

The requested format for all proposals submitted to RAPID is outlined here. There is a 12-page limit to each proposal, excluding the title page and Supplemental Information section. Proposals should retain formatting that exists in this template (12 point font, 1" margins on all sides)

## Title Page

<p align="center"> <b>Proposal Submission to the RAPID Manufacturing Institute</b>  <b>on Modular Chemical Process Intensification</b>  <i>(under DE-EE0007888 – U.S. DOE Advanced Manufacturing Office)</i> </p>	
PROJECT NAME:	
Submitting RAPID Member Organization(s):	
Supporting Organizations/ Companies:	
Primary RAPID Focus Area:	
Proposal Submission Date:	
Proposed Start/ Duration:	(Max project duration of 36 months)
Total Proposed Funding (Federal + Cost Share):	
Proposed Cost Share Ratio	(RAPID is targeting a 2:1 cost share ratio, partner:federal)
TRL/MRL at product outset:	
Prior DOE/Fed Funding for this work? If yes, describe.	
Key Words:	

## **Executive Summary (1 page)**

The executive summary should give a complete overview of proposal.

## **Section 1: Project Description (4-5 pages)**

The Project Description must answer the specific scientific, technical, and/or commercial challenge(s) addressed by the proposed work, outline the technical approach to solve those challenges, include SMART milestones with go/no-go decision point(s), and have project deliverables that can be made available to RAPID members or the public (if other than Final Report).

### **1.1 Technical Challenge (~ 1 page)**

Focus on the fundamental knowledge, market opportunity and scientific, technical, and commercial challenges to address that opportunity.

### **1.2 Technical Approach (~ 1 page)**

Focus on the technical approach to address the challenges identified in Section 1.1.

### **1.3 Potential Impact (~ ½ page)**

Identify the commercial impact of the proposed investment if successful. The proposed technology innovation(s) should also be clear, along with how they represent advancements versus current manufacturing practice or the incumbent technology.

### **1.4 Relevance to the Goals of the RAPID Institute (~ ½ page)**

Identify the relevance of the proposed work to RAPID, noting the broader impact to RAPID goals as outlined in the RAPID Metrics document ([link](#)). . The following is an example that ties project-specific goals to RAPID's project metrics ([link](#)) - "These required module cost reductions are on the order of 30% for an intermediate volume production goal (100 to 1000 units per year) and 50% for the large volume production goal (> 1000 units per year). These cost reduction goals are consistent with RAPID Metrics 4 and 5." Project proposals should include tasks to work with RAPID to define models capable of formally assessing the ability of project results to translate to metric impact.

### **1.5 Commercialization Approach (approximately ½ page)**

Identify the proposed commercialization approach including target markets and how this technology is consistent with RAPID's goal of improving the competitiveness of U.S. manufacturing.

### **1.6 Resources (approximately ½ page)**

Outline key staff from partnering organizations that will be utilized on the proposed work, along with key facility and equipment capabilities that will be utilized. **Section 2: Work Plan** (4-5 pages)

## **Section 2: Work Plan** (4-5 pages)

The Work Plan should include a detailed overview of:

- Project Deliverables, i.e. what will be delivered upon successful completion of the project (experimental data, prototype components, workforce development strategy, materials and design, techno-economic analysis, etc.)
- Work Breakdown Structure, including detailed description of each major task and responsibility for each (to the extent possible, Projects should utilize industry standards for conducting and reporting materials testing, characterization, and resulting data).
- Schedule including start and end of each major task (Months from Project Start)
- Key S.M.A.R.T. Milestones, with metric of success, minimum of 1 milestone/quarter (See table below). Milestones should be concise, but as detailed as possible. For example, an overly general milestone of "Submit report" should instead be "Submit report covering X (e.g. specific experimental results) to Whom and When" so that completion of the milestone advances the project and can be easily verified.
- Go/No-Go decision points, at least one annual Go/No Go decision point for any proposed work that will span more than one year

S.M.A.R.T. Description

Acronym	Further Clarification
S = Specific	Clear and focused to avoid misinterpretation. Should include measures, assumptions, and definitions and be easily interpreted.
M = Measurable	Can be quantified and compared to other data. It should allow for meaningful statistical analysis. Avoid "yes/no" measures except in limited cases, such as start-up or systems-in-place situations.
A = Achievable	Attainable, reasonable, and credible under conditions expected.
R = Relevant	Fits into the organization's constraints and is cost-effective.
T = Timely	Doable within the time frame given.

### **2.1 Task Descriptions** (~ 2 pages)

Include key milestones, corresponding timing, and go/no-go decision points.

### **2.2 Technical and Commercial Risks** (~ 1 paragraph)

Suggested table format below.

Risk	Mitigation
<b>Technical:</b> XXXX	XXXX
<b>Commercial:</b> XXXX	XXXX

### 2.3 Schedule (~ 1 page)

Give Gantt chart / schedule of proposed project activities. Show each task in the schedule.

### 2.4 Deliverables (~ 1 paragraph)

Give the key deliverable for each of the identified tasks.

## Section 3: Budget Summary (limit 2 pages)

The budget summary should identify amounts and the source(s) of non-federal cost share (cash and In-kind) and the uses of funds (i.e. approximate annual allocations to each RAPID resource and to each high-level task). Budget should identify any key major resources that the project team intends to acquire. If possible, the budget should break down cost into categories of personnel costs, fringe benefits, equipment, supplies, travel, contractual costs to subcontractors, and indirect costs.

Formal cost share commitment letters will not be required as part of this proposal submission but will be required as part of project negotiations with RAPID and concurrence by the DOE. Inability to promptly provide letters of support could lead to project selection being rescinded.

	BP2 (4Q18)		BP3 (2019)		BP4 (2020)		BP5 (1Q21-1Q22)		Total	
Institution	Federal	Cost Share	Federal	Cost Share	Federal	Cost Share	Federal	Cost Share	Federal	Cost Share
Prime										
Partner 1										
...										
Partner n										
<b>Total</b>										

Task	BP2	BP3	BP4	BP5	Total
Task 1					
...					
Task n					
<b>Total</b>					

#### Section 4: Supplemental Information

RAPID encourages Applicants to include supporting literature references and supporting data.