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**National Research
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Organic Rich Municipal/Industrial Wastewater Treatment Biotechnological Solution In Aerobic Granular Sludge Systems

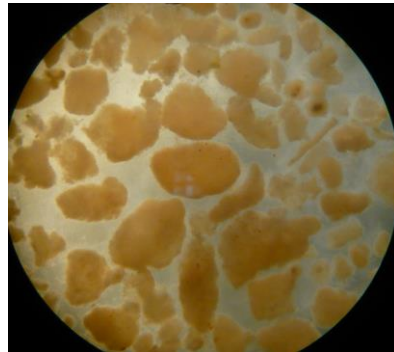
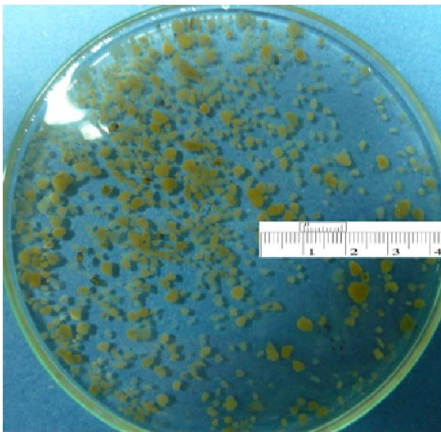
Nucleus Programme

Project Objective:

Organic rich wastewater treatment, simultaneous removal of nutrients (N and P), treatment of industrial wastewater with complex impurification matrix or variable flow rates.

Originality elements:

- Development of aerobic granular sludge;
- AGSBR— aerobic granular sludge sequencing batch reactor system for simultaneous removal of organic load and nutrients (N and P) from wastewater.



Advantages:

- Due to different diffusion gradients within the granules, several environmental conditions (aerobic, anoxic, and anaerobic) can be accommodated in a single aerobic reactor.
- Possibility to attain and sustain high biomass concentrations within the reactor (15-20 g /l) which allows short retention time.
- High settling velocity of the granular sludge (12 - 20 m / h) compared to the speed of conventional flocculated sludge (1 m / h).
- An AGSBR requires as footprint only 20% of the surface needed for conventional biological WWTPs, investment and operational costs being significantly lower compared to the conventional system.
- Energy requirements are 30% lower than for conventional systems.

Applications:

Industrial units - treatment plants for wastewaters with high organic load and toxic substrates (Ex. phenol).

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