

# Development of the bio-chemical sector in the uae



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### BIO-CHEMICALS:

The term ' bio-chemical' comprises of two words, that is, ' bio' which means ' life and ' chemical which means any ' chemical substance' that arises from a chemical compound which makes up a living cell. There are number of bio-chemicals which can be obtained from various sources, for example, proteins from beef pancreas, plants and other natural ways. Just like a small example, when a person eats anything, for example, an egg that contains protein which is broken down into amino acids through chemical reactions taking place in the body, or a potato which is broken down into starch and carbohydrates. Not all the reactions in the human body takes place spontaneously as it requires catalysts to either speed up or slow down a reaction and these catalyst are none other than the enzymes which are made up of proteins which is a bio-chemical.

There are different aspects of viewing biology,

- Firstly a natural biology, which is just like the normal and natural biology through which human follow their lives.
- And the other one is synthetic biology which is related in two but distinct processes of bio-fuel production. The first area concerns on the research and development of the synthetic enzymes to breakdown cellulosic biomass into fermentable sugars for the production of fuel and the second is concerned about the creation or engineering of microbes that produce useable biofuel.

The use of bio-chemicals in our daily life has become important due to the fact of increasing scientific modifications. This can be explained by a fact that enzymes are used in medical researches. An enzyme called collagenase is used to dissolve tissues. And a protein called collagen hold the cells of any organ. Once a sample of tissue is taken by a scientist, and wishes to isolate or separate the cells he can soak the cells in the solution of collagenase and after sometime the cells will be separated from each other. After separation the cells are alive and in proper working condition. Then these cells can be taken out and kept in a petri dish and when provided with nutrients, they grow and divide and make up another organ same as they were taken from, this technique is called ' tissue culture'.

Enzymes which are chemically protein in nature work to catalyze reactions and are engineered with synthetic DNA (de-oxyribose nucleic acid) or DNA from other species into microbes which are developed in labs to breakdown certain type of biomass, for example woodchips, corn stalks or other cellulosic substances. They are also used to increase the rate at which they breakdown into sugars which is fermented into ethanol or other types of fuel. The mixture of enzymes nowadays has become quite shocking as they are combining in different families and have become effective greatly.

Synthetic biologists pray to change the microorganisms they are working with so that the oil which they produce may be identical to the oil which is used for transportation today. Soon these microbes will become ' living chemical factories' which can be engineered to pump out almost any fuel that is required.

### BIO-CHEMICAL COMPANIES IN UAE:

The companies who use to manufacture bio-chemicals are called bio-chemical companies. There are numerous bio-chemical companies in UAE for example,

#### Emirates Biotech Pharmaceutical Factory :

It is based in Abu Dhabi, the first company to have access to the technology in Middle East. It plans to produce pharmaceutical raw materials which are based on biotechnological processes.

Biotechnology is field of applied biology which involves living organisms and bio-processes present in engineering, agriculture and medicine. Professionals of various technologies are attracted towards this due to its potential to affect all kinds of industries and business activities.

With two of the prestigious international partners, they have signed a contract to construct the factory and market the products. The two companies are the GL Rapha and Hankook Korus Pharm.

The development of such a sophisticated technology in UAE and the Emirati expertise, brings forward a new global position for UAE in future. The company has begun employing for phase one of the project, and further they are going to hire Emaritis with different universities and technical backgrounds. On the other hand, it is also supporting the local institutes to promote education in the field.

#### Tricon group of companies in Dubai:

Next is another prestigious company named Tricon group of companies in Dubai. Their mission is to provide best quality in a timely and cheap way with care to the society and environment. They always had an objective to build progressive group of companies that participate services with the slightest innovations to cut down the costs and to add up value to customers. The company witnessed growth of itself during the four decades of operation.

To enhance the capabilities in 1996, the company offered to seek international collaboration for innovations. To date, the company is well known for the capability to produce quality projects through mutual support. The company has thrived to become assimilated in the different fields like education, energy, healthcare, hospitality, real estate, security, technology and tourism.

The company's management and staff are composed of singles with great experience in their excelling fields. The variety of disciplines of the group of companies staff and their experiences is the indication and guarantee of the capabilities for the best project execution. It is experiencing a new phase of growth through leadership of the 3<sup>rd</sup> generation of Al Maskari managers.

#### UAE pharma:

Next a company called UAE pharma is one of the most developed market in the Middle East, with strong infra-structure and the top-most per-capita pharmaceutical expenditure in the region. The company continues to lure manufacturers to the region. Since 2003, imports of pharmaceutical products has risen from Dh800 million to Dh 3 billion in 2010 while exports have risen from Dh 100 million to Dh 400 million in the same margin.

The study shows that several multinational companies focus to invest in the UAE pharma which comprises of the strong patented drug market. The country's wealth and preferences for the latest medicine has increased over the past years.

The company's experts say that the potential for further growth in the same sector produces lifestyle changing regions which will be based on the more westernized disease such as obesity, etc.

The study states numerous solutions which have emerged over years. Other diseases like diabetes, increased heart rate, heart diseases will remain a backbone of growth for the original drug manufacturers.

It is also hoped that further increment of the market integration and introduction of integrated healthcare insurance systems will increase the pharmaceutical trade.

#### Gulf pharmaceutical company:

Another prestigious company is Gulf pharmaceutical company which ensures its esteemed work in the following discipline:

1. Conglomerates,
  1. Multi-line.
2. Health care,
  1. Pharmaceuticals,
1. Pharmaceutical suppliers,
1. Generic drugs,

2. Vitamins and nutritionals.

3. Health care product, consumer goods and industrial manufacturing.

#### Relationship between pharmaceuticals and biochemical companies:

The pharmaceuticals companies are also enlisted under the bio-chemical companies as the drugs which are used to cure are also made from the chemicals, for example the drugs which we intake are also protein in nature which is manufactured in a bio-chemical company. So, the bio-chemical company and the pharmaceutical companies are closely related.

#### Summary of development in UAE:

So from seeing the very beginning of the development of the UAE, anyone can clearly say that the country has emerged from the scratch and has been developed into one of the leading country of the world which focuses on the variety of aspects of life and deals with it effectively, no matter whichever division of work it is, whether chemical production, or healthcare or engineering.