

TCP on Advanced Materials for Transportation (AMT TCP)

Created in 1979, the AMT TCP focuses on materials critical to fuel efficiency improvement for current and future transportation technologies. The AMT TCP conducts co-operative research activities on friction reduction, waste heat recovery, and lightweighting of vehicles. The TCP work programme includes the development of standard test methods, testing, demonstration and design guidelines.

Main areas of work

[Friction reduction in vehicles](#)

[Thermoelectric materials](#)

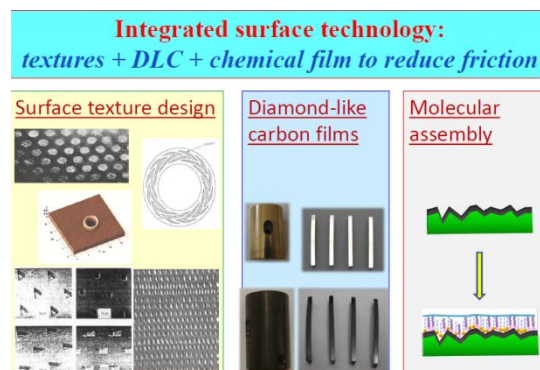
[Model based coatings](#)

[Multi-material vehicle lightweight structures, materials joining technology](#)

Automotive glazing, weight reduction, materials substitutions

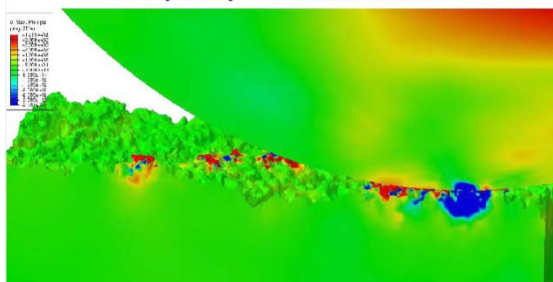
Key accomplishments (2017-2018)

- Achieved 2.4% fuel economy gains via ultra-low viscosity lubricant
- Completed thermoelectric module efficiency round robin testing to establish a new measurement standard
- Established new project on automotive glazing
- Feasibility of model-based materials development



Integrated surface technology describing the textures, diamond-like carbon (DLC) thin films and the organic thin films on top of the DLC film (Source: Professor Stephen Hsu)

Smooth diamond ball sliding on rough DLC coated steel flat surface – high load, first principal stresses shown



A sphere contacting DLC coating showing substrate damage. (Source: Dr. Hakala Timo, VTT)

Priorities and projects (2019 – 2020)

- Complete engine testing of surface friction materials technology
- Further thermoelectric module efficiency round robin testing

Multilateral collaborations

- The AMT TCP is a task-shared agreement. Joint activities are initiated and carried out in areas of common interest to the members, and to the related material research expert network of 34 research institutes and universities under the AMT TCP. The AMT TCP stands ready to explore opportunities of collaboration with other TCPs.

Membership



Australia



Canada



China



Finland



Germany



Israel



Korea



United
Kingdom



United
States

Why should your organisation become a member of the AMT TCP?

The fuel economy of internal combustion engine technologies can significantly contribute to near- and medium-term carbon emission reduction goals. The AMT TCP provides a forum for experts to exchange information on improving fuel economy at regional and local level as well as to address global innovation priorities for material technologies.

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