

Evaluation of FY2017 Operating Results for
National Institute for Materials Science

August 2018

Minister of Education, Culture, Sports, Science and Technology

1. Items related to the evaluation		
Agency	National Institute for Materials Science	
FY for evaluation	FY evaluation	FY2017 (4th term)
	Mid to long-term objective period	FY2016- FY2022

2. Items related to the assessor			
The Competent Minister	Minister of Education, Culture, Sports, Science and Technology		
Incorporated jurisdiction dept.	Research Promotion Bureau	Dept. and person in charge	Materials Science and Nanotechnology Development Division, Yasushi Saito
Evaluation and inspection dept.	Science and Technology Policy Bureau	Dept. and person in charge	Planning and Evaluation Division, Keiji Inoue

3. Items regarding implementation of the evaluation
<p>July 11, 2018: The National Institute for Materials Science Sub-Committee (9th), the National Research and Development Agency Council under MEXT (hereafter referred to as the “Sub-Committee”) conducted a hearing, including opinions and explanations from the director and the auditor about the results of the Agency’s self-evaluation, and received advice in line with scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p> <p>July 24, 2018: Sub-Committee (10th) conducted an additional hearing on the results of the Agency’s self-evaluation, and received advice in line with the scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p> <p>August 22, 2018: General meeting of the National Research and Development Agency Council under MEXT (12th) received advice in line with scientific knowledge from the committee regarding the implementation of evaluations conducted by the competent minister.</p>

4. Important items and others relating to the evaluation

1. Overall evaluation								
Rating*1 (S, A, B, C, D)	A	(Reference) Overall rating in the past fiscal years in this mid to long-term objective period*2						
		FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
		B	A	-	-	-	-	-
Reasons for rating	As shown in the overall evaluation of the agency as a whole, the creation of considerable achievements and anticipated creation of achievements in the future and so on were recognized as a result of comprehensive consideration based on circumstances surrounding the agency's business achievements, efforts and so on through its activities and with the national research and development agency's mid to long-term objectives taken into account.							

2. Evaluation of the whole agency
<ul style="list-style-type: none"> • <u>More aggressive top management and clearer directions of activities</u> as a designated national research and development agency can be evaluated. • It is expected for NIMS to continue its strenuous efforts to promote innovative material development which may result in social innovation by further clarifying its R&D policies and <u>combining it with bottom-up theme proposition</u> such as free-thinking based research. • <u>Establishment of specific bases for industry-academia-government collaboration (platform)</u> such as <u>M-cube</u> was evaluated. With this platform as the starting point, the Agency is expected to focus on measures to accelerate collaborative activities. • With regard to international activities, the Agency is expected to continue to take its role for leading the nation <u>in terms of research capabilities, platform functions, intellectual properties, standardization and human resources so as to deploy the strength of the agency in the world</u> based on national policies and with priority on national interests.

3. Issues to be solved and /or improved for each subject

4. Other items	
Main opinions of the council on research and development	<ul style="list-style-type: none"> • With regard to the fields of R&D covered by NIMS, in particular the development of functional materials, a considerable number of individual themes may be proposed due to a variety of combinations between materials and technologies. It is considerably important to define the way of managing research projects to prevent their achievements as a collection of individual achievements pointing various directions. There seems to be a room for further systematic integration as far as the situation in FY2017 is taken into account. It is, therefore, expected for NIMS to focus on the discussion of research strategy and guideline including a mid to long-term view. • The importance of expanding material study to informatics study using experimental data obtained from material research has been pointed out, but how to establish an efficient form of platform for integrating the industry, academia and government for the use and application of data is one of the issues to solve. The key for the future progress in this field is the incentive granted to private companies for sharing their proprietary data. It is expected that this issue is developed as a national challenge involving not only NIMS but the entire state. • An environment to facilitate exploratory research is being formulated with the aid of expenses at president's discretion. It is expected to develop challenging research to technological seeds.
Auditor's special comments	<ul style="list-style-type: none"> • The business operations of the Agency are being appropriately implemented in compliance with laws and regulations, and effectively and efficiently toward achieving mid to long-term objectives without fail. • The business report correctly shows the status of the Agency, and the statement of account and financial statements prepared in accordance with the budget classification appropriately displaying the status of its assets, and profit and loss statements. • The Agency's efforts for addressing matters stipulated in the past cabinet decisions, such as basic policies concerning the reform of incorporated administrative agencies are recognized as reasonable.

*1 S: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward "maximization of R&D achievements" under the conditions of appropriate, effective and efficient operations are recognized

- A: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward "maximization of R&D achievements" under the conditions of appropriate, effective and efficient operations are recognized.
- B: Based on the National Research and Development Agency's aims, business, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward "maximization of R&D achievements" were recognized, and steady business operations have been also recognized.
- C: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward "maximization of R&D achievements" or "the appropriate, effective and efficient operations" are anticipated.
- D: Based on the National Research and Development Agency's aims, businesses, mid to long-term objectives and so on, as a result of comprehensive consideration based on some circumstances regarding the agency's business achievements, efforts and so on through its activities, special efforts and improvements including a fundamental drastic review, toward "maximization of R&D achievements" or "the appropriate, effective and efficient operations" are required.

Mid to long-term objectives (Mid to long-term plan)	FY evaluation							Itemized evaluation document No.	Remarks
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022		
I. Measures to be taken for achieving the objectives concerning maximization of R&D achievements and quality improvement of other operations	-	-	-	-	-	-	-		
1. Basic research and fundamental R&D of materials science technology	-	-	-	-	-	-	-		
1.1 Basic research and fundamental R&D of focused research area	-	-	-	-	-	-	-		
1.1.1 R&D in the field of functional materials	B	B	-	-	-	-	-	I-1-1-1	
1.1.2 R&D in the field of energy and environmental materials	A	A	-	-	-	-	-	I-1-1-2	
1.1.3 R&D in the field of magnetic and spintronics materials	A	S	-	-	-	-	-	I-1-1-3	
1.1.4 R&D in the field of structural materials	B	A	-	-	-	-	-	I-1-1-4	
1.1.5 R&D in the field of nanomaterials	A	A	-	-	-	-	-	I-1-1-5	
1.1.6 R&D in the field of advanced material analysis technology	A	A	-	-	-	-	-	I-1-1-6	
1.1.7 R&D in the field of information integration type materials science	B	B	-	-	-	-	-	I-1-1-7	

Mid to long-term objectives (Mid to long-term plan)	FY evaluation							Itemized evaluation document No.	Remarks
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022		
II. Measures to be taken for achieving the objectives concerning the efficiency of the administration of the operations	-	-	-	-	-	-	-		
1. Basic policy on research organization and business operations	B	B	-	-	-	-	-	II-1	
2. Basic policy for business operation	-	-	-	-	-	-	-		
(1) Enhancement and reinforcement of internal control	B	B	-	-	-	-	-	II-2-(1)	
(2) Utilization of third-party evaluation/advice concerning the agency's business operation and so on	B	B	-	-	-	-	-	II-2-(2)	
(3) Effective evaluation of business performance of staff	B	B	-	-	-	-	-	II-2-(3)	
(4) Efficiency of the overall operations	-	-	-	-	-	-	-		
① Streamlining and efficiency of operational expenses	B	B	-	-	-	-	-	II-2-(4) ①	
② Streamlining and efficiency of personnel expenses	B	B	-	-	-	-	-	II-2-(4) ②	
③ Appropriateness of contract	B	B	-	-	-	-	-	II-2-(4) ③	

2. Promotion of transmission and utilization of research achievement	-	-	-	-	-	-	-		
2.1 PR and outreach activity and information use	-	-	-	-	-	-	-		
2.1.1 Promotion of PR and outreach activity	S	S	-	-	-	-	-	I-2-1-1	
2.1.2 Transfer of information on research achievement	B	B	-	-	-	-	-	I-2-1-2	
2.2 Promotion of use of intellectual properties	B	B	-	-	-	-	-	I-2-2	
3. Activity as a core institute	-	-	-	-	-	-	-		
3.1 Shared use of facilities and equipment	A	A	-	-	-	-	-	I-3-1	
3.2 Development and quality improvement of researchers and engineers	B	A	-	-	-	-	-	I-3-2	
3.3 Establishment of academic collaboration on materials science	B	B	-	-	-	-	-	I-3-3	
3.4 Establishment of collaboration with industry in materials science	A	A	-	-	-	-	-	I-3-4	

④ Review of holdings	B	B	-	-	-	-	-	II-2-(4) ④	
(5) Other efforts relating to the administration of the operations	B	B	-	-	-	-	-	II-2-(5)	
III. Measures to be taken for achieving the objectives concerning improvement of financial contents	-	-	-	-	-	-	-		
1. Budget (Including personnel expenses)/ income and expenditure plan, and funding plan	B	B	-	-	-	-	-	III-1	
2. Limit amount of short-term borrowing	-	-	-	-	-	-	-	III-2	
3. If the agency has any unnecessary property or any property that is expected to be unnecessary property, a plan for disposal of such property	-	-	-	-	-	-	-	III-3	
4. If the agency intends to transfer or provide as collateral any important property other than the property provided for in the preceding item, a plan therefor;	-	-	-	-	-	-	-	III-4	
5. Purpose of using accumulated profit	B	B	-	-	-	-	-	III-5	
IV. Other matters concerning the administration of the operations specified by ordinance of the competent ministry	-	-	-	-	-	-	-		
1.Plans for equipment and facilities	B	B	-	-	-	-	-	IV-1	

3.5 Analysis, strategic planning and information transfer for materials science research	B	A	-	-	-	-	-	I-3-5			2. Plans for personnel	B	B	-	-	-	-	-	IV-2	
3.6 Other activities as a core institution	B	A	-	-	-	-	-	I-3-6			3. Debt burden over the mid to long-term objective period	-	-	-	-	-	-	-	IV-3	
											4. Use of a reserve fund	B	B	-	-	-	-	IV-4		

* For items that are set to “high” level of importance, a “circle” shall be marked next to each comment.

For items that are set to “high” level of difficulty, each comment shall be underlined.

* The evaluation is based on “Standards concerning the evaluation of independent administrative agencies under the jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology” (determined by the Minister of Education, Culture, Sports, Science and Technology on June 30, 2015). Details are as follows:

[Administrative and projects related to research and development (I)]

S: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, especially the creation of considerable achievements, anticipated creation of special achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective, and efficient operations are recognized.

A: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of considerable achievements, anticipated creation of achievements in the future and so on toward “maximization of R&D achievements” under the conditions of appropriate, effective, and efficient operations are recognized.

B: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievement, efforts and so on through its activities, a certain degree of expectation for the creation of achievement and creation of achievement in the future toward “maximizing the achievements of R&D achievements” were recognized, and steady business operations have been also recognized.

C: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts and so on through its activities, the creation of achievements, further drastic efforts and improvements toward “maximization of R&D achievements” or the “appropriate, effective, and efficient operations” are anticipated.

D: Based on the National Research and Development Agency’s aims, businesses, mid to long-term objectives and so on, and as a result of comprehensive consideration based on some circumstances regarding the agency’s business achievements, efforts through its activities, special efforts and improvements including a fundamental drastic review, toward “maximization of R&D achievements” or the “appropriate, effective, and efficient operations” are required.

[Other than administrative work and projects regarding research and development (After II)]

S: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized quantitatively and qualitatively in the medium-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned medium-term value (or planned FY value), and remarkable performance is also recognized qualitatively)

A: Based on the activities of a corporation, remarkable performance exceeding the intended objectives is recognized in the medium-term plan (in terms of quantitative indicators, 120% or more vis-à-vis planned medium-term value (or planned FY value).

B: Performance exceeding the intended objectives is recognized in the medium-term plan (in terms of quantitative indicators, 100% or more but less than 120% vis-à-vis planned medium-term value (or planned FY value).

C: Performance falls below the intended objectives in the medium-term plan, requiring improved performance (in terms of quantitative indicators, 80% or more but less than 100% vis-à-vis planned medium-term value (or planned FY value).

D: Performance falls below the intended objectives in the medium-term plan, requiring drastic improvement of business including its abolishment (in terms of quantitative indicators, less than 80% vis-à-vis planned medium-term values (or planned FY value), or it is recognized that the competent Minister is required to make an order for improving business operation or taking other necessary measures).