



Company mission in the field of advanced engineering technical ceramics

Bergamo, May 5-7, 2010



Business Support on Your Doorstep

Introduction

The company mission aims at introducing participants to a set of three high tech companies of the advanced ceramics sector providing services, materials and systems for a wide range of cutting edge applications in manufacturing industries. Companies are located in the Bergamo-Brescia area, east of Milan, where the big technological and manufacturing platform of Lombardy is based.

Petroceramics is a top level start up company providing research, development and engineering services in cutting edge applications of ceramic and composite materials: from the composites for brake systems in race cars to components for aerospace and defence industries. Meeting Petroceramics allows participants to visit the Kilometrorosso Science Park, a prestigious science park designed by the famous architect Jean Nouvel.

HTC is a market-oriented company with a 20 years old experience in development and manufacturing zirconia- and alumina- based components for a wide range of mechanical applications in different industrial sectors.

TAV is a leading global provider of vacuum furnaces for process technologies of ceramic and metallic materials: the company supplies equipment to the other ceramic hosting companies.

A common feature of the hosting organisations is their strong customer orientation: although providing different products (R&D services, materials and components, furnaces) companies are definitely customer oriented, that is their strengthpoint is represented by a business model based on cooperation with customers.

Participants will be conveniently accommodated in a hotel in Bergamo, allowing the opportunity to spend a few evening hours visiting the medieval Bergamo Alta district. It's recommended to search flights to/from the Bergamo Orio Serio airport (15 minutes from downtown). The Milan airports (Linate and Malpensa) however could be easily reached by bus in 1-2 hours, respectively.

Preliminary Program

May 5-7, 2010

May 5

Arrival in Bergamo Orio al Serio Airport – Transfer to the Hotel in Bergamo

May 6

9,00 am – Departure from the Hotel

9,30 am – Arrival at Kilometrorosso Science Park (www.kilometrorosso.com)

Visit of Petroceramics (www.petroceramics.com)

01,00 pm – Lunch at cafeteria Kilometrorosso

02,00 pm – Transfer to Caravaggio

02,30 pm - Visit of TAV (<http://www.tav-alto-vuoto.it/>)

05,00 pm – Transfer to Hotel in Bergamo

07,30 pm – Visit and social dinner in Bergamo Alta (the old town)

May 7

9,00 am – Departure from Hotel and transfer to Rovato

10,00 am - Visit of HTC (<http://www.htc-ceramics.com/>)

01,00 pm – Lunch

02,30 pm – Transfer to Airport

03,00 pm – Arrival at Airport Bergamo Orio al Serio

Brief information about hosting companies

PETROCERAMICS

Kilometrorosso Science Park

Stezzano (Bergamo)

Petroceramics is a spin-off sponsored by the Milan State University, founded in 2003 and based at the Kilometrorosso Science Park close to Bergamo, specialized in advanced applications of materials science and engineering. Petroceramics is a small-scale (around 10 employees, mostly scientists and PhDs) and dynamic company providing research, development and design in manufacturing ceramic and composite materials (products, processes and equipments). The company developed products for a number of sectors, including: friction materials for brake systems (in partnership with Brembo and Brembo Ceramic Brake Systems, as part of a joint venture with the Daimler Chrysler Mercedes Group); bulletproof materials for the armoured protection of persons and vehicles; ceramic components for manufacturing and aerospace industries. The business model of Petroceramics is based on strategic partnerships with customers and joint development of new materials and processes, providing technical support to manufacturers till start-up operations.

A few key technologies developed by Petroceramics

- Liquid Silicon Infiltration
- Characterization and processing Carbon/Carbon materials for brakes discs
- High performance ceramic brake pads
 - Liquid impregnation and pyrolysis processes
 - Ceramic-metals composites.

HTC- CERAMICS

Rovato (Brescia)

H.T.C., a subsidiary of HT-Ceram Group, is a manufacturing **company with 20 years** experience in **advanced technical ceramics** for mechanical applications, wherever high anti-wear, high temperatures and chemical resistance are required. Materials used are

Zirconium-Yttrium, Zirconium-Magnesium and Alumina 99% . H.T.C. is a leading provider of wear parts to global markets, thanks to its process experience, deep knowledge of mechanical applications, **high degree of reliability and customer service orientation.**

Main products of HTC

Pistons:

- Pistons for water cleaning systems
- Medium and high pressure pump pistons
- Pistons for dosing, chemical and agricultural pumps
- Circulation pump shafts
- Magnetic and electric pump components
- Components for special applications

- Volumetric pump:

H.T.C produces complete body pump in high Alumina content with micrometric tolerances of the various components. The high resistance to wear guarantees over time constant capacity of the fluid and elevating resistance to the chemical attacks.

- Components:

- Cones
- Capstans
- Pulleys
- Forming rings

- Oxygen sensors:

H.T.C produces probes in stabilized Zirconia for the production of sensors with sophisticated industrial applications: monitoring oxygen content in the iron and steel over a wide concentration range.

TAV

Caravaggio (Bergamo)

TAV designs and manufactures **advanced vacuum furnaces** with the highest quality standards in a wide range of geometries and sizes.

TAV vacuum furnaces are used in following process technologies:

- vacuum heat treatment (steels, superalloys, titanium)
- vacuum brazing (steels, aluminium, titanium)
- vacuum sintering (steels, titanium, advanced ceramics).

Main applications of TAV Vacuum furnaces are in following industries:

- aero-engine manufacturing
- industrial gas turbine manufacturing
- heat exchanger manufacturing
- commercial heat treatment
- manufacturing of sintered components.

TAV range of products includes vacuum furnaces with pressures from 1E-7mbar to 100 bar, temperatures of up to 2500°C and load capacities of up to 5000 kg. Geometry can be either horizontal or vertical. Horizontal furnaces can be provided with hinged door or with car bottom door. Vertical furnaces can be either bottom loading or top loading. Pumping groups can be either oil sealed or entirely dry (screw pumps, turbo molecular pumps, cryogenic pumps, etc.). Thermic chambers can be made with either graphite or metal. TAV equipments are state of the art vacuum furnace technology and are produced to the highest standards of quality, complying with the strictest specifications of the aerospace industry.

For further information, please contact:

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