



## Tyre waste shreds are effective and environmental friendly choice for purifying waste water

*Figure: Having trouble in turning shredded tyres into business? Recent study shows that in the future it may be possible to utilize tyre shreds in 50 mm x 50 mm and 300 mm x 100 mm sizes for removing nutrient content (e.g. nitrogen and phosphorus) from industrial waste water.*

**Numerous studies have proven the filtering characteristics of shreds and granulates made from end-of-life tyres (ELTs) to be excellent in municipal waste water treatment in removing solids, organic matter, nitrogen and phosphorus. As this is both effective and safe for health and environment, there are already commercial applications approved in private household waste water treatment in the US.**

There are signals indicating that soon will be the time for the first commercial applications where shredded tyres are used in the industrial waste water treatment. This is suggested by the thrilling results of a recent study made by the Finnish research company Apila Group Ltd. carried out at the City of Heinola's municipal waste water treatment plant from August 2012 to October 2013.

"We tested three different particle sizes as carriers in three reactors: 15 mm x 15 mm, 50 mm x 50 mm and 100 mm x 300 mm. Water was led to these units from the water treatment plants secondary settling reservoir at the rate of approximately 300

litres per hour per filter" says Sanni Pisto from Apila Group Ltd, member of the researching team.

The results show that all three filters succeeded in reducing the total nitrogen and ammonium nitrogen content moderately (30-40%) and at times even significantly, by more than 70%. They also reduced phosphorus by approximately 40% and at best even 85%.

"However, the best purification results were gained with larger particle sizes, 50 mm x 50 mm and especially 100 mm x 300 mm", Pisto continues.

There is still a lot to be done before commercialized applications are

available. The purification method is based on microbial activity which is easily disturbed if conditions in temperature or water flow change. If there is plenty of solid material in the waste water, also secondary settling may be required. Additional new processes and equipment are needed.

Still, this study shows us a new direction as an example of a feasible application and there is certainly more to come. Let's keep our eyes and ears open.

Download and read the whole report (PDF) from the study from [www.tana.fi/blog/](http://www.tana.fi/blog/)