**4) Research plan**

Please be sure all files satisfied followings:

- The number of pages should not exceed 4 in A4 size.

- The file size should not exceed 3MB.

- Put a “.pdf” extension at the end of the filename.

- Remove security settings or password.

- Delete all instructions/examples highlighted in red.

**i) Purpose(s) of this proposed experiment (State clearly what you intend to clarify in this experiment while referring to a summary of previous works including preliminary experiments)**

- Give a specific goal(s) of this experiment in your research project while referring to the scientific background in the previous section.

- While referring to a data set(s) obtained by previous works and your preliminary experiments (especially by a similar method such as synchrotron X-ray), please state clearly what you intend to clarify using a neutron/muon instrument in MLF.

- If this is one of series of experiments conducted in multiple proposal rounds, state clearly a difference from the previous experiments at MLF.

- If you have any specific reason to use the particular neutron /muon instrument of MLF, please state the reason clearly.

**ii) Experimental and data analysis methods**

- Describe the details of your experimental method (e.g., measurement condition(s), number of measurements, data analysis protocol, etc.) to achieve the goals above.

- Describe expected results of this experiment (e.g., change in a lattice parameter, excited energy, film’s thickness, element distribution, etc.) and also how these results would be useful to achieve your research goals.

- If you plan to perform an experiment with special technique such as isotope labeling, describe how the experiment and data analysis are conducted in detail.

- Describe expected difficulties, if any, in conducting this experiment such as a difficulty in sample preparation, in setting up a sample environment, in data analysis, in having high resolution, in reducing background level, etc.)

- Describe the name of the contact person if you have consulted with him/her previously.

**iii) Beamtime request and justification**

Beamtime should be estimated based on your experimental method in Section 5.

Examples:

A: 1 (hour/sample/T) x 12 (samples) x 5 (temperatures) + 6 (hours, time for changing T) + 6 (hours, time for measuring background and changing a sample, etc.) = 72 hours

B: For time-slicing measurement, 3 (hour/condition) x 2 (samples) x 5 (temperatures) = 30 hours are required. After that, 0.5 (hour/condition) x 2 (samples) x 5 (temperatures) = 5 hours are required to confirm the final structure. Consequently, 36 hours are required including 1 hour for basic data and loss time.