LIST OF APPROVED MATERIALS
GRANT-IN-AID - JULY 2017

LN OXYHALIDES:

CeOI	LnOBr (in PDF as tetragonal)	PmOI
CeOBr	PmOF	PmOBr

THE FOLLOWING MAY BE SUBMITTED IF NOT IN THE DATABASE:

Formula	PDF#		
ErOCl	00-049-1800	QM=I	R-3m
HoOCl	00-049-1799	QM=I	R-3m
LuOCl	00-035-1344	QM=I	R-3m
PmOCl	00-033-1089	QM=I	P4/nmm
SmOCl	00-012-0790	QM=I	P4/nmm
SmOCl	01-085-0709	QM=I	P4/nmm
TmOCl	00-049-1901	QM=I	R-3m
DyOF	00-033-0524	QM=I	cubic
HoOF	00-005-0548	QM=I	cubic
TbOF	01-085-0851	QM=I	R-3m
DyOI	00-036-0753	QM=I	P4/nmm
EuOI	01-085-0784	QM=I	P4/nmm
LuOI	00-042-0981	QM=I	P4/nmm
CeOBr	00-052-1846	QM=I	P4/nmm
EuBrO	04-009-9658	QM=I	P4/nmm
LuOBr	00-020-0653	QM=I	P4/nmm
LuOBr	00-052-1842	QM=I	R-3m
TmIO	04-007-5179	QM=I	P4/nmm
CeOF	00-022-0168	QM=I	cubic
CeOF	01-075-0249	QM=I	Fm-3m
CeOF	04-001-8458	QM=I	Fm-3m
PrOCl	00-009-0385	QM=I	P4/nmm

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PrOCl	04-007-9377	QM=I	P4/nmm

PHOSPHATES:

Experimental patterns to replace the following **PDF** patterns:

$F_5!3H_2O$	00-012-0053	$Zr_{2.25}(PO_4)_3$	00-038-0017
Fe_2F_5	00-012-0054		

Please consult the **PDF** cards for further information about each phase.

AURIVILLIUS PHASES:

$\{Bi_2O_2\}(CaBiNb_2O_7)$
$\{Bi_2O_2\}(FeBi_3Ti_4O_{13})$
$\{Bi_2O_2\}(CrBi_7Ti_6O_{25})$

MIXED SILLEN-AURIVILLIUS PHASES:

$\{PbBi_3O_4\}ClF(NbO_3)$
$\{PbBi_3O_4\}Cl_2(PbW_2O_7)$
$\{SrBi_3O_4\}ClF(NbO_3)$
$\{PbBi_3O_4\}BrF(NbO_3)$
$\{PbBi_3O_4\}Cl_2(ReO_4)$
$\{PbBi_3O_4\}Cl(Bi_3Zr_2O_9)$
$\{PbBi_3O_4\}Cl(PbTa_2O_7)$
$\{PbBi_3O_4\}Cl(SrTa_2O_7)$
$\{PbBi_3O_4\}Cl(Pb_2BiNb_4O_{16})$
$\{PbBi_3O_4\}Br(Bi_2Ti_3O_{10})$
$\{PbBi_3O_4\}Cl(Bi_2AlTi_2O_{10})$
$\{Bi_4O_4\}Cl(Bi_2FeTi_2O_{10})$
$\{Bi_4O_4\}Cl(Bi_3Fe_2Ti_2O_{13})$
$\{PbBi_3O_4\}Cl(PbBi_2Ti_4O_{13})$
$\{PbBi_3O_4\}Cl(SrBi_2Ti_4O_{13})$
$\{Bi_4O_4\}Cl(Bi_4Fe_3Ti_2O_{16})$
$\{Bi_4O_4\}Cl(Bi_5Fe_4Ti_2O_{19})$
$\{Bi_4O_4\}Cl(Bi_4Fe_5Ti_2O_{22})$
$\{Bi_4O_4\}Cl(Bi_7Fe_6Ti_2O_{25})$
$\{Bi_4O_4\}Cl(Bi_8Fe_7Ti_2O_{28})$
$\{Bi_4O_4\}Cl(Bi_9Fe_8Ti_2O_{31})$
$\{Bi_4O_4\}Cl(Bi_{10}Fe_9Ti_2O_{34})$

STRUCTURES WITH OTHER INTERLAYERS:

$\{CaBi_2FO_2\}CO_3$
$\{Bi_4O_4\}[AsO_4](UO_2)(H_2O)_2$

NEW CLASSES OF SUPERCONDUCTORS:

Magnetically ordered superconductors
A15 suuperconductors
Heavy electron superconductors
Organic superconductors

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Buckyball superconductors High Tc ixide conductors

ORGANICS:

Calcium Thioglycolate
5-Methyl Tetrahydrofolate

POLYMERS:

Polyvinyl Fluoride	$(C_2H_3F)n$
Poly(4-Methylpentene-1)	$(C_6H_{12})n$
Polyvinylidene Chloride	$(C_2H_2Cl_2)n$
Nylons Polyurethanes Silicones	
Poly (cyclopropyl acrylamide)	
Polyvinyl Acetate	$(C_4H_6O_2)n$
Poly(butadiene) ñ all isomers	Xanthum Gum
1,2-poly(butadiene)	Poly (cyano acrylate)
Cis-1,4 ñ poly(butadiene)	Poly (p-phenylene oxide)
Trans -1,4-poly(butadiene)	Poly (isopropyl acrylamide) Poly(methyl methacrylate), including isotactic syndiotactic

ALLOYS:

$Ag_2Mg_{12}Zn_{25}$	B_7Mg	Cu_9Se_5
Be_7Rh	$B_{10}Ni_{29}Sc_4$	$C_3La_2Mn_{22}$
B_3NdRh5	$Ce_5Ni_2Si_3$	$C_3Mn_{17}Si_4$
$B_6Pr_2Re_3$	$Co_2N_5Ta_4$	$C_5Mn_{34}Tb_4$

THE FOLLOWING MAY BE SUBMITTED IF NOT IN THE DATABASE:

Formula	PDF#		
(Ag3In)La4	01-072-5106	QM=I	I4/mmm
Sc4Ni29B10	03-065-8315	QM=I	I41/amd
Pr2Re3B6	04-010-0968	QM=I	C2/c

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COMMON NAME	EMPIRICAL FORMULA	COMMON NAME	EMPIRICAL FORMULA
Abramovite	Bi In Pb2 S7 Sn	Mischmetal [a mixture of lanthanides and cerium; a typical composition includes approximately 50% cerium and 25% lanthanum, with small amounts of neodymium and	
Arcubisite	Ag6 Bi Cu S4	Muntz metal [a casting alloy of approximate composition Cu3Zn2]. [Not an IMA name.]	
Coiraite	As3 Fe (Pb, Sn)12.5 S28 Sn5	Platynite	(Bi, Pb) (S, Se)
Csiklovaite	Bi, S, Se, Te	Selenopolybasite	[(Ag, Cu)6 (As, Sb)2 (S, Se)7
Dienerite	As Ni3	Sztrokayite [Not an IMA name.]	Bi3 S2 Te
Dzhezkazganite	Pb, Re, S	Viqenite	Fe4 O S8
Ferchromide	Cr1.5 Fe0.2		
Hexaferrite	**Fe**, Ir, Os, Ru		
Horsfordite	Cu5 Sb		
Icosahedrite [Icosahedral, Fm-3-5, a6D = 12.64 (six- dimensional notation)]	Al13 Cu24 Fe13		
Jeromite	As (S, Se)2		
Joseite C	Bim (S, Se, Te)p [m+p=7]		
Kitaibelite [Not an IMA name.]	Ag10 Bi30 Pb S51		
Lukkulaisvaaraite	Ag2 Pd14 Te9		
Marumoite	As40 Pb32 S92		
Mayckainite	Cu10 (Cu, Fe, Zn)3 Ge3 Mo S16		
Metastibnite	S3 Sb2		

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NEW ITEM:

Non-ambient diffraction patterns of materials that show technologically interesting physical properties at such conditions.

CLAYS:

Clays that are not in the PDF-4+ database with raw data.

BATTERY MATERIALS:

Lithium Manganese Dioxide $LiMnO_2$ (rhombohedral)

MICRO & MESO POROUS MATERIALS:

Micro & Meso porous materials that are not in PDF-4+ database

METAL ORGANIC FRAMEWORK (MOF) MATERIALS:

Metal Organic Framework (MOF) materials that are not in PDF-4+ database

HYDROGEN STORAGE MATERIAL

Hydrogen Storage Materials that are not in PDF-4+ Database

MODULATED STRUCTURES

Experimental patterns of well characterized modulated structures that are not in PDF-4+

NEUTRON DIFFRACTION PATTERNS

Neutron diffraction patterns of technologically important materials

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NARCOTICS

Narcotics that are not in the Powder Diffraction File with good quality raw powder patterns

3-METHYLFENTANYL	CLONITAZENE	ETORPHINE	NORMORPHINE
3-METHYLTHIOFENTANYL	COCOA LEAF	ETOXERIDINE	NORPIPANONE
ACETORPHINE	CODOXIME	FENTANYL	OPIUM
ACETYL-ALPHA-METHYLFENTANYL	CONCENTRATE OF POPPY STRAW	FURETHIDINE	ORIPAVINE
ACETYLDIHYDROCODEINE	DESOMORPHINE	HYDROMORPHINOL	OXYMORPHONE
ACETYLMETHADOL	DEXTROPROPOXYPHENE	HYDROMORPHONE	PARA-FLUOROFENTANYL
AH-7921	DIAMPROMIDE	LEVOPHENACYLMORPHAN	PEPAP
ALFENTANIL	DIETHYLTHIAMBUTENE	METAZOCINE	PETHIDINE
ALPHACETYLMETHADOL	DIFENOXIN	METHADONE INTERMEDIATE	PETHIDINE INTERMEDIATE B
ALPHAMEPRODINE	DIHYDROETORPHINE	METHYLDESORPHINE	PETHIDINE
ALPHAMETHADOL	DIHYDROMORPHINE	METHYLDIHYDROMORPHINE	PHENAMPROMIDE
ALPHA-METHYLFENTANYL	DIMENOXADOL	METOPON	PHENAZOCINE
ALPHA-METHYLTHIOFENTANYL	DIMEPHEPTANOL	MORAMIDE INTERMEDIATE	PHENOMORPHAN
ALPHAPRODINE	DIMETHYLTHIAMBUTENE	MORPHERIDINE	PHOLCODINE
ANILERIDINE	DIOXAPHETYL BUTYRATE	MORPHINE METHOBROMIDE	PIMINODINE
BENZETHIDINE	DIPHENOXYLATE	MPPP	PIRITRAMIDE

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NARCOTICS

BETACETYLMETHADOL
BETAMEPRODINE
BETAMETHADOL
BETAPRODINE
BEZITRAMIDE
CANNABIS
CANNABIS RESIN/EXTRACTS & TINCTURES OF CANNABIS
DIPIPANONE
DROTEBANOL
ECGONINE
ETHYLMETHYLTHIAMBUTENE
ETHYLMORPHINE
ETONITAZENE
NICOCODINE
NICODICODINE
NICOMORPHINE
NORACYMETHADOL
NORCODEINE
NORLEVORPHANOL
NORMETHADONE
PROHEPTAZINE
PROPERIDINE
PROPIRAM
REMIFENTANIL
THEBACON
THIOFENTANYL
TILIDINE
TRIMEPERIDINE