**Study finds the mechanical structuring process utilized by Gentherm significantly reduces CO2, compared to conventional chemical etching**

捷温科技采用的机械切削工艺, 与传统的化学蚀刻相比，显著降低了二氧化碳排放

NORTHVILLE, Mich., April 11, 2023 (GLOBE NEWSWIRE) -- Gentherm (NASDAQ: THRM), the global market leader of innovative thermal management and pneumatic comfort technologies for the automotive industry and a leader in medical patient temperature management systems, recently partnered with the Fraunhofer-Gesellschaft Institute for a sustainability study to demonstrate how the mechanical structuring process utilized by Gentherm for manufacturing flexible printed circuits (FPC) reduces CO2 emissions and water consumption significantly when compared to conventional chemical etching manufacturing.

密歇根州诺斯维尔，全球汽车行业创新热管理及气动舒适技术开发商和市场领导者，病患温度管理系统的领导者，Gentherm捷温科技（纳斯达克股票代码：THRM），最近与弗劳恩霍夫协会合作开展了一项可持续性研究，旨在证明与传统的化学蚀刻制造相比，捷温科技用于制造柔性印刷电路（FPC）的机械切削工艺如何显著减少二氧化碳排放和水资源消耗。

Key findings of the study revealed that the Mechanical Structuring Process reduced CO2 emissions by up to 98 percent for copper circuits and 99 percent for aluminum circuits, and also reduced water consumption by up to 91 percent for copper circuits and 98 percent for aluminum circuits when compared to chemical etching. The impact of this means that if one million vehicles replaced circuits manufactured by chemical etching with the mechanical structuring process solution, it would save over 186,000 tons of greenhouse emissions which is equivalent to the total emissions of 40,000 gasoline-powered cars driven for a year.

该研究的主要发现表明，与化学蚀刻相比，机械切削工艺制作的铜材质电路二氧化碳排放量减少了98%，铝电路制造过程中产生的二氧化碳排放量减少了99%，铜电路的用水量减少了91%，铝电路的用水量减少了98%。这意味着，如果100万辆汽车用机械切削工艺取代化学蚀刻制造的电路，将节省超过186000吨的温室气体排放，相当于40000辆燃油汽车一年的总排放量。

The mechanical structuring process is an innovative solution for the manufacturing of FPCs utilizing an innovative milling approach. The current industry standard for FPC manufacturing, chemical etching, is an energy-intensive process that utilizes a variety of environmentally unfriendly chemicals.

机械切削工艺是利用铣削方法制造FPC的创新工艺。目前，化学蚀刻仍是FPC的行业制造常规方案，该能源密集型工艺在制造过程中需要使用多种对环境产生恶劣影响的化学物质。

“As we continue to develop innovative technology, the sustainability goals of our company and customers are a top priority,” said Thomas Stocker, Gentherm’s Senior Vice President and General Manager, Europe Automotive, Global Pneumatic Comfort and Battery Performance Solutions, and Managing Director of Europe. “By working closely with the Fraunhofer Institute, we were able to validate the positive environmental impact the mechanical structuring process has for the development of solutions for our customers that address the needs of electric vehicles.”

“随着持续不断的技术创新，实现我们公司和客户的可持续发展目标是重中之重，” 捷温集团高级副总裁，欧洲区总裁兼气动舒适及电池性能管理产品线总经理Thomas Stocker说。“通过与弗劳恩霍夫研究所密切合作，我们验证了机械切削工艺对环境的积极影响，并以此为我们的客户开发满足电动汽车需求的解决方案。”

The mechanical structuring process is currently being utilized by Gentherm to manufacture its Cell Connecting Board (CCB) products. This technology utilizes innovative foil-based CCBs that replace complex sensor cable harnesses with ultra-flat foil conductors that are thinner and lighter than previous models. This provides for several advantages including reduced manufacturing complexity, reduced packaging requirements, and a simplified design process.

捷温科技目前正在使用机械切削工艺来制造电池电芯连接产品（CCB）。该方案创新地利用薄膜金属制成电芯连接组件取代复杂的传感器线束，产品更薄更轻。具有降低制造复杂性、降低封装要求合并简化设计流程等优势。

**About Gentherm**

Gentherm (NASDAQ: THRM) is the global market leader of innovative thermal management and pneumatic comfort technologies for the automotive industry and a leader in medical patient temperature management systems. Automotive products include variable temperature Climate Control Seats, heated automotive interior systems (including heated seats, steering wheels, armrests and other components), battery performance solutions, cable systems, lumbar and massage comfort solutions, valve system technologies, and other electronic devices. Medical products include patient temperature management systems. The Company is also developing a number of new technologies and products that will help enable improvements to existing products and to create new product applications for existing and new markets. Gentherm has more than 14,000 employees in facilities in the United States, Germany, China, Czech Republic, Hungary, Japan, Malta, Mexico, North Macedonia, South Korea, United Kingdom, Ukraine, and Vietnam. For more information, go to [www.gentherm.com](http://www.gentherm.com).

关于Gentherm

Gentherm（纳斯达克代码:THRM）是全球汽车行业创新热管理和气动舒适技术的市场引领者，医疗患者温度管理系统的领导者。汽车产品包括气候控制座椅、可加热汽车内饰系统 (包括加热座椅、方向盘、扶手等部件)、电池性能解决方案、线束系统、腰托和按摩舒适解决方案、阀门系统技术及电子器件等。医疗产品包括患者体温管理系统。Gentherm正向大量新技术、新产品进军，力求改进现有产品、为原有市场和新兴市场创造新产品和应用程序。Gentherm工厂遍布美国、德国、中国、捷克共和国、匈牙利、日本、马耳他、墨西哥、北马其顿、韩国、英国、乌克兰和越南， 全球拥有超过14000名员工。

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