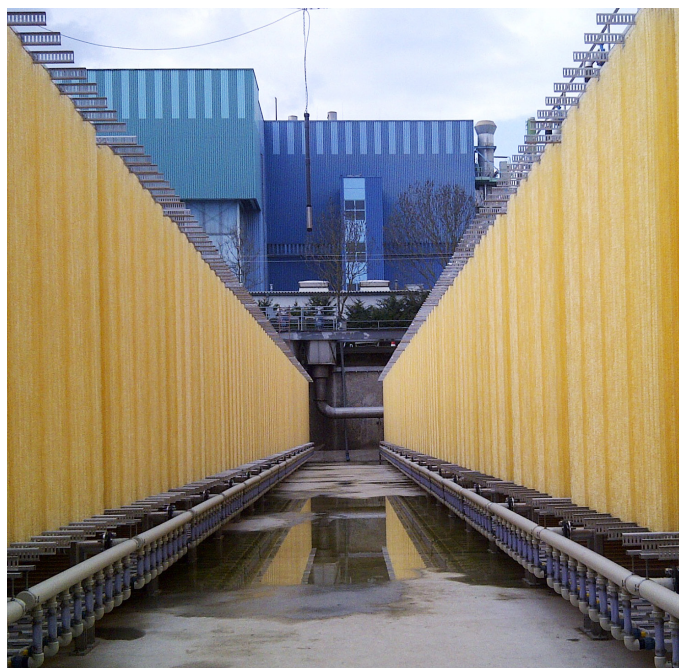




Olching, Bavaria, Germany

WWTP Data	
Type of WWTP	Municipal
Maximum flow	80.000m ³ /d
Capacity	250.000 PE
Biological stage	2 lanes 2 anox tanks 2 anaerobic tanks 2 aerobic tanks
Operation	upstream denitrification Bio-P (additional P-precipitation)
Treatment	Nitrification Denitrification Phosphorus removal



Why did they upgrade WWTP?

In the late 80's the legal requirements for N-elimination for German WWTPs became stricter. Therefore, Geiselbullach operators needed to convert the existing conventional activated sludge system into IFAS by testing different types of growth media systems. In 1996, after some years of experiments, the operator installed Cleartec® BioCurlz in both aeration tanks. For more than 17 years the IFAS system provided the required effluent quality but the aluminum metal cages, where the media was installed, corroded over the time and the ceramic diffusers failed. For these reasons, the operator decided to replace the complete system but to continue using the technology, due to the satisfactory results achieved with Cleartec®. The new installation began in spring 2013 and was concluded some months later.

Which results are reached by IFAS?

Parameter	1987* (without fixed bed)			2014* (with Cleartec®)		
	Inflow [mg/l]	Discharge [mg/l]	Biological efficiency [%]	Inflow [mg/l]	Discharge [mg/l]	Biological efficiency [%]
COD	310	53	82.9	647	21	96.8
BOD ₅	172	11	93.5	235	1.5	99.4
NH ₄ -N	36	32	11.1	42	1.0 (Jan-Dec) 0.04 (May-Oct)	97.6 99.9

* Annual average



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