micropelt

World's First Thermoelectric Wafer and Chip Production Opens in Germany

- **Millions of Micro Thermogenerators and Coolers to energy Efficiency of Buildings and Production Equipment**
- **Thermoelectrics Tapping into Free Waste Heat: Progress is Green**
- **15 million Euro invested**

Halle/Saale, Freiburg, Germany, June 21, 2011 – The world's first automated high volume production site for thermoelectric chip devices has been officially opened by Micropelt at their new location in Halle/Saale, near Leipzig. 400 m^2 (4,300 sqft) of production space include a customized clean room and the facilities to produce thermoelectric thin films on 6" silicon wafers, which are processed further into tiny micro coolers, sensors and thermogenerators. Unsurpassed power densities of Micropelt's structured thin films can pump many watts of heat or generate Milliwatts of electrical power on 10 mm^2 (0.016 in^2). Around 15 million Euros are being invested to turn the company's technical world leadership into a corresponding market success.

Micropelt opens officially volume TE-Chip Fab in Halle (Saale). From left to right: Oliver Keilhack, CFO Micropelt, Nils Sandvoß Investitionsbank Saxony-Anhalt, Mathias Ressel Goodvent Magdeburg, Fritz Volkert CEO Micropelt, Board member Dr. Christian Suttner, Chairman of the Board Hubertus Leonhardt SHS VC and Dr. Heinz Friedrich Franke Head of Business Development Department Halle/Saale.

Micropelt GmbH
Emmy-Noether-Straße 2
D-79110 Freiburg
Office: +49 (0)7 61/15 63 37-0
Fax: +49 (0)7 61/15 63 37-21
Mail: info@micropelt.com
www.micropelt.com

Blücherstraße 26
D-06120 Halle (Saale)
Office: +49 (0)345 /47 80 175

Geschäftsführer:
Fritz Volkert
HRB 700050 Freiburg
ID-Nr. DE814648746

Saalesparkasse, 06093 Halle
Konto 383 319 249
BLZ 800 537 62
SWIFT NOLADE21HAL
IBAN DE84 8005 3762 0383 3192 49

"Going to volume production is a big and important milestone for us", said Micropelt's CEO, Fritz Volkert. "By the same token we lay the groundwork for a major change in the use of energy and resources in private households, public institutions as well as corporations around the world." Volkert refers to the new market of thermogenerator-driven wireless sensors and micro actuators. The company is certain that processes and production equipment will soon be fully monitored by low-cost self-organizing wireless sensor networks (WSN). According to this concept both operations and maintenance can switch to always current measured data, providing for continuously improving process efficiencies and on one hand and maximized asset utilization along with optimized maintenance scheduling and execution, at both minimal cost and risk.

Thermogenerators: Progress is Green

"Today's wireless sensors save lots of money by avoiding elaborate planning, logistics and labor of cabling. However, life-cycle costs are often dominated by battery maintenance. This drawback has so far been limiting the scope and acceptance of such systems", explained Burkhard Habbe, VP of Business Development at Micropelt. Wladimir Punt, VP Sales and Marketing positions Micropelt's remedy for the battery maintenance issue: "Our thermogenerators and thermoharvesters often supply more energy than is drawn from battery packs used by WSNs. However, the harvester does not cause any further life cycle costs and beyond that taps into free, otherwise lost thermal energies. This shows how green innovation can be!" Micropelt has so far been producing on a pilot production line located at their Freiburg head offices. The new location in Halle is run by a team of seasoned experts of all required disciplines. After qualification the team heads for starting volume production of five to ten million parts, dependent on the mix of device sizes ordered.

Venture Capital Provides Foundation for Solid Enterprise Development

"Turning a new technology into a product and successfully introducing it to the market is a risky venture, despite all expertise and applied diligence", says Hubertus Leonhardt, Micropelt's Chairman of the Board and Managing Partner of SHS GmbH, a Tübingen, Germany, based venture capital firm which took the role of Micropelt's lead investor in 2006. "One more time", Leonhardt continues, "it becomes obvious that venture capital is an important contributor when it comes to exploring unknown economic territories and markets. Out of the multiple potentials we identified before making our decisions, we managed to mature the most promising ones thanks to our close cooperation with Micropelt. This is what we take price in." Further investors

Micropelt GmbH
Emmy-Noether-Straße 2
D-79110 Freiburg
Office: +49 (0)7 61/15 63 37-0
Fax: +49 (0)7 61/15 63 37-21
Mail: info@micropelt.com
www.micropelt.com

Blücherstraße 26
D-06120 Halle (Saale)
Office: +49 (0)345 /47 80 175

Geschäftsführer:
Fritz Volkert
HRB 700050 Freiburg
ID-Nr. DE814648746

Saalesparkasse, 06093 Halle
Konto 383 319 249
BLZ 800 537 62
SWIFT NOLADE21HAL
IBAN DE84 8005 3762 0383 3192 49

joining SHS include MBG, KfW, L-Bank and IBG Fonds managed by Goodvent, as well as local and regional financing partners. With its new site Micropelt taps into a rich infrastructure of basic and applied research organizations, and a growing production industry. A very particular match occurs with Halle's traditional expertise clusters in thermoelectric once hidden behind the iron curtain.

"Thin film thermoelectrics is just at the beginning of a bright future", concludes Fritz Volkert. "Our production technology is easily applicable to novel materials for higher efficiencies and higher operating temperatures as they become available. We feel well prepared to satisfy our customers today and tomorrow."

About Micropelt

Micropelt GmbH, Freiburg, Germany, develops, produces and markets the world's smallest and most effective thermoelectric elements for clean-tech micro energy harvesting, thermal sensing, cycling and cooling. Micropelt's thermoelectric chips are based on a patented scalable thin film micro-structuring platform technology, which minimizes component size while maximizing power density for energy harvesting, cooling or thermal cycling applications. Process-inherent economies-of-scale break previous cost and price barriers of conventional thermoelectrics. Batteries become obsolete as cost-free electricity from waste heat powers wireless sensor networks for their entire life. Chip-thermogenerators also boast unprecedented sensitivity, resolution and dynamics in sensing heat flux and temperature change. For more information contact Micropelt or visit the website http://www.micropelt.com.

Micropelt GmbH
Emmy-Noether-Straße 2
D-79110 Freiburg
Office: +49 (0)7 61/15 63 37-0
Fax: +49 (0)7 61/15 63 37-21
Mail: info@micropelt.com
www.micropelt.com

Blücherstraße 26
D-06120 Halle (Saale)
Office: +49 (0)345 /47 80 175

Geschäftsführer:
Fritz Volkert
HRB 700050 Freiburg
ID-Nr. DE814648746

Saalesparkasse, 06093 Halle
Konto 383 319 249
BLZ 800 537 62
SWIFT NOLADE21HAL
IBAN DE84 8005 3762 0383 3192 49