



# Nuclear Knowledge Push

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INIS Centre of China



# Outline

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1. Introduction of Knowledge Push
2. Construction of Nuclear Knowledge Push System of INIS Database on CNIC Website
3. Future Development of Nuclear Knowledge Push



# 1. Introduction of Knowledge Push

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## 1.1 Shortcomings of Knowledge Pull

- Lack of Timeliness
- High Requirement for User
- Passive Way of Offering Knowledge
- Low Recall Ratio and Precision Ratio

# 1. Introduction of Knowledge Push



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## 1.2 Advantages of Knowledge Push

- Timeliness
- Low Requirement for User
- Active Way of Offering Knowledge
- Satisfy Characteristic Demand
- Save Time



## 2. Construction of Nuclear Knowledge Push System

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### 2.1 Principles of Nuclear Knowledge Push

- High Precision Ratio
- Updated Data



## 2. Construction of Nuclear Knowledge Push System

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### 2.2 Process of Nuclear Knowledge Push

#### 2.2.1 To Choose Push Target User

(1) According to Registration Information

- Researchers
- Students
- Managers
- Others



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.1 To Choose Push Target User

(2) According to Retrieval Information

- Users with Valid Retrieval Information
- Users without Valid Retrieval Information



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.2 To Establish User Information Database

#### (1) Basic Characteristic Model

- User ID
- Information of User's Institute
- Information of User's Position



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.2 To Establish User Information Database

#### (2) Advanced Characteristic Model

- Original Retrieval Information of User
- User's Interest Analysis
- Characteristic Retrieval Formula
- Knowledge Pushed to User



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### 2.2.3 To Establish Characteristic Retrieval Formula

(1) To Analyze Users' Demand

- Literature Subject Content Retrieval Condition
- Limited Retrieval Condition



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### 2.2.3 To Establish Characteristic Retrieval Formula

(2) To Analyze Literature Subject Content and Divide Them into Several Specific Subjects.



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### 2.2.3 To Establish Characteristic Retrieval Formula

(3) To Divide the Concept of All Specific Subjects into Core Concept and General Concept.



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### 2.2.3 To Establish Characteristic Retrieval Formula

(4) To Establish Retrieval Formula of Every Specific Subjects.

The Retrieval Formula:

{ { ( Core Concept A ) in ( Title ) or ( Core Concept A ) in ( DE ) } and { ( Core Concept B ) in ( Title ) or ( Core Concept B ) in ( DE ) } ..... } and { ( General Concept C ) and ( General Concept D ) ..... }



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.3 To Establish Characteristic Retrieval Formula

(5) To Adjust the Retrieval Formula According to Retrieval Results.



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.3 To Establish Characteristic Retrieval Formula

(6) To Synthesize Retrieval Results of Every Specific Subjects and Figure out the Final Retrieval Result.

Retrieval Result of Literature Subject Content  
= Retrieval Results A or Retrieval Results  
B .....



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.3 To Establish Characteristic Retrieval Formula

(7) To Limit Retrieval Result of Literature Subject Content by Limited Retrieval Condition.

The Final Retrieval Result = Literature Subject Content Retrieval Condition and Limited Retrieval Condition



## 2. Construction of Nuclear Knowledge Push System

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For Example:

No.	Records	Request
1	471	burnup and npp
2	7	burnup and monitor
3	16712	npp
4	483	burnup and nuclear power plant
5	4248	burnup and analysis
6	950	burnup and determination



## 2. Construction of Nuclear Knowledge Push System

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(1) To Analyze the Literature Subject Content and Divide Them into Several Specific Subjects.

- Subject 1: nuclear power plant and burnup
- Subject 2: burnup monitoring
- Subject 3: burnup analysis
- Subject 4: burnup determination



## 2. Construction of Nuclear Knowledge Push System

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(2) To Divide the Concept of All Specific Subjects into Core Concept and General Concept.

- Subject 1:

**Core Concept:** burnup (Descriptor)

**General Concept:** nuclear power plants (Descriptor)

- Subject 2 :

**Core Concept :** burn\*up monitor\*, monitor\* of burn\*up



## 2. Construction of Nuclear Knowledge Push System

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(2) To Divide the Concept of All Specific Subjects into Core Concept and General Concept.

- Subject 3:

**Core Concept:** burn\*up analysis\*, analysis\* of burn\*up

- Subject 4:

**Core Concept:** burn\*up determin\*, determin\* of burn\*up

(“\*” is wildcard)



## 2. Construction of Nuclear Knowledge Push System

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(3) To Establish Retrieval Formula of Every Specific Subjects.

- Subject 1:

No.	Records	Request
1	14230	(burnup in ti) or (burnup in de)
2	86237	nuclear power plants
3	682	#1 and #2



## 2. Construction of Nuclear Knowledge Push System

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(3) To Establish Retrieval Formula of Every Specific Subjects.

- **Subject 2:**

No.	Records	Request
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1	20	(burn*up monitor* in ti) or (monitor* of burn*up in ti)
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## 2. Construction of Nuclear Knowledge Push System

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(3) To Establish Retrieval Formula of Every Specific Subjects.

- Subject 3:

No.	Records	Request
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1	131	(burn*up analysis* in ti) or (analysis* of burn*up in ti)
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## 2. Construction of Nuclear Knowledge Push System

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(3) To Establish Retrieval Formula of Every Specific Subjects.

- **Subject 4:**

No.	Records	Request
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1	236	(burn*up determin* in ti) or (determin* of burn*up in ti)
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(TI Refers to Title, DE Refers to Descriptor)



## 2. Construction of Nuclear Knowledge Push System

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(4) To Adjust the Retrieval Formula According to Retrieval Results.

- Subject 1:

No.	Records	Request
1	14230	(burnup in ti) or (burnup in de)

## 2. Construction of Nuclear Knowledge Push System

(5) To Synthesize Retrieval Results of Every Specific Subjects and Figure out the Final Retrieval Result.

**No.    Records    Request**

**1       14230    (burnup in ti) or (burnup in de)**

**2       20       (burn\*up monitor\* in ti) or (monitor\* of burn\*up in ti)**

**3       131    (burn\*up analysis\* in ti) or (analysis\* of burn\*up in ti)**

**4       236    (burn\*up determin\* in ti) or (determine\* of burn\*up in ti)**

**5       14238    #1 or #2 or #3 or #4**



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.4 To Retrieve Information in the Database Automatically

- An Executive Program Will be Set Up.
- When the Retrieval Result is 0, the Server Will Cancel Knowledge Push Automatically.



## 2. Construction of Nuclear Knowledge Push System

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### 2.2.5 Nuclear Knowledge Push Based on User's Interest

- Knowledge Pushed to User
- Link to the Characteristic Website



# 3. Future Development of Nuclear Knowledge Push

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## 3.1 Full-Automatically Knowledge Push

- Pull First and Push Later
- Full-Automatically Knowledge Push



Thank you

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