<table>
<thead>
<tr>
<th>TSC Category</th>
<th>Product Development and Testing</th>
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<tbody>
<tr>
<td>TSC</td>
<td>Research and Development</td>
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<tr>
<td>TSC Description</td>
<td>Optimising manufacturing processes, material developments and development of new product line</td>
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<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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<tbody>
<tr>
<td>ELE-NPD-5004-1.1</td>
<td>Formulate research methodology for engineering team to achieve the research aims by overcoming potential constraints or critical requirements</td>
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<tr>
<td>ELE-NPD-6004-1.1</td>
<td>Synergise Research and Development (R&amp;D) to drive business strategy and manage product innovation</td>
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**Knowledge**

- Areas in which research can be undertaken by the organisation
- Factors that may have a critical effect on the methodology
- Types of constraints that may affect the research
- Regulations, directives and guidelines that may affect research
- Contingency plans
- Various research methods that may be used and where to obtain specialist knowledge or expertise
- Statistical analysis techniques used in processes or data
- Factors in determining the most effective research methods
- Time scales required for research
- Resources required for research

- Organisational innovativeness and idea creation
- Innovation strategy and how it is executed by the new product portfolio
- Methods for managing capacity and prioritising the new product portfolio in the R&D pipeline
- Measurement of project performance and overall innovation performance
- Methods for managing a portfolio of processes for different types of innovations (from incremental to radical)
- Co-ordination and effective organisational structures for product innovation
- Architectures, platforms and cost management in R&D
- R&D partnerships and alliances: strategies and processes
- Transferring knowledge pertaining to R&D
- Innovation culture and managing professionals
### Abilities

- Confirm the aims and objectives of the research
- Identify factors that may have an impact on the research methodology
- Assess potential constraints on research and develop contingency plans to overcome them
- Select research methods which best achieve the aims and objectives
- Prioritise and schedule research activities that are necessary
- Calculate the resources and time scales required to implement the methodology
- Produce detailed plans of research and record them in organisation information systems
- Establish benefits and opportunities of collaborating with others in conducting research

- Build tools to translate business strategy into a portfolio of innovation initiatives
- Measure the performance of uncertain and long-term initiatives
- Build processes and structures to enhance the capability of the organisation to generate creative ideas for different purposes and with different degrees of value proposition