



Spark the future.™

Thermo. Dynamic.

When a world-leading material technology company or a cutting-edge start-up needs an ingenious, first-of-a-kind thermal processing system, they turn to Harper. Boasting the industry's only end-to-end service approach, we put an all-encompassing range of technology solutions at your fingertips – plus, it's delivered by a passionate, exceptionally skilled and uniquely qualified staff.

We pride ourselves on design features that ensure the most efficient and effective operations, including optimized waste gas treatment, control systems with predictive maintenance, and energy-efficiency techniques.

You won't see a cookie-cutter line of products here. When you choose Harper, you choose a culture of ingenuity and creativity – and a team that constantly challenges itself to craft the best-engineered solutions for your needs.

Material Markets

Harper serves advanced material markets with unique thermal processing systems. Our involvement in these emerging industries begins in early stages of research and development, whether at universities, government institutions or early stage start-ups. We strive to partner throughout the development process, assisting in the scale-up and eventual commercialization of life-changing materials.

Harper is proud to collaborate with leaders in material development on their most demanding product innovations.

- Fibers and Filaments
- Powders
- Rare Earths
- Technical Ceramics
- Metal Oxides
- Energy Storage Materials
- Graphene
- Energy Generation Materials



From Spark to Finish

Customers trust Harper as their processing partner to help make their material innovations a reality. Our decades of experiences across a broad range of advanced materials and processing techniques make us uniquely qualified to assist customers every step of the way.

Feasibility and Testing

Optimization of process parameters is critical prior to investment in thermal processing equipment to ensure capacity and quality requirements are achieved. At our Technology Research Center, customers utilize Harper's systems for process development and process optimization as they work toward commercial scale-up or to develop processes with unique specifications. Testing can focus on varying production rates, temperature regimes, processing times, atmosphere compositions and flow rates. Harper has a variety of thermal systems available for use and the ability to make modifications to tailor the existing pilot equipment to specific customer process requirements. Harper also provides a variety of analytical services to help you monitor and better optimize your process.

Engineering Studies

Count on our deeply experienced engineering staff to conduct in-depth studies to assist with technical and business strategy and financial planning. Our vast capabilities include process cost models, analysis of the best-suited system for new material innovations, and the economics of increased production capacity with current and future state technologies.

Thermal Processing Systems

As customers ramp up their operations, Harper offers the widest range of solutions in thermal regimes, including furnace technologies and oxidation ovens in lab scale, pilot scale and full-production scale sizes. We have the building blocks to design for the most challenging thermal processes, using our vast experience to devise a first-of-a-kind system every time.

Complete Process Lines

From material handling to final product collection, and everything in between, Harper provides complete solutions for your advanced material process plant. We're focused on helping customers link the process steps to achieve greater efficiencies in reduced operating costs, increased quality and productivity, and strategic risk mitigation.

Customer Support

Harper's assistance extends beyond the standard sales, service and parts. As your partner, we work with your facilities team to develop and implement comprehensive Maintenance Management Programs that support your business plans and strategies. Additionally, our capabilities include retrofitting, rebuilds, system upgrades and more.

Pilot Line Facility

Harper offers its complete carbon fiber pilot process line as an open reference and capabilities demonstration to select clients. This facility includes Harper's proprietary multi-flow oxidation ovens, advanced LT and HT slot furnaces rated for 800°C and 1800°C respectively, surface treatment and waste gas abatement systems, and winders. You can utilize the facility for validation of your carbon fiber process, confirmation of material quantities to enable downstream research, assessment of feasibility of continuous operations, and validation of design parameters for further scale-up.



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