Technical Cooperation Form
// Partner Search Form

Company/Organization Name **Country**	**Sejong Industrial** (Leading Organization) & **UNIST** (Ulsan National Institute of Science and Technology, Participating Organization)* South Korea **Full consortium to be determined after the preliminary project scope is decided.*		
Contact Person	Taeseok Jeong	**Job Title**	Professor/Director
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Company/Organization Description	**Sejong Industrial** Vehicle Part Manufacturer (Exhaust system and Hydrogen Fuel Cell Components and H2 Sensor)/ large enterprises, over 800 employees with over €300 million turnover **UNIST** University / 4,700 students (1,800 graduate) and 450 professors, over €90 million research fund each year		
Website	● www.unist.ac.kr ● www.sjku.co.kr		

1. Main field of work:

Developing key components for the hydrogen fuel cell stack and its auxiliaries for the use of hydrogen electric vehicles through Czech-South Korea R&D collaboration. The level of development can be either the localization of the current products of Sejong Industrial or the advancement of the current state-of-art technology.

Sensor

- Hydrogen sensor to detect any leakage in the fuel processing system, the H2 storage tank, the fuel cell stack
- Water level sensor in the water trap assembly.
- Pressure transducer in the fuel processing system and in the H2 gas line
- Integrated sensor for pressure & temperature in the thermal management system

Auxiliaries

- Water trap assembly
- Pressure relief valve in the fuel processing system

PEMFC fuel cell

- Mobile fuel cell generator
- Metal bipolar plate for PEMFC fuel cell stack

Hydrogen monitoring and safety management system in the hydrogen station, the fuel cell power plant, and the fuel cell vehicles

2. Detailed information about our project

- Localization development of the current products of Sejong Industrial
- The advancement of
    - the current state-of-art technology in the area of fuel cell stack design including bipolar plate,
    - fuel cell manufacturing technology,
    - development of the use-cases of fuel cell application such as mobile generation, other vehicle types (truck, bus, farming tractor, etc.)

3. Keywords:

- Metal Bipolar Plate Coating
- Hydrogen Sensor Chip
- Fuel Cell System

4. Technology Description

- Coating material development and new manufacturing method for the bipolar plate in PEMFC
- Commercialization technology for the H2 leak detection sensor and the high concentration H2 sensor chip
- New business model development using a system solution consisted of the current product line-up

5. R&D partners required for cooperation

- universities
- companies
- research institutions in Czech Republic

6. Technology Advantages

- Improved product competitiveness through new technology development in the area of performance, durability, and cost over the current products

7. Cooperation Requirements

- To create opportunities to build new business through collaboration in the area of fuel cell system, partners would be recommended to have diverse customer base and experience and capability in the development and manufacturing of fuel cell system
- It would be desirable to have core technology in bipolar coating material and H2 sensor chip design to enhance the product competitiveness

8. Potential Partner Requirements

- Vehicle part manufacturer which is planning to expand its portfolio into Hydrogen fuel cell vehicle as a complete fuel cell engine supplier or a key component supplier of the fuel cell
- Company which wants to develop new business model utilizing the fuel cell generator
- Company which want to provide a safety solution incorporating hydrogen sensors and management platform

9. Potential Ways of Cooperation */optional/*

■ Technical Transformation ■ Technology License
■ Cooperative R&D ☐ Mergers and Acquisition
Manufacturing Technology; Equipment Transfer
☐ Equity Investment
☐ Others _____