TECHNOLOGIES MARKETED

(Rs. In lakhs)

<table>
<thead>
<tr>
<th>Licensee</th>
<th>Date of Transfer</th>
<th>Technologies Transferred</th>
<th>Premia</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/s J Ragrau Instruments, New Delhi</td>
<td>11/05/2004</td>
<td>Force Transducer</td>
<td>106000.00</td>
</tr>
<tr>
<td>M/s Konark Tar Products Pvt Ltd, Durgapur</td>
<td>31/11/2004</td>
<td>Impregnating Grade Coal Tar Pitch</td>
<td>220400.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>326400.00</td>
</tr>
</tbody>
</table>

INFORMATION ABOUT TECHNOLOGIES

1. Force Transducer

Force Proving rings are presently in use effectively as force measuring/force proving instruments but their use is limited due to their inherent disadvantages like cumbersome to use (in most cases for specific forces only) temperature sensitive and are unable to measure the low forces with accuracy. These can not be used for automation of the processes and a number of proving rings are required to measure the forces over a wide range and need a strict temperature control during measurements and are subjected to the operators technical competency being analogue.

The strain gauge force transducer to measure the applied forces up to 3MN are available in the international market having an overall uncertainty of ±0.02% with a digital display system of 1000000 (ten lakhs count).

The force transducers are available within country which are capable to measure forces in mid region with a repeatability and an overall uncertainty in the measurement not better than ±0.05% and ±0.1% respectively.

The present development would provide a reliable accurate temperature compensated user friendly force transducer for wide range of forces. This would meet the aspiration of the user industries and the quality control laboratories to produce the quality product in case of the former and to have the national traceability and upgrade the quality of the product they manufacture in the later case.

Strain gauge force transducer having an accuracy and repeatability better than ±0.04% and ± 0.005% respectively to measure applied forces up to 500 kN would be available through this development.

2. Impregnating-grade Coal Tar Pitch

Coal tar pitch is an extremely important material used in large quantities as binder and impregnant in the manufacture of conventional carbon products, such as graphite electrodes for the production of steel in electric arc furnaces, and prebaked anodes and soderberg paste for the production of aluminium.
The basic difference in the behaviour of the binder-grade and impregnating-grade coal tar pitches is with respect to their characteristics, particularly the quinoline and toluene insolubles contents. Thus, whereas the quinoline insolubles (QI) and toluene insolubles (TI) contents for the binder-grade pitch usually lie in the range of 8-14% and 28-40%, respectively, the same for the impregnating-grade pitch are 4% (max.) and 16-24%, respectively.