#1 CONTACT INFORMATION:

<table>
<thead>
<tr>
<th>Procedure Title</th>
<th>Crystallization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure Author</td>
<td>Dominic Rebollar</td>
</tr>
<tr>
<td>Date of Creation/Revision</td>
<td>9/16/15</td>
</tr>
<tr>
<td>Name of Responsible Person</td>
<td>Tao Xu</td>
</tr>
<tr>
<td>Location of Procedure</td>
<td>Xu labs</td>
</tr>
</tbody>
</table>

#2 THIS STANDARD OPERATING PROCEDURE (SOP) IS FOR A:

- [ ] Specific laboratory procedure or experiment
- [x] Generic laboratory procedure that covers several chemicals
- [ ] Generic use of specific chemical or class of chemicals with similar hazards

#3 PROCESS OR EXPERIMENT DESCRIPTION

Crystallization of Perovskite compounds

| Frequency: | □ one time □ daily [x] weekly □ monthly
|           | □ other: _____________________ |
| Duration per Expt: | _________ minutes; or 12.39 hours |

#4 SAFETY LITERATURE REVIEW & HAZARD SUMMARY

For assistance with this form contact NIU Environmental Health and Safety, 815-753-0404.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Fume Hood/Glove Box or other</td>
<td>Location: Center of room</td>
</tr>
<tr>
<td>Ventilation Control</td>
<td></td>
</tr>
<tr>
<td>Eyewash/Safety Shower</td>
<td>Location: Hallway</td>
</tr>
</tbody>
</table>

3. 

4. 


6. Clean up work area and lab equipment.

7. Remove PPE and wash hands.

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#7 WASTE DISPOSAL

- Inorganic waste *(be sure to weigh*)

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#8 TRAINING REQUIREMENTS

General Training *(check all that apply)*:
- General Safety & Emergency Preparedness

For assistance with this form contact NIU Environmental Health and Safety, 815-753-0404.
NIU Standard Operating Procedure Template

Chemical Safety for Laboratories

☐ Radiation Safety
☐ Biosafety training
☐ Other: ____________________________

Location Where Records Maintained: Bld 363 - Stock Room

Laboratory-specific training (check all that apply):

☐ Review of SDS for other chemicals involved in process/experiment
☐ Review of this SOP
☐ Other: ____________________________

Location Where Records Maintained: ____________________________

#9 PRIOR APPROVALS

Prior approvals are required by the following University Committees:

Radiation Safety Committee: Radioactive material,
  http://www.ehs.niu.edu/ehs/lasersafety/RAM/index.shtml
Radiation Safety Committee: X-Ray machines
  http://www.ehs.niu.edu/ehs/lasersafety/XRay/index.shtml
Laser safety: Laser producing equipment Class 3b or above.
  http://www.ehs.niu.edu/ehs/lasersafety/Laser/index.shtml
IACUC: Animal use in research
  http://www.orc.niu.edu/orc/animal_research/index.shtml
IBC: Recombinant DNA, potential pathogens, human tissue/body fluids
  http://www.orc.niu.edu/orc/biosafety/niupolicy.shtml
4. Safety
   i) Fuming solvents, keep well ventilated
   ii) Toxic chemicals, do not inhale/expose to skin

5. Storage requirements
   - Clean glassware
   - Stable, nonvibrating work bench
   - Dark room

6. Operating Procedure (safety goggles & gloves)
   1) Create precursor solution
   2) Place in well-ventilated area in "large" beaker/container
   3) Allow for temperature = 10-30°C below solvent boiling point
   4) Leave undisturbed for ~12-48 hours
   5) Check for crystal growth