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**Point for discussion this month**

**Importance of Chemistry & Microbiology in  
Pollution Treatment**

(For private circulation only)

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Dear Readers,

There is an exciting news from the Stockholm  
International Water Institute that this year's  
Water Prize is awarded to Prof. Perry L.  
McCarty, USA for his pioneering work for  
design and operation of water and  
wastewater treatment systems. Hats off to  
Prof. McCarty!!

This time we have included a special article  
on pluses - minuses of Ecotechnological  
Projects. There is encouragement but at the  
same time there are some lacunae while  
implementing the projects. This is a self  
assessment exercise.

There were some alarming news around  
world water day from renowned institutions  
about the status of pollution of freshwater  
resources and reduction in mountain ice caps.  
Himalaya is source of water for many rivers  
in Indian Sub-continent. Therefore, we need  
to look into the futuristic aspects of this news.  
Now, the summer will be at its peak in  
various parts of India. The issues of scarcity  
of clean water may grapple the rural as well  
as urban areas.

We are thankful to Honourable Ms.  
Sharwaree Gokhale, Chairperson of  
Maharashtra Pollution Control Board and  
Principal Secretary, Ministry of Environment  
and Forests, Government of Maharashtra for  
her visit to our ecotechnological treatment  
sites in Pune in the last week of March 2007.

Thanking you,

Chief Editor

## Pluses and Minuses of Ecotechnology in the Year 2006

- Sayali Joshi  
Chief Executive Officer  
SERI

From last 15 years Sandeep Joshi is working on application of ecological principles to treat pollution; and SERI is trying for the application of Ecotechnology for the treatment of industrial and domestic wastewaters from last 12 years.

This is long way for any kind of technology to root in the civilized society. As it is, the environment is non-priority issue in any developmental process, and the concept of environment management has been limited to "beautification" only; then pollution control and restoration of environmental health remains out of reach.

The application of Soil Scape Filter - a vertical filtration ecotechnology - in last year for the sewage treatment found to be very successful as the treated water had BOD about 10 mg / L much below the standard limit of disposal 30 mg / L.

A unit installed at International School in Gujarat sustained shockloads of solids because the septic tanks were not provided. Even then, with co-operation of School Management, the Soil Scape filtration was stabilized and the results were attained with day to day operation by the school staff. It was the determined approach of School Management and Staff which lead to success.

The effectiveness of the Soil Scape filtration was re-established through the application of the system to treat industrial wastewaters. The implementation of treatment system for the textile colouring unit in Rajasthan was made successful triumphantly with the help of meticulous owner.

The feedback for the Green Channel - a variant of ecotechnology - used for the food industry being run by an NGO - is very encouraging. There was a little problem after the installation but it was sorted out locally by them only. According to them, the operation is very simple and the treated water is odourless.

It is noticed that the willingness of the client is important as far as the implementation and success of the technology is concerned. There was a partial success in Silvassa last year. The pilot plant was set up at one chemical industry producing plasticizers. The COD reduction was more than 95% even when the untreated COD was about 35,000 mg / L.

SERI showed that neutral untreated industrial wastewater did not require any pre-treatment to remove higher contents of organic solids. Despite of this success, the pilot plant could not be transformed into full scale treatment plant. The decision is deferred due to some non-technological issues.

There are two problems, SERI is trying to solve - first is to treat wastewater from some dye intermediate industry which contains sulphonated chemicals and the other one is CETP effluent. At the CETP, there are two filters in a series. The second filter runs well but the first filter gets clogged. SERI is working on these issues meticulously as selling the unit or trading is not the environment business but solving the problem thoroughly is the aim of organization. SERI is indebted to the officials of these organizations for their help, understanding and patience.

As per MPCB's directions, one field scale nalla treatment activity was initiated last year with the help of local industrial association. The group industries contributed to develop green bridges and green lakes in the course of polluted nalla. Before the monsoon only, first green bridge was constructed which sustained floods during the monsoon.

Later on, the remaining three green bridges were constructed having very less length and proportionately less width. This needs to be improved and the co-operation from the industrial organization is earnestly sought. But the reshuffling of the responsibilities is going to take its own time.

Sometimes, the success of the horizontal filtration system is measured based on the analysis of untreated and treated waters. Most of the solids are retained in the horizontal filtration. If the treatment unit is designed for a particular flow rate, sometimes it overflows.

Especially, if the nalla has domestic sources, during the morning hours say from 6.00 to 10.00 am, the flow is at its peak and the water overflows green bridges giving impression that system is not treating the pollution.

That's why; normally it is suggested to have more than one green bridge in a series so that the solids will be effectively removed. The green bridges and green lakes are that way newly emerging technologies need to be strengthened by applications in various geographical locations on different set of pollutants flowing through the nallas. Then, we can confidently say that the technology has withstood all the hurdles and issues in development, implementation and management.

Since, the technology is useful for the community wastewaters arising from non-point sources; there is a need to develop evaluating criteria to determine the success of the technology. The conventional yardsticks may not be effective in showing the effectiveness of the technology. That may mark the technology as failure.

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### NewsCapsule

- ✚ SERI is working on EIA of infrastructure project related to traffic decongestion, road and bridge development etc. In that process, SERI's executives are conducting traffic surveys and assessment of line sources considering emission factors.
- ✚ SERI has started two brand new activities Pollution Clinic and Green Arch to cater the needs of proper guidance in environment management.
- ✚ The Environment Design Centre of SERI is actively involved in designing of water supply and sewage treatment system for one holy town in Maharashtra.
- ✚ SERI is involved in Water Audit for one A class municipal council in Maharashtra.

Compilation – Priya Kapole

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### News analysis

## Industries on Moon

- Sandeep Joshi

It's amazing news from Russia that they are in process of planning certain industries on moon!! According to them, the resources are finite on earth and the demands are more. Hence, it is advisable to start "SIZ" (Special Industrial Zone) on moon where the cost of production or transportation of goods may be high but it will be compensated by the zero cost of pollution treatment since there will be no regulation and no compulsion.

If most of the industries and production processes are made automatic with remote control operations, the need for personnel vigilance and operations will be minimal. So, creating the conducive environment for life and to treat the wastes which defile the environment will be also minimal. Therefore the cost of correcting environmental aberrations due to improper waste disposal will be zero only. Really, it's a good opportunity for all high tech and chemical industries to shift to Moon.

After the incidences like Chernobyl and Bhopal, it was essential to find out safe places for such hazardous industries, operations and products. This declaration has been given new fillip to development and will bring a massive change in the world economy; and environmental considerations.

Considering the availability of land and resources on moon itself, the industries like nuclear power, mining, chemical manufacturing units can grow in due course of time. The means of transportation of electricity from moon to earth can be evolved simultaneously. Really, it's going to accelerate the scientific research, technological development, business and economy in near future. At the same time, there will be good opportunities for the environmental analysts, technologists and naturalists on moon also.

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## **Perry McCarty: Water Laureate 2007**

- Priya Kapole

When we decided to join the Masters in Environmental Sciences, it was not clear what we were supposed to learn. It was really formless idea about the environment, environmental processes, pollution and global issues.

First semester was just an introduction to the subject with various inputs from botany, zoology, ecology, population studies, ozone hole, green house effect. The visiting faculty, who taught us, were from all pure sciences and social sciences. But in second semester we asked to refer to book on environmental chemistry by Perry McCarty.

It was the first introduction to his work. The size of the book was really frightening having hundreds of pages with full of information, diagrams and figures. But as we started reading it, we found that it was written in so simple language that it became our favourite book.

Later on, we kept reading his papers, articles and books to update our knowledge of environmental processes, chemistry and microbiology. To our surprise, he has written about 300 research papers; most of them highly technical papers were published in last decade only. His favourite topic is wastewater treatment using anaerobic processes.

In our college days, we wished to work with him or at least one lecture from him. But being in India, its impossible dream. Then we dreamt our lecturers and visiting faculties had knowledge and field experience like Prof. McCarty.

He has given us orientation in the field of environment management and pollution control. His enormous contribution to environment is useful for the humanity in present and future scenarios.

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## **Announcements**

1. SERI's Pollution Clinic announces a Free Scheme of the assessment of ETP reports, designs and evaluation of present status of ETP / STP / C-ETP starting from May 1, 2007. The scheme is free for first 200 registrations only.

The only requirement is to give all the details of existing facility or planned pollution control facility and register as early as possible.

The brief study report will be inclusive of with cost - effective suggestions with environment management guidelines to achieve the norms set by pollution control authority.

For more details, please contact -  
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2. SERI's website is [www.seriecotech.com](http://www.seriecotech.com). Some articles are posted on website. Earlier issues are also available on website.
3. UV Foundation is formed to facilitate the networking of like minded people who are working in the field of environment pollution control for the socio - cultural benefits.
4. Mr. Suhas Patil is discontinued from SERI with effect from Feb. 2007. We request all associates, representatives, industrial clients, officials, friends and well wishers of SERI to take note of it. It has been brought to our notice that he is indulging in some malicious and defamation activities. That's why we are informing all our existing clients and clients-to-be to take a serious note of it.

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