

# **A G R E E M E N T**

**between**

**and**

**TELEMARK TECHNOLOGICAL RESEARCH AND  
DEVELOPMENT CENTRE (Tel-Tek)  
DEPARTMENT OF POWDER SCIENCE AND TECHNOLOGY**

**regarding**

**A Programme of Research in Powder Science and Technology**

**(POSTEC)**

## **ATTACHMENTS**

1. Agreement Form
2. General Conditions
3. Annex A.: Standard Services and Charges
4. Annex B: Participant's Annual Contribution
5. Annex C: Benefits for Participants in the POSTEC programme and rules for upgrading the membership
5. Annex D: Hourly Rates

# AGREEMENT

between Telemark Technological Research and Development Centre (Tel-Tek), Department of Powder Science and Technology (POSTEC), a Norwegian foundation with its main office in Porsgrunn, Norway (herein after called the Company) and

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(hereinafter called the Participant). The following Agreement has been concluded regarding the Participant's participation in the joint industrial research and development programme called:

## POSTEC

(A programme of research Powder Science and TEchnology)

with the objective of *improving the level of understanding of the nature of particulate materials and of their behaviour in industrial processes and operations and the communication of such understanding, together with information on similar progress elsewhere in the world, to Nordic industries.*

### 1. SCOPE OF AGREEMENT

1.1 This participation Agreement is an agreement between the Company and one Participant

The Company will perform the projects described under clause 2.2 on page 5, to the extent that available funding permits, and the Participant will pay a proportion of the total budget, specified in Annex B, in accordance with the provisions of the General Conditions Clause 7.

Additionally the Company will provide the services listed in Annex A.2.

1.2 This Agreement consists of:

- a) This Agreement document
- b) The General Conditions attached to this Agreement document
- c) Annex A: Standard Services and Charges
- d) Annex B: Participant's Annual Contribution
- e) Annex C: Benefits for Participants in the POSTEC programme and rules for upgrading the membership
- f) Annex D: Hourly Rates
- g) Annex E: Membership Advantages

In case of any discrepancies between the documents specified in Clause 1.2, the priority between them shall be the order the documents are listed herein.

**2. PROGRAMME ADMINISTRATION**

- 2.1 Head of Dept. of Powder Science and Technology (POSTEC) will act as Programme Manager for the Company. His authority is defined in the General Conditions, Clause 6.2.
- 2.2 The following will act as Representatives for the Participant at the Annual General Meeting

(Chief Representative),

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(See Clause 4.1 of the General Conditions)

The authority of the Representatives is defined in the General Conditions, Clause 4.2

**3. NOTICES**

- 3.1 Notices to the Company shall be sent to following address:

Tel-Tek  
Head of Dept. of Powder Science and Technology (POSTEC)  
Kjølnes Ring  
3918 PORSGRUNN  
Telephone (Sw.board): +47 3557 4000  
Telefax: +47 3557 4140

- 3.2 Notices to the Participant shall be sent to the Chief Representative at the following address:

Date: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
(The Company)  
sign.

\_\_\_\_\_  
(The Participant)  
sign.

\_\_\_\_\_  
(Position)

\_\_\_\_\_  
(Position)

# **GENERAL CONDITIONS OF AGREEMENT FOR THE JOINT INDUSTRIAL RESEARCH AND DEVELOPMENT PROGRAMME**

## **POSTEC**

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## **1. APPLICATION OF THESE CONDITIONS**

These general conditions shall apply between the Parties unless otherwise expressly agreed in writing between them.

## **2. DEFINITIONS**

In this Agreement the following words shall have the following meaning:

### **2.1 The Company**

Telemark Technological Research and Development Centre (Tel-Tek), Department of Powder Science and Technology (POSTEC).

### **2.2 The Programme**

The work will be divided into sub-programmes to be carried out by the Company and the same will be communicated to the participants as soon as it is finalised in consultation with the members.

### **2.3 Participant**

Any company having a place of business in any one of the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) that has signed this or any other equivalent Agreement in which it has agreed to partake in the sponsoring of the Programme, and which has been accepted by the Company.

### **2.4 Parties**

All Participants and the Company.

### **2.5 Party**

Any Participant or the Company.

### **2.6 Affiliate**

Any parent company controlling a Participant, and all present and future companies in which a Participant or its parent company owns or controls 50% or more of the stock. An Affiliate may participate in the programme for the payment of the minimum annual contribution (currently NOK 35.000) and shall have rights to discounts on research contracts placed with the company as described in Clause 9.2. Companies which operate under the same name, but have clearly identifiable products, operations or geographic locations, shall also be classified as Affiliates for the purposes of this agreement, and shall have to pay the minimum annual contribution to participate in the Programme.

Companies with an annual turnover of less than NOK 20.000.000 may participate in the programme with an annual contribution of NOK 17.500.

2.7 Annual General Meeting (AGM)

A meeting of representatives of the Parties at which decisions regarding the Programme are taken (see Clause 4).

2.8 Extraordinary General Meeting (EGM)

A meeting called by five of the Parties as in Clause 4.4.

2.9 Sub-programme Commencement

Sub-programme Commencement will normally be the 1st January of the year following the AGM at which Sub-programmes are discussed, or the date by which members agree to choose between the alternatives presented at the AGM.

2.10 Sub-programme Termination

The date when all reports are submitted by the Company and all the financial accounts on the Sub-programmes have received the Annual General Meeting's approval.

2.11 Normal Operations

As used herein, the term "Normal Operations" is meant to be construed broadly to include all of the respective Parties' activities which are presently or may reasonably become part of their business. (See, however, Clause 8.1.)

2.12 Representative(s)

Person(s) nominated by the Parties to represent them at the AGM.

### **3. THE PURPOSE OF THE AGREEMENT**

The purpose of the Agreement is to regulate the financial relations between the Parties regarding the Programme, and to define the rights and obligations of the Parties with respect to the performance of the Programme and the use of its results.

### **4. ANNUAL GENERAL MEETING (AGM)**

4.1 The Company shall call an Annual General Meeting of the Parties at least once every calendar year. Each Participant shall have the right to send one representative to the AGM for every NOK 35.000 (NOK 17.500 for small companies) of contribution made annually to the Programme by the Participant.

Each participant shall have one vote for every NOK 35.000 (NOK 17.500 for small companies) of annual contribution. The Company shall have the right to have one vote for every NOK 140.000 of the Programme budget. At least 1/2 of the valid votes must be cast for decisions at the AGM to be valid.

- 4.2 One of the Representatives (the Chief Representative) shall be given full authority to represent a Participant in all matters within the jurisdiction of the AGM, and shall cast all the votes to which the Participant has a right. Affiliates will also have one vote for every NOK 35.000 (NOK 17.500 for small companies) of annual contribution, which may be cast by a representative selected by the Affiliate.
- 4.3 The AGM shall have the power to:
- a) approve or disapprove or make amendments to work plans proposed by the Company
  - b) make recommendation to the Parties concerning changes in the overall or individual budgets
  - c) make recommendation to the Parties concerning the objective of the Programme as defined on page 2 of this Agreement
  - d) make recommendations to the Parties concerning early termination of sub-programmes
  - e) review progress of sub-programmes and make recommendations regarding any changes thought desirable
  - f) recommend changes to the substance of the Agreement
- 4.4 An Extraordinary General Meeting (EGM) may be called by any five of the Parties at any time. An EGM shall have the same powers as an AGM.
- 4.5 The venue of the AGM or an EGM shall usually be Porsgrunn, Norway.
- 4.6 The Company shall have the right to appoint the Chairman and Secretary of an AGM or EGM.
- 4.7 Decisions at AGMs or EGMs shall be made by a simple majority of the votes of the Parties present. In the event of a tie the Chairman shall have the casting vote.
- 4.8 Recommendations made by an AGM or EGM and accepted by 2/3rds of the Parties shall be binding on all Parties.
- 4.9 Costs incurred by Participants or their Representatives in connection with any meeting, such as travel expenses, hotel bills etc. shall be borne by the Participants.
- 4.10 Participants with a special interest in a particular sub-programme may set up smaller groups, with a Company specialist as the leader of such groups. Such groups may meet several times a year, the frequency to be decided by the members themselves.

## **5. PROGRAMME EXECUTION**

- 5.1 The Company is responsible for the execution of the Programme in accordance with the work plan and budget. The Company is, however, entitled to sub-contract specific parts of the Programme to other institutes or firms.
- 5.2 The Company shall carry out the execution of the Programme in a diligent and professional manner, and shall make every effort to achieve the objectives of the Programme within the time and budgetary limits set forth in this Agreement. The

Company will, however, not be liable in the event of the objectives of the Programme not being met.

- 5.3 Any equipment purchased or constructed for the Programme shall become the property of the Company.
- 5.4 One copy of a technical summary report which briefly summarizes progress of work and potential findings of the Programme work shall be submitted by the Company to each Participant one month before the AGM.
- 5.5 Preliminary technical reports shall be submitted to each Participant on completion of each specific part of the Programme. These reports shall present each section of completed work in sufficient detail to form a basis for the final reports.
- 5.6 Final reports for each sub-programme shall be submitted to all interested Participants at Sub-programme Termination, within time limits agreed by the AGM.

## **6. PROGRAMME MANAGER**

- 6.1 The Company will appoint a Programme Manager, who shall be one of its employees, prior to Programme commencement. The Programme Manager shall have day-to-day responsibility for the execution of the Programme on behalf of the Company.
- 6.2 The Programme Manager shall attend all Annual General and Extraordinary General Meetings and shall be responsible for:
  - a) keeping the minutes of each AGM
  - b) presenting the Company's proposals for work plans and budgets to the AGM
  - c) executing the Programme in compliance with work plans and budgets as approved by the AGM
  - d) coordination of the various activities of the Programme.
  - e) reporting the technical and economic progress of the Programme to the AGM and to the Participants.

## **7. PAYMENTS**

- 7.1 The Participant agrees to contribute financially to the Programme by the payment of an agreed annual contribution in integral multiples of NOK 35.000 (NOK 17.500 for small companies).
- 7.2 In the event that less than the estimated funds are obtained, the overall budget will be reduced and the work to be performed adjusted accordingly. Alternatively, the funds from one project will be transferred to another.
- 7.3 Upon signature of this Agreement the Company is entitled to invoice each Participant in advance for its annual share as specified in Annex B. Such contributions, once made, are non-refundable.

7.4 Payment is to be made within 14 days of receipt of the invoice. Interest on late payment will be charged at prevailing rates.

## **8. USE OF RESULTS AND CONFIDENTIALITY**

8.1 The Company shall be the sole owner of the technology, know-how and results, including computer programmes developed during the execution of the Programme. Each Party shall have equal rights to use the results of the Programme within the framework of its Normal Operations including research activities, and the Normal Operations of its Affiliates and of companies or production groups operated by the Party or any of its Affiliates. The Company grants to each Participant an irrevocable, world-wide, non-exclusive license under any patents in respect of the results of the Programme which may be filed by the Company, to use the said results within the framework of its Normal Operations and of the Normal Operations of its Affiliates and of companies or production groups operated by the Party or any of its Affiliates. Commercial exploitation of such patents is, however, prohibited (see Clause 8.2).

The license shall be royalty-free unless the use of any patents or patentable inventions is restricted by the Norwegian Act on employee's inventions of April 17, 1970.

8.2 The Company shall have the right to award licences to participating as well as non-participating companies interested in commercial exploitation of know-how or discoveries made as a result of the Programme subject to the approval of the AGM which shall not be unreasonably withheld. The royalties from such licence agreements will be used to further the objectives of the Programme.

Participants in the Programme shall receive priority in being considered as partners in such licence agreements. The Company shall waive royalties in respect of purchases by Participants from such licensees.

8.3 All results of the Programme shall be treated as confidential by the Parties.

Sub-contractors entrusted with execution of part of the Programme shall sign a confidentiality agreement to the same effect.

The period of confidentiality shall be a period of two years from the date on which results are presented to the AGM or a report is made available to members. After the end of the period of confidentiality, Parties are free to treat the results of the Programme without restrictions on confidentiality.

The obligation to maintain confidentiality of results obtained under this programme shall survive the cessation of a Party's membership in the programme.

The confidentiality obligation imposed upon each Party by this Agreement does not apply to information which:

- a) is or becomes part of the public domain through no fault of a Party
- b) can be proved to have been in the possession of the Party or in the possession of one of its Affiliates prior to the receipt of the information under this Agreement
- c) can be proved to have been received by the Party or its Affiliates from a third party

- without a confidentiality obligation
- d) has been developed by the Party or its Affiliates as a result of activities carried out independently of the Programme, and without access to technical information made available under this Agreement
- 8.4 During the confidentiality period specified in Clause 8.3, each Participant has the right to divulge data from the Programme to clients, consultants, contractors, members of production groups for which it is operator or technical assistant and relevant regulatory authorities and certifying agencies to the extent required by their participation in a specific project. Any Participant exercising this right shall require the recipient to sign a confidentiality agreement limiting the use and disclosure of the Programme data to a specific and named project only.
- 8.5 Sections of the Programme results of general scientific interest may, with the approval of the AGM, be published in professional fora, provided proper acknowledgement is made to the Programme and its sponsors. However, no Participant's name should be used without written permission.
- 8.6 If in its judgement the interests of the participants are best served by such an action, the data and results, obtained under the programme, may be exchanged by the Company with other bodies operating in the same field. Where such disclosure is made, the Company undertakes to ensure that such results are not disclosed to the public.

## **9. PARTICIPANTS BENEFITS AND RIGHTS**

- 9.1 The Company undertakes to keep up-to-date information on all developments in the fields covered by the Programme and shall make such information available to Participants on demand. Any costs associated with searches carried out using library or other data retrieval services are to be borne by the Participant.
- 9.2 Each Participant shall have the right to request the Company to undertake contract research in the areas covered by the Programme (which are listed in Annex A). Such research shall be the subject of a separate agreement. The Company shall grant a discount to the Participant on the labour component of all such research contracts as reflected in the special hourly rates for members of the Programme in Annex C. Additionally all Participants shall be entitled to a discount on the Standard Service Charges listed in Annex A.2. The discounts on contract research services will be in the form of lower than normal hourly rates as shown in Annex C.
- 9.3 The Company shall, either by itself or in cooperation with other organizations, arrange a series of courses at reasonable intervals in the fields covered by the Programme in order to promote an understanding of the subject areas in the Nordic countries.

## **10. LIABILITY**

- 10.1 The Company shall not be liable for injury to or death of any employee of any Participant or damage to or loss of any of Participant's property caused by the Company's or any sub-contractor's execution of the Programme and the Participant shall indemnify

and hold harmless the Company or any sub-contractor from any and all such claims against the Company.

- 10.2 A Participant shall not be liable for injury to or death of any employee of the Company or any sub-contractor or damage to or loss of the property of the Company or any sub-contractor during the execution of the Programme and the Company shall indemnify and hold harmless the Participant from any and all such claims against the Participant.
- 10.3 The Parties agree that the use of the results of the Programme shall be at the user's sole risk. Each of the Participants agrees to defend, indemnify and hold the Company harmless from any and all liability arising out of or resulting from its use of the results of the Programme.

## **11. INSURANCE**

The Company will agree to carry a general liability insurance in respect of any sum or sums the Company may be liable to pay according to the conditions outlined in Clause 10. The Company will, when required, produce to the Parties current documents as proof of this insurance. Such liability is restricted to the sum of NOK 1.000.000,- with respect to any one occurrence. This insurance is not applicable outside the Continent of Europe.

## **12. INDEPENDENT RESEARCH**

Nothing in this Agreement shall be construed as limiting the right of any Party to conduct independent research in any area including research within the scope of the Programme.

## **13. NEW PARTICIPANTS**

- 13.1 New Participants wanting to join the Programme after its commencement may be accepted by the Company at its discretion. Such new participants will have to pay the contributions currently in force.
- 13.2.1 By signing an agreement identical to this Agreement, New Participants will acquire the same rights and obligations as the other Participants.

## **14. FORCE MAJEURE**

Delay in or failure of performance of any Party hereto shall not constitute a default hereunder or give rise to any claim for damages if and to the extent that such delay or failure is caused by an occurrence beyond the control of the Party affected and which, by the exercise of reasonable diligence, the said Party is unable to prevent.

## **15. LAW**

This Agreement between the Company and the Participant shall be governed by Norwegian Law. Any dispute arising in connection with this Agreement, which cannot be settled by private negotiations between the Parties, shall be finally settled by arbitration in Oslo according to Chapter 32 of The Norwegian Civil Procedural Act of August 13, 1915.

## **16. VALIDITY AND CHANGES**

- 16.1 This Agreement will become effective upon signature by the Participant and the Company.
- 16.2 Changes to this Agreement may be recommended by the AGM, but require the written consent of 2/3rds of the Parties. The changes will be valid only in a form of an amendment to this Agreement. Changes in technical programmes are exempt from this regulation (see Clause 4.3 a).

## **17. DURATION AND TERMINATION**

- 17.1 This Agreement shall continue in force for a minimum period of one year from the date on which the agreed contribution is received, after which it is automatically renewed for one year at a time unless it is terminated in accordance with Clause 17.2 below.
- 17.2 Either of the Parties may terminate this Agreement by giving three months notice of the intention of so doing to the other Party. If the Agreement is terminated by a Participant within three months of the date when it is due to expire or later, such Participant agrees to pay the company a contribution equivalent to 25% of the annual contribution it had paid in its last full year of membership.

Annex A

**Standard Services and  
Charges**

(POSTEC members receive a 10%  
discount on these charges)

# Services and Charges

## Standard Services at Affordable Prices!

(POSTEC members receive discounts on the listed prices)

The first price is for the first powder sample. Prices in parenthesis are for further samples of the same or similar material using the same measurement conditions. Results are normally given as print-outs or test-sheets, in addition to a letter with a short summary of results. For a full scientific report with discussions of results and comprehensive documentation, we charge NOK 2500 extra. Results will normally be ready within 10 working days from receipt of powder. Contact us in advance for special prices on large numbers of samples or for "next day" measurements results.

**Please note:** Samples for characterization must be representative! (In terms of size, humidity etc.) Contact us for advice on proper sampling when in doubt. Additional costs for sample splitting of very large samples is NOK 2.000.

<b>Flow Properties for Silo Design - Gisle Enstad (35575218/56301308)</b>	
<b>Jenike flow function.</b> Four tests are necessary to determine a yield locus. Four yield loci are required for a flow function. (5 litres of powder are required)	<b>NOK 11.000</b>
Moisture content measurements, weight loss after 5 hours of drying at 105 °C, 3 parallels. Included in flow function measurements	<b>NOK 1.000</b>
<b>Jenike wall yield locus.</b> The kinematic angle of friction between the solid and the wall material (5 litres of powder)	<b>NOK 2.000</b>
<b>Jenike time flow function.</b> A six cell consolidating bench is used in conjunction with the shear tester (5 litres of powder)	<b>NOK 8.000</b>
<b>Angle of repose.</b> Dynamic and static angles of repose (5 litres of powder)	<b>NOK 3.000</b>
<b>Uniaxial test.</b> Consolidation curve, elastic properties, relaxation curve and strength properties (5 litres of powder)	<b>NOK 8.000</b>
<b>Uniaxial time flow function.</b> Four cell consolidating bench is used in conjunction with the uniaxial tester (5 litres of powder)	<b>NOK 8.000</b>
<b>Design of reliable silos based on above tests.</b> Critical silo parameters, and a report with silo design suggestion	<b>NOK 15.000</b>
<b>Price example 1:</b> Silo design based on critical silo parameters, including measurement of the Jenike flow function, time flow function, moisture content and 3 wall yield loci of a cohesive powder (10 litres of powder)	<b>NOK 40.000</b>
<b>Price example 2:</b> Silo design based on critical silo parameters, including one wall yield locus, moisture content and the angle of repose of a free flowing powder (5 litres of powder)	<b>NOK 25.000</b>
<b>Segregation – Gisle Enstad (35574161)</b>	
<b>Segregation tendencies.</b> One powder with repeated tests (40 litres of powder) Tests using our segregation tester. The test will determine which segregation mechanisms dominate and enable the identification of counter measures. Prices for the standard tests include particle size analyses of samples taken from the tester (10 litres)	<b>NOK 15.000</b>

<b>Pneumatic Transport – Chandana Ratnayake (35574146/95920208)</b>	
The transport rig with a 3 m <sup>3</sup> blow tank and 70 m each of 2”, 3”, 4” and 5” piping allows flexibility when it comes to defining projects to find solutions to problems. Of special interest may be stepping of pipelines to save energy and reduce product degradation. The accuracy when scaling laboratory data to actual plant conditions is much improved using the new rig. Design and commissioning data for pneumatic conveying systems can thereby be improved. The equipment we have should now be able to satisfy most needs, so please contact us if you have problems we might help you to solve.	<b>Price on request based on the size of work</b>
<b>Production of Fine Powders – Songxiong Ding (35574156)</b>	
Samples for market analyses, or product testing, can be produced using a range of equipment available at various Nordic laboratories. Prices will be provided on request. We can produce fine powders with top sizes of less than 3 microns by classification. An opposed jet fluid energy mill is also available for the production of any required size distribution below 50 micron. Our partner institutes at Trondheim (ball mill, Alpine fluid bed mill, high pressure roller mill), Luleå (stirred ball mills, annular ball mills, SAM mill), and Helsinki (hydrocyclones, SAM mill), can supplement our own services.	<b>Price on request based on the size of work</b>
<b>Homogenization and Mixing - Songxiong Ding (35574156)</b>	
We have both Forberg and Ide-Con batch mixers, as well as an Ide-Con continuous mixer and a homogenizing silo. For demonstrations and/or production of small batches for market investigations, contact us.	<b>Price on request</b>
<b>Electrostatic Measurements - Gisle G Enstad(35575218/56301308)</b>	
<b>Specific resistance.</b> One powder with repeated tests (0.2 liter powder)	<b>NOK 5.000</b>
<b>Electrostatic charging, field test.</b> Measurement of charge with Faraday cup, and field meter. Prices are per day (+ travel costs)	<b>NOK 15.000</b>
<b>Charge decay characteristics.</b> One powder with repeated tests (0.2 liter powder)	<b>NOK 10.000</b>
<b>Distribution of electrostatic charges.</b>	<b>Price on request</b>
<b>Charging during pneumatic transport - Small scale transport rig</b>	<b>Price on request</b>
<b>Particle Size Analysis - Franz Otto von Hafenbrädl (35574143)</b>	
The first price is for the first powder sample. Prices in paranthesis are for further samples of the same or similar material, using the same measurement conditions. Results are normally given as print-outs or test-sheets, in addition to a letter with a short summary of results. For a full scientific report with comparisons, discussions of results and comprehensive documentation, we charge NOK 5.000 extra. Results will normally be ready within 10 working days from receipt of powder. Contact us in advance for special prices on large numbers of samples or for “next day” measurement results.	

HELOS diffraction pattern analyzer (Range 0.6-1750 mm). Measurement using the well known diffraction principle (0.1 liter powder)	<b>NOK 4.000 (1.500)</b>
RODOS/GRADIS (Range 0.6-1750 mm). The RODOS and GRADIS dry dispersion units allow the analysis of dry powders using the HELOS (1 liter powder)	<b>NOK 4.000 (1.500)</b>
Sedigraph 5100 (Range 0.1-300 mm). Determines the size distribution using incremental sedimentation and measuring the concentration of particles at a known depth at a known time using an x-ray beam (0.1 liter powder)	<b>NOK 4.000 (1.500)</b>
<b>Sieving - Franz Otto von Hafenbrädl (35574143)</b>	
<b>Machine Dry Sieving.</b> Consisting of max. 7 sieves with measuring range from 90 to 11200 mm (0.5 liter powder)	<b>NOK 4.000 (1.500)</b>
<b>Machine Wet Sieving.</b> Same machine and sieves as for dry sieving but with water washing (0.5 liter powder)	<b>NOK 4.000 (1.500)</b>
<b>Ultrasonic Wet Sieving.</b> The micro-sieves are placed in an ultrasonic bath. The measuring range is from 5 to 25 mm (0.5 liter powder)	<b>NOK 4.000 (1.500)</b>
<b>Air Jet Sieving (per sieve).</b> Analysis down to 20 mm (0.5 liter powder)	<b>NOK 2.200 (800)</b>
<b>Microscopes - Franz Otto von Hafenbrädl (35574143)</b>	
We have two microscopes in our laboratory. A stereomicroscope (Carl Zeiss Jena Technical 2), and a plane microscope (Olympus BHS). A video printer is connected to the microscopes through a video camera, which makes it possible to print photos on paper.	
<b>Density - Franz Otto von Hafenbrädl (35574143)</b>	
Bulk densities. Loosely packed bulk density, and tapped bulk density, based on Geldart's procedure (1 liter of powder)	<b>NOK 3.000 (1.000)</b>
Particle density. (Range 0.19-99 g/cm <sup>3</sup> ) True density measured using a helium pycnometer (0.5 liter powder)	<b>NOK 3.000 (1.000)</b>
<b>Specific Surface Areas - Franz Otto von Hafenbrädl (35574143)</b>	
<b>Specific surface area using gas adsorption.</b> Adsorption of a helium/nitrogen mixture on the powder (Micromeritics Flowsorb II 2300) (Range 0.01-1000 m <sup>2</sup> /g) (0.1 liter powder)	<b>NOK 4.000 (1.500/1.000)</b>
<b>Specific surface area using permeametry.</b> Blaine apparatus which uses permeametry (Range 0-12.000 cm <sup>2</sup> /cm <sup>3</sup> ) (0.1 liter powder)	<b>NOK 3.000 (1.000)</b>
<b>Fluidization - Songxiong Ding (35574156)</b>	
Fluidization of powders. Minimum fluidization/bubbling velocity, expansion and de-aeration characteristics, and tendency to dusting (20 litres of powder by using the small set of facility or 60 -80 litres of powder for the big one)	<b>NOK 10.000/per sample</b>
<b>Erosivity - Franz Otto von Hafenbrädl (35574142)</b>	

<p><b>Erosivity apparatus.</b> The abrasivity of powders on a metal plate at angles from 20° to 90° or, alternatively, ability of materials to withstand erosion. The price is for the first combination of velocity, loading and impact angle. Additional combinations NOK 5000 (20 litres of powder)</p>	<p><b>Price on request</b></p>
<p><b>Large Silo Battery - Gisle Enstad (35575218)</b></p>	
<p>We have one circular silo and one rectangular silo (approx 40m<sup>3</sup> each) fully instrumented for monitoring silo wall stresses and material flow pattern inside the silo. This facility is now available for industrial research activities.</p>	
<p><b>Other Services</b></p>	
<p>We can also offer standard services on the transportability of powder in air slides.</p>	<p><b>Prices on request</b></p>

Annex B:

**Participants Annual  
Contribution**

## **AGREEMENT ON ANNUAL CONTRIBUTION AND DURATION OF CONTRACT**

I, \_\_\_\_\_

on behalf of \_\_\_\_\_

(The Participant)

agree to contribute

NOK \_\_\_\_\_

annually to Telemark Technological Research and Development Centre (Tel-Tek), Department of Powder Science and Technology (POSTEC) for the subsidization of the programmes detailed in Annex A of the POSTEC agreement. I understand that this contribution will be used in accordance with the allocations we make for the different areas of activities proposed to, and accepted by, the Annual General Meeting - in so far as this is possible.

I understand that I may withdraw from this commitment by giving the Company three months notice of my intention to do so in writing. If I do not withdraw, my membership is automatically renewed for a further period of one year. If I withdraw within three months of expiry or later my company will pay 25% of the above contribution for the subsequent year.

Place and Date: \_\_\_\_\_

Signature: \_\_\_\_\_

(on behalf of Participant)

Position: \_\_\_\_\_

Annex C:

**Benefits for Participants in the POSTEC  
programme and rules for upgrading the  
membership**

## **BENEFITS FOR PARTICIPANTS**

Any Participant is entitled to a discount on the contract research work the participant wishes to have performed at Tel-Tek dept POSTEC. The discount shall be calculated based on the annual contribution by the participant to the programme or the corresponding level of membership.

Basic membership benefits for all participants include:

- Reduced rates on all contract research and consultancy work
- Priority before non-members
- Access to reports on web (Password protected/ excl. "TOP SECRET"-reports (K2)/ This is planned implemented during 2002)
- Free telephone consultancy and troubleshooting (limited to participants basic contact person, and as far as time permits)
- Access to all general research reports and results from general research programmes
- Ability to influence the research direction
- Access to POSTEC research facilities for product demonstrations

Membership benefits for participants at higher membership levels includes:

- Even higher discounts on all contract research and consultancy work as given in Annex D.
- **Free** yearly visit on-site by POSTEC-personnel (selectable by Participant, as far as possible. Participant must give due notice about desired person(s)). The cost of travel & stay will be borne by the concerned member organisation.
- Priority before members at lower membership levels
- Possibility for free advertisement in POSTEC Newsletter

The discount levels and rules for the free yearly visit are explained in Annex E to this contract.

## **MEMBERSHIP UPGRADE**

The membership is divided in four levels, named basic, silver, gold and platinum.

Membership may be upgraded by

- a) Paying a higher basic membership fee
- b) Ordering contract research and other projects at Tel-Tek dept. POSTEC for a sum as given in the membership guide (excl. purchase of goods)
- c) Enroll new members into the POSTEC-programme

The new membership level is awarded from the next year of membership. Payment of the minimum membership fee is a pre-requisite for an upgrade to a higher membership level.

Annex D:

## **Hourly Rates**

**Tel-Tek. Dept of Powder Science and Technology (POSTEC)  
Hourly Rates 2008**

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<u>Category</u>	<u>Normal Rate</u>
Senior scientist	NOK 1200/-
Scientist	NOK 1000/-
Engineer	NOK 850/-
Technician	NOK 800/-
<b>POSTEC-membership discounts:</b>	
Basic	10%
Silver	15%
Gold	20%
Platina	25%

The above discount will be applicable only on the first NOK 1,0 million worth of man-hours cost for a member organisation in one financial year.