

Instructions for Abstract Preparation

- Suitability of contents will be judged by Scientific Committee, possibly with comments for preparing the Extended Abstract.
 - Abstract template file is provided in <https://www.longtermnpp2021.com/>
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Title Of The Paper (Left aligned; Calibri; Lower case; 14 points; **Bold**)

(one line space)

First A. Author¹, Second B. Author^{1,2} and Third C. Author² (Left aligned; Calibri; Lower case; 11 points; **Bold**)

(one line space)

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(two lines space)

KEYWORDS: (Calibri; Upper case; 11 points; **Bold**) Up to **6** keywords (Left and Right justified; 11 points)

(one line space)

ABSTRACT (Left aligned; Calibri; Upper case; 11 points; **Bold**)

(one line space)

The text (Left and Right justified, Calibri, 11 points, single spaced) should provide a clear description of the work to be presented, including essential information such as: background, aim and scope of the work; adopted methods and techniques; elements of novelty; main achievements and conclusions.

Number of words is preferably within **400**.

Figures are allowed, but limited to one or two.

No tables should be included, unless absolutely necessary.

(one line space)

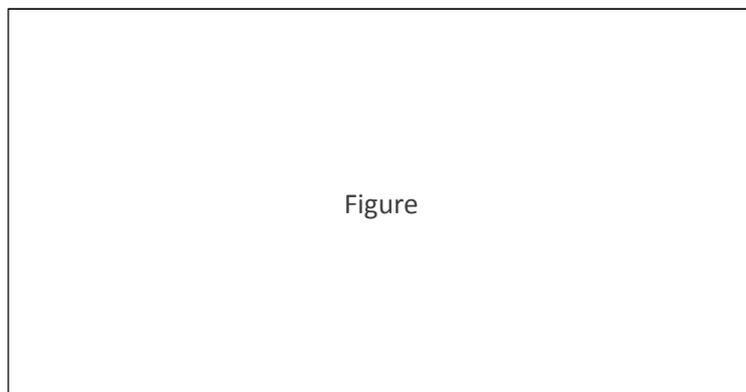


Figure 1. (Calibri; Lower case; 10 points; **Bold**; *Italic*) *Figure caption* (Calibri; Lower case; 10 points; *Italic*)
(one line space)

An example of Abstract writing is shown in the next page.

Development of new core cooling system for nuclear power plants

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KEYWORDS: Liquid Level, Measurement Method, Reactor Core, Sensor, Radiation, Chemical Reaction

ABSTRACT

This is an example of Abstract writing with a fictional achievement. Severe accident may start with core degradation due to long-term loss of sufficient coolant injection into the core. To prevent further degradation of the core from occurring, it is very important to know the liquid level transient in the core by using suitable measurement methods even under extreme conditions during a severe accident. While loss of structural integrity makes it difficult to continuously monitor the liquid level in the core, we have successfully established a novel measurement method by using a newly-developed sensor. The new sensor utilizes an innovative combination of new materials and a special structure of small-diameter long flexible sheath tube. Local condition around the sensor tip during severe accident was identified by using a severe accident analysis code. The developed sensor illustrated in Fig. 1 may withstand circumferential temperatures up to 3000 K for more than 10 hours being tested by using a newly designed large crucible (size: @@@ mm x ### mm x %%% mm). A special furnace was also employed to keep the high temperature condition in the crucible. The sensor indicates an excellent performance even under extremely high radiation dose more than 900 MGy and withstands chemical reactions due to significant amounts of iodine that comes from the degraded core. In the paper, major aspects of the measurement method and the newly developed sensor will be described with a discussion on the reasons how such a novel performance was attained. Major testing methods will be explained with key characteristics, which include irradiation testing by using a high-flux test reactor. Since the developed sensor still has several problems for improvements, future R&D subjects are discussed in detail. (280 words)

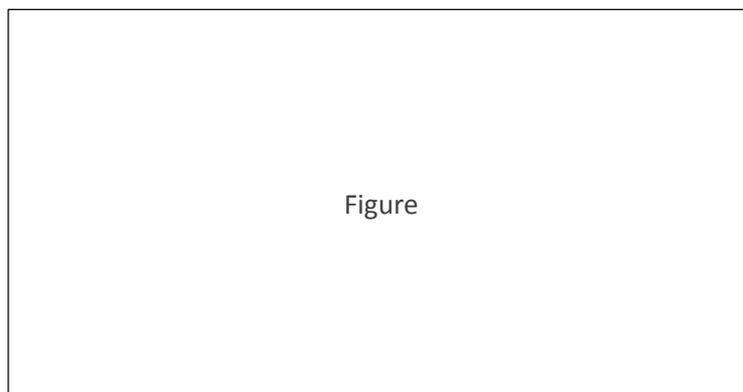


Figure 1. Structure of Developed Sensor to Estimate Liquid Level in Degraded PWR Core during Severe Accident