



# Evodos Centrifuge

## Chemical free separation using Evodos Spiral Plate Technology

**Project:** CS-01-07  
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**Partners:** Evodos, Cosun, DSM, Nedmag Industries, NL GUTS  
**Budget:** 50 K€  
**Duration:** Successfully completed

### Incentive:

For the participating companies a cost improvement is the incentive, either by achieving a higher dry solid content in the discharged solids or by obtaining a more clean centrate.

### Objective:

#### Nedmag

At NedMag Magnesium-Hydroxide is separated out of the process liquid and concentrated to a high dry solid percentage. For NedMag a successful test generates a higher DS% than the drum filters. This might result in replacing the energy consuming drum-filters and to use less energy in the subsequent drying/evaporation process.

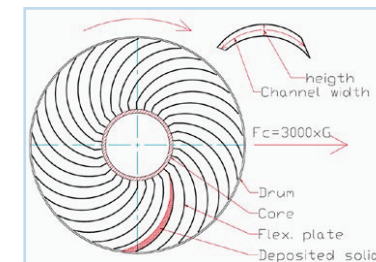
#### Cosun

At Cosun a process stream is clarified. For Cosun a positive test result will mean a more cost effective water treatment process.

#### DSM

The feed stream is a biomass containing liquid. The objective is to clarify this liquid. For DSM a positive test result means that they might replace their current filtration technology.

Spiral Plate Technology, top view, (H.A. Boele, 2007)



### Approach:

Tests have been executed with the Evodos Spiral Plate Technology demonstration machine.

Characteristics of the Evodos technology

- Curved vanes which can open for superb discharge performance.
- High separation efficiency due to the smallest settling velocity possible in combination with long delay times and Y-flow (no cross-flow).
- No need to apply chemicals to separate suspendable solids.
- Self adjusting on changes in process parameters, no fixed interface level to be set.
- Performance is independent of the size, shape, consistency (e.g. sticky, greasy, abrasive) or permeability of the solids.

### Results:

At Nedmag the tests proved that Evodos improves the dry solid content with 13%. Although this leads to substantial reduction in energy for drying, calculations showed there is no positive business case since the dry solid content of the feed is too high, At Cosun the objective was to achieve a centrate with a dry solid content lower than 1%. With a decantable dry solid content of 0,68% Evodos did meet the test objective. Based upon results in the downstream process Cosun had to set a new objective. It will be investigated if Evodos machines can meet this new objective.

At DSM is showed that the Evodos technology is able to produce a clear centrate. The test objective is achieved.



Evodos SPT machine, closed and open view