

22th INTERNATIONAL SPECIALIZED COURSE OPERATION AND CONTROL OF ACTIVATED SLUDGE PROCESSES USING MICROBIOLOGICAL ANALYSIS Perugia - Italy

FILAMENTOUS MICROORGANISMS IN ACTIVATED SLUDGE

THIOTHRIX I, II

		UNDER PHASE CONTRAST OBSERVATION	
		THIOTHRIX I	THIOTHRIX II
OBSERVATION AT 1000X	Sulfur Granules	<i>In situ</i>	+ , -
		<i>S Test</i>	+
	Other Cell Inclusions	PHA	PHA
	Filament Diameter	1.6 - 2.5 μm	0.8 - 1.4 μm
	Filament Length	100 \rightarrow 500 μm	50 - 200 μm
	Filament Shape	Straight, smoothly curved	Straight, smoothly curved
	Filament Location	Extends from floc surface	Extends from floc surface
	Cell Septa clearly observed	+	+
	Indentations at Cell Septa	-	-
	Sheath	+	+
	Attached Growth	-	-
	Cell Shape and Size	Rectangles 0.8 - 1.4 x 1.5-3.0 μm	Rectangles 0.8 - 1.2 x 1.0 μm
	Notes:	Rosettes, Gonidia	Rosettes, Gonidia
			UNDER DIRECT ILLUMINATION
Gram Stain		- , +	- , +
Neisser Stain	<i>Filament</i>	-	-
	<i>Granules</i>	- , +	- , +

Phylogenetic affiliation:

Gammaproteobacteria

Causes:

- High rbCOD
- N deficiency
- Sulfide

Remedies:

- (High rbCOD):
Selector, Cl_2
- (N deficiency):
Add N source
- (Sulfide):
Anoxic/aerobic
selector, eliminate
septicity/sulfide, Cl_2

