TOYOTA

Toyota Motor North America, Inc.
8777 Platt Rd.
Saline, MI 48176

Rodney Andrews, PhD PE
Director University of Kentucky Center for Applied Energy Research
Professor, Chemical & Materials Engineering, University of Kentucky
www.caer.uky.edu
859 257 0200
Rodney.andrews@uky.edu

Dear Prof. Andrews:

Toyota is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program." We recognize the need for, and strongly support, the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

The United States is currently dependent on China for the majority of graphite processing used in electric vehicle batteries and other manufacturing applications. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including Toyota Motor North America, Inc., identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small scale manufacturing and prototyping facilities. This Program will benefit taxpayers by accelerating domestic production of graphite, offering positive economic impacts.

Toyota is building Toyota Battery Manufacturing North Carolina in Liberty, North Carolina to produce battery modules for its electric vehicle efforts. The Toyota plant is anticipated to begin production in 2025. Battery cells that Toyota will produce at TBMNC will likely include graphite. University of Kentucky's proposed Program is focused on improving local graphite supply. Toyota regularly evaluates, vets and validates the latest developments in battery materials and values local supply.

A Program like this, offering vital standardized testing, advanced characterization, and small-scale manufacturing processing, is needed to support the growth of domestic graphite supply. We believe this Program would be foundational to support domestic graphite industry – particularly in support of EV battery grade graphite, an area of increasing importance for economic growth.

Sincerely,

Srini Matam (Mar 26, 2024 12:12 EDT)
Srini Matam
GVP Battery Manufacturing Engineering
03/26/2024

Thomas Halcomb (Mar 26, 2024 13:32 EDT)
Thomas M. Halcomb
Senior Manager Purchasing
03/26/2024

SUPERIOR GRAPHITE

INNOVATING SINCE 1917

Rodney Andrews, PhD PE
Director University of Kentucky Center for Applied Energy Research
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Dear Prof. Andrews:

Superior Graphite is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program". We recognize the need for and strongly support the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

The United States is currently dependent on China for approximately 90% of graphite used in electric vehicle batteries and other manufacturing applications. This poses both a national security and economic competitiveness risk for the country. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including Superior Graphite, identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small scale manufacturing and prototyping facilities. This project will benefit taxpayers by accelerating domestic production of graphite, offering both positive economic impacts and reducing national security risks.

Superior Graphite is a globally recognized leader in graphite manufacturing and processing, and is planning to expand into large scale anode grade graphite (domestic) production at their Hopkinsville, KY facility in the near future. A Program like this, offering vital standardized testing, advanced characterization, and small-scale manufacturing processing, is needed to support the growth of domestic graphite supply – not only by Superior Graphite, but by the industry at large. We believe this Programs would be foundational to support graphite manufacturing – particularly in support of EV battery grade graphite, an area of increasing importance to Kentucky's economic growth.

Superior Graphite has past and present collaborative research project with the University of Kentucky's Center for Applied Energy Research (CAER). We have no doubt that the establishment of this Program there will be successful.

Sincerely,

Soeren Koester

Dr. Soeren Koester
Director of Research & Development Superior Graphite
soeren.koester@superiorgraphite.com

Rodney Andrews, PhD PE
Director University of Kentucky Center for Applied Energy Research
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Dear Prof. Andrews:

Rain Carbon is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program". We recognize the need for and strongly support the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

The United States is currently dependent on China for approximately 90% of graphite used in electric vehicle batteries and other manufacturing applications. This poses both a national security and economic competitiveness risk for the country. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including Rain Carbon, identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small scale manufacturing and prototyping facilities. This project will benefit taxpayers by accelerating domestic production of graphite, offering both positive economic impacts and reducing national security risks.

Rain Carbon currently produces coating and binding precursor materials for battery grade graphite production and most of these products are sold to graphite manufacturers in Asia. Rain Carbon is strongly supportive of efforts to establish US domestic production of battery graphite materials and has started to supply small volumes to support this growth. We currently produce precursor battery materials in Europe but have long term plans to setup manufacturing capacity in North America to support the US domestic growth in battery graphite production.

A Program like the one at the University of Kentucky offering vital standardized testing, advanced characterization, and small-scale manufacturing processing, is needed to support the growth of domestic graphite supply. We believe this Program would be foundational to support domestic graphite industry –

particularly in support of EV battery grade graphite, an area of increasing importance for economic growth.

Sincerely,

Les Edwards
VP Production Control and Technical Services

RAIN CARBON INC.

1330 Greengate Drive
Covington, LA 70433
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Mobile: 504 82 9022
Web Site: www.raincarbon.com

HEXALAYER

Rodney Andrews, PhD PE
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859 257 0200
Rodney.andrews@uky.edu

Dear Prof. Andrews:

HeXalayer is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program". We recognize the need for and strongly support the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

The United States is currently dependent on China for approximately 90% of graphite used in electric vehicle batteries and other manufacturing applications. This poses both a national security and economic competitiveness risk for the country. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including HeXalayer, identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small scale manufacturing and prototyping facilities. This project will benefit taxpayers by accelerating domestic production of graphite, offering both positive economic impacts and reducing national security risks.

HeXalayer is a Louisville, KY based battery materials technology developer, with a focus on high performance Graphene materials. While a new industry, Graphene can be considered a "sister" technology to Graphite and faces many of the same challenges as Graphite production. We see our own, and Graphene technology, interests closely aligned with battery grade Graphite manufacturing and seek to support the localization efforts of these carbon materials.

The Commonwealth of Kentucky has attracted many battery manufacturing facilities; however it is significantly behind in this particular capability, testing and small pilot fabrication of batteries with new source materials. It's a critical missing piece in the EV Battery eco-system. Currently, our own company is forced to utilize such centers in Michigan and Indiana to address this need. These out of state centers have long waiting lists and rapidly growing members/customer, which shows the need for more programs such as these. We would much rather spend our time and resources locally and support the development of such capabilities at the University of Kentucky.

Sincerely,

Harut Vardanyan
CEO & Co-Founder, HeXalayer, LLC
HeXalayer.com
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Rodney Andrews, PhD PE
Director University of Kentucky Center for Applied Energy Research
Professor, Chemical & Materials Engineering, University of Kentucky
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March 16th, 2024
Dear Prof. Andrews:

Norley Carbon & Graphite Consultants, LLC is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program". We recognize the need for and strongly support the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

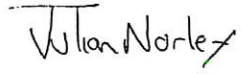
The United States is currently dependent on China for approximately 90% of graphite used in electric vehicle batteries and other manufacturing applications. This poses both a national security and economic competitiveness risk for the country. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including Norley Carbon & Graphite Consultants, LLC, identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small-scale manufacturing and prototyping facilities. This project will benefit taxpayers by accelerating domestic production of graphite, offering both positive economic impacts and reducing national security risks.

I have worked for companies in the graphite industry for 39 years including GrafTech International, NeoGraf Solutions, Parker Aerospace, (with manufacturing facility in Danville, Ky) and BP and for the past 5 years as an industry consultant through my company Norley Carbon & Graphite Consultants.

A Program like this, offering vital standardized testing, advanced characterization, and small-scale manufacturing processing, is needed to support the growth of domestic graphite supply. We believe this Program would be foundational to support domestic graphite industry – particularly in support of EV battery grade graphite, an area of increasing importance for economic growth.

I am seriously concerned about the US's dependence on China for its graphite EV battery materials and applaud this much-needed initiative by the University of Kentucky in supporting the fledgling US domestic supply chain.

Sincerely,



Julian Norley, PhD, DIC, ARSM
Fellow of the American Carbon Society
Norley Carbon & Graphite Consultants, LLC
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SPACE TANGO

March 25th, 2024

Rodney Andrews, PhD PE
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Dear Prof. Andrews:

Space Tango is pleased to provide this letter of support for your proposal seeking Community Project Funding for "University of Kentucky Graphite Manufacturing and Characterization Program". We recognize the need for and strongly support the establishment of a graphite manufacturing and characterization capability at the University of Kentucky.

The United States is currently dependent on China for approximately 90% of graphite used in electric vehicle batteries and other manufacturing applications. This poses both a national security and economic competitiveness risk for the country. In 2024, the "Domestic Production of Synthetic Graphite Roundtable" participants, including Space Tango, identified several industry needs for expanding and accelerating domestic production: standardized testing and reference materials, greater characterization capabilities, and small scale manufacturing and prototyping facilities. This project will benefit taxpayers by accelerating domestic production of graphite, offering both positive economic impacts and reducing national security risks.

Space Tango designs, builds and operates autonomous experiments on the International Space Station. The requirements to run such unique work are extreme (temperatures, radiation, etc) and material science breakthroughs enable greater progress in our work.

A Program like this, offering vital standardized testing, advanced characterization, and small-scale manufacturing processing, is needed to support the growth of domestic graphite supply. We believe this Program would be foundational to support domestic graphite industry – particularly in

SPACE TANGO

support of EV battery grade graphite, an area of increasing importance for economic growth.

Thank you,

Twyman Clements
President & Cofounder
Space Tango