Argor		Environmental Review F National Labo		Form: Version: Your Form ID Form Status: Date: Created By:	ANL-985 5 <b>D:</b> ANL-985-1620 Approved 3/16/2021 4:09:48 PM Lin, YuPo
Creator			-		
Badge:	46738		Name:	Lin, Yu	Ро
Cost Center:	114		Division:	AMD	
Job Title:	ElectroChe Engineer	mical and Bioprocessing	Employee Type	e: <b>Regula</b>	r Full-Time Exempt
Building:	362		Lab Extension:	2-3741	
General Inform		natration of cloatrachamical out	action and purificati	on of organia of	side in
Project/Activity	y Title: Demoi biorefi	nstration of electrochemical extr nery	action and purification	on of organic ac	cias in
ASO NEPA Tr	acking No.:		Type of Fu	nding: CRADA	
B & R	Code: BM010	01010-05450-0302017	Identifying Nu	mber: 2021-210	078
SPP Pr Nu	oposal umber:	C	RADA Proposal Nu	mber: 2021-21(	078
Work Project Nu	umber:		ANL Accounting Nu	mber: PRJ1000	0856 (Item 3a in Field Work Proposal)
Other (ex	plain):				
List appropriate	NEPA Owner NEPA Owner				

#### **Financial Plans**

To select a Financial Plan, click the magnifying glass icon to open a search window.

Cost Center: Project: Phase: Task:

### **Description of Proposed Action**

Argonne National Laboratory and Fermented Nutrient Corporation propose to assess technical and economic viability to extract and purify organic acid from fermentation broth using Argonne resin wafer electrodeionization technology. Technical development of the separation technology will be conducted in Argonne. FNC will provide support to produce and pretreat the fermentation broth, and analyze its content. FNC will demonstrate the separation technology in the field with a pilot-scale operation and conduct the test in their facility with technical consultation assistance from ANL. In preparing for the pliot-scale technology demonstration, A pilot-scale system at Argonne will be commissioned and test using 5 g/L NaCl aqueous. Total 40 L of aqueous of NaCl and Na2So4 will be used for the verification. After verification, the pilot-scale device will be sent to industrial site for demonstration

### **Description of Affected Environment**

This project will operate a pilot-scale electrochemical separation system at Argonne hibay building 369. There is no hazardous chemicals will be used, only aqueous of NaCl and Na2SO4 in a contained storage tanks.

### **Potential Environmental Effects**

- Attach explanation for each "yes" response near bottom of form.
- See Instructions for Completing Environmental Review Form.

Section A (Complete For All Projects)	Yes	No	Explanation	
Project evaluated				

Pre Wa opp deta unc 7, 8 belo	evention and ste Minimization portunities and ails provided der items 2, 4, 6, 3, 16, and 20 ow, as	c	©	
		Θ	0	air with Hydrogen < 0.0001wt.% escaped into air
Noi	se	0	$\odot$	
		$\odot$	o	< 20 g/L NaCl around 10 gals. and 2 gals of 2.5 wt.% Na2SO4. Total 100 g of NaCl and 2.5 Kg Na2So4 will be used. There is no storage
Pes	sticide Use	0	$\odot$	
Col (TS	ntrol Act SCA)			
6a.	Polychlorinated Biphenyls (PCBs)	0	o	
6b.	Asbestos or Asbestos Containing Materials	c	o	
6c.	Other TSCA Regulated Substances	0	o	
6d.	Import or Export of Chemical Substances	c	o	
Bio	hazards	0	$\odot$	
(If yes, see question #12 and		0	0	4 gals < 5 g/L NaCl solution and 4 gals 2.5 wt.% Na2SO4. Since all the liquid will be recirculated, there is no instant effluent generated. We will ask permission to discharge all the aqueous into drain or sew system since all the chemicals are non-hazardous. Discharges from sinks and condensate would be piped by pumping or gravity to the laboratory or sanitary sewer system, whichever is required. Argonne policies and procedures prohibit disposal of hazardous material, RCRA-regulated waste, or any other materials prohibited from drain disposal by Argonne procedures in any drains. The proposed laboratory and high bay sinks would drain to the laboratory sewer. No wastewater emissions containing UNPs are allowed.
	Construction or	0	o	
9b.	Hazardous	o	©	a. All RCRA hazardous waste generated during facility operations would be accumulated (in a Satellite Accumulation Area(s)) by qualified personnel who underwent Argonne-specific training. Requisitions for transfer of accumulated hazardous waste to a central on-site facility are completed by Argonne-certified personnel. The research personnel conform to the requirements in Argonne's Hazardous Waste Handling Procedures Manual. All on-site treatment, storage, and disposal would be performed in accordance with the RCRA Part B permit issued by the IEPA. The accumulated hazardous waste is disposed in accordance with Argonne's Part B permit, and in accordance with the requirement in Argonne's Waste Handling Procedures Manual. Any unused feed chemicals would be initially placed on the excess chemical inventory and if no new uses are found they will be disposed of by Argonne's waste management. The majority of the product generated would be sent back to the user, analytical labs, and battery manufacturers for testing. Any unwanted product would be logged into the SAA and disposed of by Waste Management.
	Pre Wa opp det unc 7, 8 bel app f det app f det app f det app f det app f det app f f Stol f f f f f f f f f f f f f f f f f f f	6a. Biphenyls (PCBs)   6b. Asbestos or Asbestos Containing Materials   6b. Other TSCA   6c. Regulated Substances   6d. Import or Export of Chemical Substances   Biohazards   Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)   Waste Management   9a. Construction or Demolition Waste   Oh Hazardous	Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicableCAir Pollutant EmissionsCAir Pollutant EmissionsCChemical/Oil Storage/UseCToxic Substances Control Act (TSCA) SubstancesCGa.Polychlorinated Biphenyls (PCBs)C6b.Asbestos or Asbestos Containing MaterialsC6c.Other TSCA SubstancesC6d.Import or Export of Chemical SubstancesCFffluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)CWaste ManagementC9a.Construction or Demolition WasteC	Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable C Image: Construction of Construction and 20 below, as applicable Image: Construction of Construction of Construction and 20 below, as applicable Image: Construction of Construct

	9c.	Radioactive Mixed Waste	0	⊙	
	9d.	Radioactive Waste	c	0	
	9e.	Asbestos Waste	c	$\odot$	
	9f.	Biological Waste	c	o	
	9g.	No Path to Disposal Waste	o	o	
	9h.	Nano-material Waste	c	$\odot$	
10.	Rad	diation	0	$\odot$	
11.	Vio Reg	eatened lation of ES&H gulations or mit Requirement	c	o	
12.	Fec	v or Modified leral or State mits	0	o	
13.	or Mo Mo Fac Tre	ng, Construction, Aajor dification of illity to Recover, at, Store, or pose of Waste	c	œ	
14.	Puk	lic Controversy	0	$\odot$	
15.		toric Structures	c	$\odot$	
16.	Pre	turbance of -existing ntamination	0	o	
17.	Res Cor Sus	ergy Efficiency, source nserving, and stainable Design stures	c	۲	
P	roje	ction B (For cts that Occur Outdoors)	Yes	No	
18.	Enc Spe Hat othe	eatened or langered ecies, Critical bitats, and/or er Protected ecies	c	c	
19.	We	tlands	0	С	
20.	Flo	odplain	0	$\circ$	
21.	Lan	dscaping	С	$\circ$	
		vigable Air	c	c	
23.		aring or avation	o	0	
24.		haeological sources	0	0	
25.	Uno Inje	derground ction	c	C	
	1			II	

26.	Underground Storage Tanks	0	o	
27.	Public Utilities or Services	C	c	
28.	Depletion of a Non-Renewable Resource	c	c	
Р	Section C (For rojects Outside of ANL)	Yes	No	
29.	Prime, Unique, or Locally Important Farmland	0	c	
30.	Special Sources of Groundwater (such as sole source aquifer)	c	c	
31.	Coastal Zones	0	$\circ$	
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	0	c	
33.	Action of a State Agency in a State with NEPA-type Law	o	c	
34.	Class I Air Quality Control Region	$\circ$	c	

### **Categorical Exclusion**

Other (Use field below to enter other categorical exclusion)

Pilot scale projects

### ANL NEPA Reviewer Use Only

C My approval is the final approval necessary

• This form requires additional approval from DOE

#### To be Completed by DOE/ASO

Section D	Yes	No				
Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal?	o	۲				
Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts?	o	۲				
If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211?	0	0				
Can the project or activity be categorically excluded from preparation of an Environment Assessment or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations?	۲	C				
If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded: This project may be excluded under the following Category of 10 CFR Part 1021, Subpart D, Appendix B: B 3.6 Small-scale research and development, laboratory operations, and pilot projects.						
If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D t	to Part 1021 of 1	0 CFR.				

### Attachments

### Comments

# Add Approver

Approver Name	Approver Badge	Reason	Delete
Willig, Ryne T.	232518	review	

### Notifications

The approval notification email will be copied to the people listed below.

Badge Name Division Delete

# ASO-CX Number

ASO-CX- 386

Comments:

# Approval

Approver	<u>Action</u>	Date Routed	Action Date	Approval Reason / Comments	<u>Approval</u> <u>Type</u>
Lin, YuPo	APPROVED	2021-03-25	2021-03-25 16:27:57.0	Creator :	PRIMARY
Lin, YuPo	APPROVED	2021-03-25	2021-03-25 16:27:57.0	Project Manager :	PRIMARY
Willig, Ryne T.	APPROVED	2021-03-25	2021-03-26 09:57:13.0	review :	PRIMARY
Mesarch, Matthew B	APPROVED	2021-03-26	2021-04-05 07:05:41.0	Added: :	PRIMARY
Pfeiffer, Mark Albert	APPROVED	2021-04-05	2021-04-05 08:43:29.0	Added: : No air permitting needed as no compounds of concern being emitted, just hydrogen according to the researcher	PRIMARY
Perez, Christina T.	APPROVED	2021-04-05	2021-04-05 12:08:08.0	Added: :	PRIMARY
Brunner, Donna L.	APPROVED	2021-04-05	2021-04-05 13:13:18.0	Added: :	PRIMARY
Thompson, Lawrence S.	APPROVED	2021-04-05	2021-04-05 14:09:58.0	Added: :	PRIMARY
Urgun Demirtas, Meltem	APPROVED	2021-04-05	2021-04-15 10:57:17.0	Added: :	PRIMARY
Harris, Amy M.	APPROVED	2021-04-15	2021-04-15 11:06:08.0	Added: :	PRIMARY
Lynch, Peter L.	APPROVED	2021-04-15	2021-04-19 08:00:54.0	Added: :	PRIMARY
Krumdick, Gregory K.	APPROVED	2021-04-19	2021-04-22 09:52:35.0	Added: :	PRIMARY
Harris, Amy M.	APPROVED	2021-04-15	2021-04-15 11:06:08.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2021-04-22	2021-05-28	ANL NEPA Reviewer : Worker	PRIMARY

		13:28:35.0	safety will be addressed via the Work Planning & Control process	
Hellman, Karen B.	APPROVED 2021-05-28	2021-06-02 10:38:39.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W.	APPROVED 2021-06-02	2021-06-04 12:01:45.0	ANL-985 ANL Deputy COO Review and Approval :	PRIMARY
Joshi, Kaushik N.	APPROVED 2021-06-04	2021-06-14 16:14:42.0	ANL-985 DOE-ASO Review and Approval : This DOE approval of the NEPA ERF CX is tracked as ASO-CX-386.	PRIMARY
Siebach, Peter Rudolf	APPROVED 2021-06-14	2021-06-15 09:49:29.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY