Louvain Technology Transfer Office

TECHNOLOGY OFFERS | MATERIAL TRANSFER SOFTWARE LICENSE SERVICES

ENGINEERING | BIOTECH / HEALTH | MATERIALS / ENERGY | GREEN / FOOD

Energy-efficient Continuously Variable Transmission allowing ratio variation at rest

KEYWORDS

- Variable transmission
- Efficient ratio variation
- Miniaturizable

Invention

The invention is an energy-efficient continuously variable transmission (CVT).

This CVT is a modified planetary gear, whose planet are conical and mounted on inclined shafts, and the ring is made of contiguous diabolo-shaped rollers. This configuration allows moving the contact point radius on the cones and then modifying the transmission ratio. Thanks to the rollers, the ratio can be changed with almost no effort even at rest.

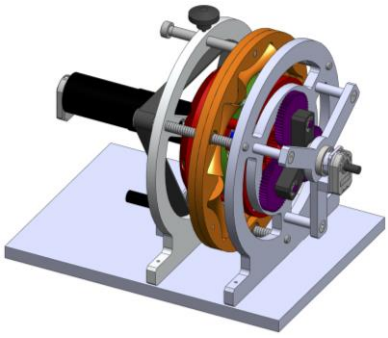
Combined with a traditional planetary gear, this mechanism can achieve transmission ratio ranging from positive to negative values.

Technology market

Power transmission mechanisms for:
- ground (car, motorcycle, bike) and sea transport applications,
- advanced drive transmission systems,
- (legged) robotics,
- …

Key figures

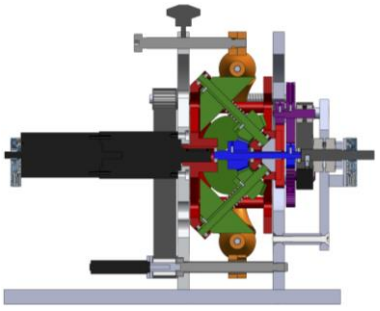
- Energy-efficient and continuous transmission ratio variation.
- Transmission ratios ranging from negative to positive values.
- Technology scalable from low to medium-high power applications.



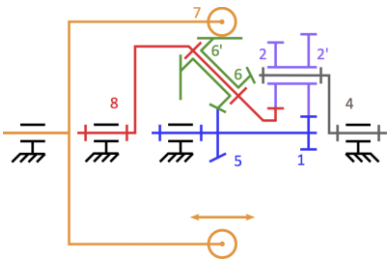
Technology Status

Proof-of-concept successfully validated for medium size (220mm diameter) and small size (110mm diameter) devices.

Ongoing tests on prototypes to evaluate the torque transmission capability and the mechanism efficiency. Preliminary results displayed high efficiency since there is no sliding when changing the transmission ratio.



This work is the subject of a:
- UK patent application filed on the 5th of May, 2014 (GB1407887.7)
- PCT patent application filed on the 30th of April, 2015 (PCT/EP2015/059572).



Kinematic Diagram

Preferred partnership

Joint developments, licensing opportunities

INTERESTED BY THIS TECHNOLOGY ?

Please contact :

Gauthier Boels
Senior Business Development Manager
+ 32 (0) 10 390 027
g.boels@sopartec.com
www.ltto.com

UCL Université catholique de Louvain

Louvain Technology Transfer Office