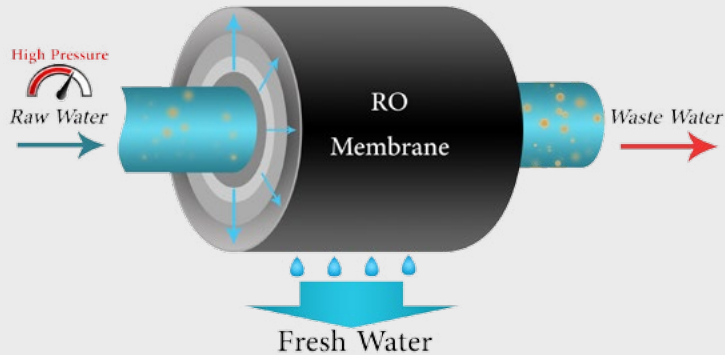
2018

2019

# RO

## Reverse Osmosis

Reverse Osmosis (RO) technology is the most efficient and effective method for water purification. A semi-permeable membrane is used to remove impurities from water under a high pressure gradient. The Reverse Osmosis technology removes dissolved solids, organic matters, biological impurities, metals and chemicals from raw water.



## RO Advantages

- RO package is ideal for a building, hotel, hospital, compound, and shopping center because of low energy consumption and small footprint.
- RO systems require small space and have low energy consumption.
- RO membranes remove many bacteria and pathogens like Giardia and Cryptosporidium that causes disease.
- RO removes chlorine taste and odors; the water will not only be safer, but also tastier.
- The cost of RO system will be cheaper than bottled mineral water in the long run.
- RO membrane filters are affordable and provide outstanding quality water.



## WE CAN ...

FNC is the leader company in engineering, procurement, and construction of membrane water treatment plants including:

- Desalination of sea or brackish water resources to supply drinking water for urban consumption.
- Production of high capacity industrial demin water using advanced deionization technologies.
- Production of purified water and water for injection (PW/WFI) for pharmaceutical applications.
- Treatment and reuse of industrial, pharmaceutical, and municipal wastewater.

# RO Reference List

<b>Number of units built</b>	<b>45</b>
<b>Total Capacity</b>	<b>33,260 m<sup>3</sup>/day</b>
<b>Biggest Units Built</b>	<b>1000 m<sup>3</sup>/day</b>
<b>Biggest Units Designed</b>	<b>100,000 m<sup>3</sup>/day</b>
<b>Biggest Plant Built</b>	<b>1000 m<sup>3</sup>/day</b>
<b>International Projects</b>	<b>Dashoguz, Turkmenistan DF / UF / RO</b>

60 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Nanotechnology  
Development Team  
Installation site:  
Ahwaz, Iran  
Type: RO  
Product water quality:  
Potable

**2008**

1000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Pars Energy Co.  
Installation site:  
Dashoguz,  
Turkmenistan  
Type: DF/UF/RO  
Product water quality:  
Potable

**2008**

145 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Ministry of  
Education, Khuzestan  
Installation site:  
Abadan Khoramshahr  
Arvand Kenar, Iran  
Type: RO  
Product water quality:  
Potable

**2010**

400 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Army-Navy  
Installation site:  
Konarak, Iran  
Product water quality:  
Potable

**2011**

6 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Zarestan  
Installation site:  
Shams-Abad Industrial  
Park ,Iran  
Type: RO / SF / UV  
Product water quality:  
industrial

5 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & start-up

Client: University of  
Gilan  
Installation site:  
Gilan, Iran  
Type: RO & SolarSystem  
Product water quality:  
Potable Water

160 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Fuladin Zob  
Amol Company  
Installation site:  
Amol, Iran  
Type: RO  
Product water quality:  
industrial

500 m<sup>3</sup>/day



Design, Manufacturing,  
Delivery at Site

Client: Qeshm Zink  
Smelting Company  
Installation site:  
Qeshm, iran  
Type: Double Pass RO  
Product water quality:  
Potable

50 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Juybar Steel Co.  
Installation site:  
Amol, Iran  
Type: RO  
Product water quality:  
industrial

1000 m<sup>3</sup>/day



Design, Manufacturing,  
Installation & Start-up

Client: Kayson Inc.  
Installation site:  
Golgohar, Sirjan, Iran  
Type: RO  
Product water quality:  
industrial

2011

2012

2012

2012

2014

2015





7 Billions of Dreams, 1 Planet,  
Use Properly



WATER SOLUTION  
FINE





WATER SOLUTION  
FNC



WATER SOLUTION  
FINE



WATER SOLUTION  
FNC

● <http://FannirooGroup.com>

---

No 36, Negar Alley, Vanak Sq., Vali-e-Asr St., Tehran, Iran.  
Zip Code: 1969813566 P.O.Box:14155/1864

**Tel: +98 21 88 77 11 41**

**Fax: +98 21 88 77 11 42**

[info@fanniroo.com](mailto:info@fanniroo.com)

● <http://UnicoreCompany.com>

---

**Tel: +968 24 61 96 90**

**Fax: +968 24 61 96 80**

[info@unicorecompany.com](mailto:info@unicorecompany.com)



Flat No 703, Bldg No.439, Way 4006, Ghobra North, Muscat, Sultanate of Oman.  
P.O Box: 3375, Postal Code: 111