

REQUEST # 65196

Seeking Applications that Expand the Use of Copper

RESPONSE DUE DATE: [3-4 weeks after launch]

MANAGER: Program Manager, Ph.D.

SOLUTION PROVIDER HELP DESK

EMAIL: PhD@ninesigma.com **PHONE:** +1-216-283-3901

Opportunity

Contract research, joint development

Timeline

Phase 1 – Proof of Concept in 9-12 months
Phase 2 – Commercial Optimization in 12 months

Financials

Phase 1 – Proof of Concept funding up to **US\$ 100,000**
Phase 2 – Funding dependent upon adequate progress

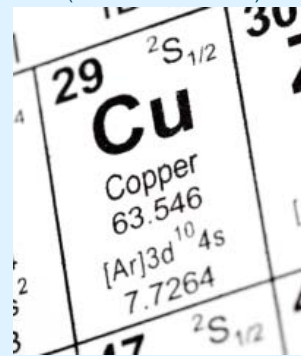
[DOWNLOAD PROPOSAL TEMPLATE](#)

[SUBMIT A PROPOSAL ONLINE](#)

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[FREQUENTLY ASKED QUESTIONS](#)

(click buttons above)



REQUEST FOR PROPOSAL DESCRIPTION

NineSigma, representing the **International Copper Association**, invites proposals for **technologies that will advance the use of copper or copper alloys in commercial applications.**

The successful technology will:

- Address an industry pain point and/or societal need for which the properties of copper offer a competitively advantageous solution path
- Be based on a compelling insight involving a combination of technical, market, or business factors
- Require research and development effort to achieve a technical breakthrough enabling global application potential
- Lead to use of at least 10,000 metric tons of copper annually within 5 years of initiation
- Either create a new market application or defend an existing copper application from alternative materials or technologies
- Have a clear path to commercialization

Technology with a longer timeline to market will require stronger market impact and clearer path to commercialization.

BACKGROUND

The International Copper Association (ICA) is a trade association representing copper producers, fabricators, and processors. They work to promote the use of copper by communicating the unique attributes that make this sustainable element an essential contributor to the formation of life, to advances in science and technology, and to a higher standard of living worldwide.

ICA has a clear track record of supporting research programs which align with their purpose. Resulting from their calls for proposals in 2008, ICA funded research contracts with 6 organizations for a combined value of US\$ 720,000. ICA has been conducting calls since 2004.

ICA seeks new opportunities to support research and development that will grow or defend the use of copper materials in commercial applications.

POSSIBLE APPROACHES

ICA describes important existing and emerging application domains for copper materials and the associated technical challenges in their

technology roadmap.¹ Additionally, they are interested in:

- Imaginative new concepts for copper applications
- More effective use of copper in end products (e.g. use less copper but use it more effectively or use more copper to provide additional value)
- New fabrication methods or joining techniques
- Reduction in number of processing steps or energy use necessary to make end products
- Copper based materials that exhibit unusual physical properties or chemical activity

APPROACHES NOT OF INTEREST

An approach with any of the following characteristics is not of interest:

- Does not meet minimum annual copper usage
- Does not have a clear market application
- Is a dispersive use that does not allow copper recycling
- Only involves redeployment of copper in existing applications rather than net increase in use of copper

ANTICIPATED PROJECT PHASES OR PROJECT PLAN

Phase 1 – Proof of concept

Demonstration of technology functionality as well as detailed pathway and timeline for commercialization

Phase 2 – Commercial optimization

Commercial partner identification, business plan development, and technology refinement for commercial deployment

CRITERIA FOR MOVING FROM PHASE 1 TO PHASE 2

Client will consider for advancement research programs that make adequate progress toward technical feasibility and commercial readiness.

APPROPRIATE RESPONSES TO THIS REQUEST

Responses from **companies** (small to large), **academic researchers**, other **research institutes**, **consultants**, **venture capitalists**, **entrepreneurs**, or **inventors** are welcome. For example:

I am a **company or academic person** with technology that meets minimum requirements and is

ready for demonstration before transfer to commercial use.

I am a **company or academic person** with technology which will meet minimum requirements but that requires further research and development to ready it for transfer to commercial use.

RESPONDING TO THIS REQUEST

Appropriate responses will use the [proposal template](#) and address the following:

- Concise, high-level description of proposed technology including:
 - The problem that the technology solves
 - Technical insight and/or market insights which form basis of proposal
 - Clear project objectives and activity
 - Defendable estimate of copper usage or impact (tons/year)
 - Technology maturity
 - Clear application domain
 - Probability of success to scale-up
 - Pathway and timeline to commercial scale
- Team description including relevant assets and capabilities
- Intellectual property position
 - List of relevant patents, if available
 - Desired relationship with sponsor
- Willingness to work with third parties (e.g. development synergy, co-funding)

NON-CONFIDENTIAL DISCLOSURE

By submitting a Response you represent that the Response does not and will not be deemed to contain any confidential information of any kind whatsoever.

Your Response should be an executive summary (about 3 pages). The Response should briefly describe the technical approach and provide information on technology performance, background, and description of the responding team and their related experience.

By submitting a Response, you acknowledge that NineSigma's client reserves the sole and absolute right and discretion to select for award all, some, or none of the Responses received for this announcement. NineSigma's client also may choose to select only specific tasks within a proposal for award. NineSigma's client has the sole and absolute discretion to determine all award amounts.

RESPONSE EVALUATION

NineSigma's client will evaluate the **Response** using the following criteria:

- Overall scientific and technical merit of the proposed approach
- Approach to proof of concept or performance
- Potential for proprietary position (i.e., is the technology novel or protectable)
- Economic potential of concept
- Respondent's capabilities and related experience
- Realism of the proposed plan and cost estimates

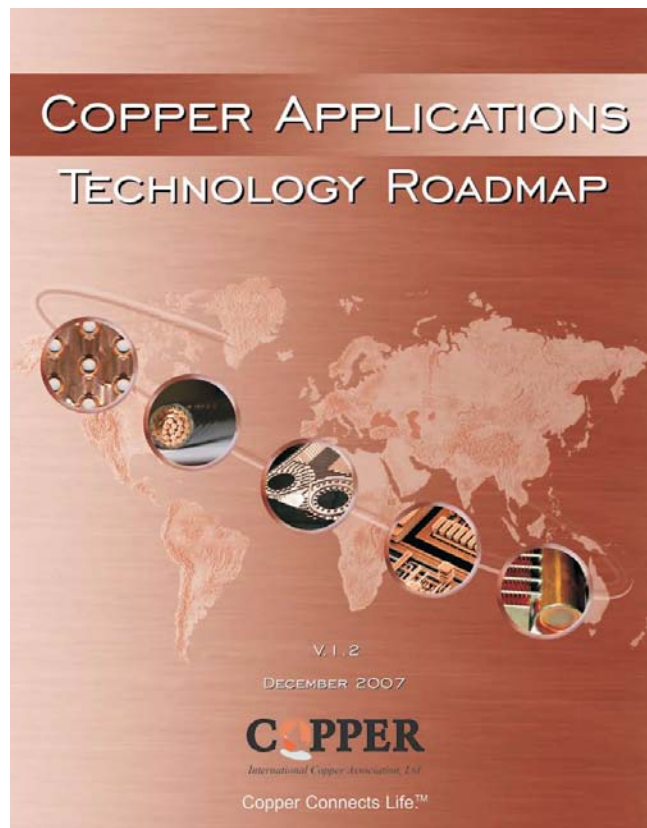
The client will contact respondents with highly responsive proposals for next steps.

**ONLY COPPER AND ITS ALLOYS
COMBINE THESE ADVANTAGES:**

- **Best electrical and thermal conductivity**
- **Superior corrosion resistance**
- **Excellent joining, plating, polishing and finishing**
- **Very good spring properties**
- **High ductility**
- **Outstanding machinability**
- **Wide range of colors**
- **Antimicrobial behavior**
- **Recyclability at high salvage value**

ENDNOTE

¹ International Copper Association Technology Roadmap in seven languages (English, Chinese, German, Japanese, Korean, Spanish, and Russian) (http://www.copperinfo.com/technology/tech_roadmap.html)



Additional technical information about copper materials is available at www.copper.org.