



Technology Summary: Novel Vehicular Brake Pads

Opportunity Statement

Brake pads are key components in the braking system of vehicles. During braking, they convert the kinetic energy of the vehicle to thermal energy by friction. Depending on their material compositions, brake pads can be classified as semi-metallic, low-metallic or ceramic with differing levels of braking performance. Brake pads have the following requirements:

- Maintain a sufficiently high level of friction with the brake disc
- Exhibit consistent friction coefficient at both low and high temperatures resulting from the braking process

Problem

Conventional brake pads are comprised of resins that break down at high temperatures. During emergency or continuous braking, the surface of the brake pads reaches a temperature of 500 to 700 °C due to the friction process. This causes the resin to decompose, forming a thin film on the brake pads which reduces the friction coefficient and contributes to brake failure. At the same time, thermolysis of the resin also reduces wear resistance of the brake pads and their effective lifetime.

Therefore, there is a need for a technological solution which cost-effectively addresses the limitations of lifetime and performance of brake pads in vehicular applications.

360ip's Partner Solution

360ip's partner has developed brake pads with proprietary material compositions optimized for different applications. These material compositions provide advantages in thermal stability, lifetime duration and cost.

The partner's solution addresses the limitations of conventional brake pads through the following:

- Use of ceramic binder to enhance thermal resistance
- Optimized material compositions that enhance performance of brakes for different requirements

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Compared to conventional brake pads, the partner's technology can provide the following advantages:

- Better safety and reliability
- Longer lifetime
- Reduced braking noise
- Lower cost

Patents

360ip's partner has three pending patents on this novel brake pad technology, covering semi-metallic, low-metallic and non-metallic brakes.

360ip is seeking interested parties for the further development and commercialization of this technology-based product.



Brake Pad

For additional information, contact:

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