

SIP# 263 Round 2

Title: Computational modelling of precious metal alloys

Acronym: CMPMA

Submitted by:

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Theme: Transport (including aeronautics)

Focus Area: Aeronautics and air transport

Type of project: R&D project (small scale)

Summary: L

Expertise offered: L

Previous FP involvement: None

Consortium status: L

Expertise sought: L

Related projects: International bilateral cooperation
South African national R&D programmes

SIP# 284 Round 2

Title: Multi- Tread Tyre

Acronym: MTT

Submitted by:

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Theme: Transport (including aeronautics)

Focus Area: Surface transport (rail, road and waterborne)

Type of project: R&D project (small scale)

Summary: Global patent rights have been secured on a tyre retread technology which would effectively eliminate the need for vulcanisation bonding of the tread to the casing, and enabling continuous use of the casing for possibly the entire life of the vehicle, (thereby increasing the mileage of the casing more than four times), with consequent energy savings, improved environmental friendliness, massive cost reductions to both the manufacturer and ultimately the user/consumer. From a manufacturing perspective the complete compatibility of this latest technology with existing tyre manufacturing equipment makes cost of entry affordable and extremely attractive. Major savings will be achieved by off road construction equipment, long haul trucks, cars and motor cycles. Proof of concept has been done, but more testing and development is required .

Expertise offered: Managerial and basic mechanical expertise. The management team is small, but solid and consists of well experienced executive management. The business model requires the technology to be licensed to an industrial partner upon completion of the development work.

Previous FP involvement: None

Consortium status: Management team, and Stellenbosch Engineering Faculty.

Expertise sought: Mechanical and Chemical Experts that could assist in testing the extreme limits of the new technology.

Related projects: None

SIP# 298 Round 2

Title: No project specified. This is only to register for projects as discussed with Mmboneni Muofhe

Acronym: Carbonfiber

Submitted by:

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Theme: Transport (including aeronautics)

Focus Area: Aeronautics and air transport

Type of project: R&D project (small scale)

Summary: No project specified. This is only to register for projects as discussed with Mmboneni Muofhe

Expertise offered: 25 years experience in high tech composite manufacturing and design, improvement or new development of production technologies

Previous FP involvement: None

Consortium status: No project specified. This is only to register for projects as discussed with Mmboneni Muofhe

Expertise sought: No project specified. This is only to register for projects as discussed with Mmboneni Muofhe

Related projects: None

SIP# 325 Round 2

Title: Multimodal passenger transport planning

Acronym: MuPTraP

Submitted by:

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Theme: Transport (including aeronautics)

Focus Area: Surface transport (rail, road and waterborne)

Type of project: R&D project, including technology demonstration (large scale)

Summary: Being considered the heartbeat of the South African economy, transport not only requires the movement of goods from point of manufacture to point of consumption, but even more importantly is responsible to move people around so they can actively and constructively participate in the economy. The strategic public transport network planning in South Africa, and developing countries, have lagged other transport development initiatives. Where planning is concerned, planners often use obsolete models and policies that are based on international environments without taking the South African particularities into account, such as a dynamic taxi (paratransit) network serving more than half of the commuters, and the intricate travel behavior of commuters as a result of the unique urban layout in South Africa. It is imperative that an appropriate model for South African conditions be developed, yet that is aligned with international best practices. The IE@UP research team ensures focused research with a dedicated team working on a well-defined program. The three-year research program has its objective to develop and test the modeling logic of a complex simulation tool by integrating state of the art research that has until now only been considered in isolation by local and international communities.

Expertise offered: Agent-based simulation has been successfully used in developing proof-of-concept results. The cross-disciplinary team addresses complex integration between information and communication technology, optimization algorithms, simulation, behavioral science, and data access.

Previous FP involvement: None

Consortium status: Existing partners: Tshwane University of Technology, private company Techso (Pty) Ltd. The Council for Scientific and Industrial Research's (CSIR) Built Environment division interested.

Expertise sought: Best practice expertise is sought on multimodal public transport planning: specifically on commuter behavior and decision making. Expert guidance in establishing mechanisms to capture and validate model data is also required.

Related projects: None

SIP# 335 Round 2

Title: Repeatable and Efficient Manufacture of Complex Shaped Advanced Composite Parts

Acronym: P001

Submitted by:

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Theme: Transport (including aeronautics)

Focus Area: Aeronautics and air transport

Type of project: R&D project, including technology demonstration (large scale)

Summary: The primary aim of the project is to identify (and in certain situations develop) appropriate materials, design methods and manufacturing processes to support the production of complex-shaped components using high-performance composite materials. In general, the project aims to achieve the following: 1. Facilitate the selection of the best material system and production process early in the design-phase. 2. Develop low-cost prototyping techniques to reduced development time and associated costs. 3. Develop techniques for the repeatable manufacture of complex-shaped components. The project is specifically aligned with the international trend towards the utilisation of out-of-autoclave materials and manufacturing methods including the use of resin transfer/infusion based processes. The cost and performance advantages associated with the implementation of these technologies have been demonstrated in a number of programmes (development and production) and it is clear that products will derive substantial benefit from these particular technologies within the next five to ten years. Major project activities are defined as follows: · Identify a select set of candidate out-of-autoclave material systems (prepreg and liquid) for present and future use. · Develop and publish a material property database (including design allowables) for materials identified above. · Develop low-cost prototyping techniques for the manufacture of complex-shaped high performance components. · Develop generic (non product specific) manufacturing methods (including tooling and preforming) suitable for out-of-autoclave processes.

Expertise offered: - Identify candidate materials systems for present and future applications - Develop materials properties database - Develop low-cost methods for prototyping of complex shaped high-performance composite components - Develop manufacturing processes for production of complex shaped high-performance composite components
Technology Analysis Status of Technology in SA Life Cycle Emerging X Growth X Mature Declining Rest of World Emerging Pacing X Key Basic Technology Impact Faster Processes X Fewer Processes X Cheaper Processes X Env Processes X Higher Quality X

Previous FP involvement: None

Consortium status: Agreement of co-operation from all consortium members, formal contracting in progress. Five SA Universities, CSIR (Research institute), 5 Industrial partners have shown their commitment.

Expertise sought: Industry Need as a Driver: A. Materials and Material Properties; B. Manufacturing and Process Support Technologies (Prototyping) ; C. Liquid Moulding/Manufacturing Processes (LMP) and Dry Fiber Preforming

Related projects: None