

# Evaluation of FY2016 Operating Results for National Institute for Materials Science

August 2017

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	FY2016 (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, Kenji Matsuoka

3. Items regarding implementation of the evaluation
<p>July 14, 2017: The National Institute for Materials Science Sub-Committee (7th), 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 26, 2017: Sub-Committee (8th) conducted an additional hearing on the results of the Agency’s self-evaluation, and received advice from the committee in line with the scientific knowledge regarding the implementation of evaluations conducted by the competent minister.</p> <p>August 3, 2017: Sub-Committee (10th) 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
October 1, 2016 Became the designated National Research and Development Agency

1. Overall evaluation								
Rating <sup>**1</sup> (S, A, B, C, D)	B	(Reference) Overall rating situation for the past FY years compared with the same period during this FY *2						
		FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
		B	-	-	-	-	-	-
Reasons for rating	As shown in the overall evaluation of the agency as a whole, it is recognized that more than expected progress in performance is steadily implemented in the mid to long-term plan and the FY plan.							

2. Evaluation of the whole agency
<ul style="list-style-type: none"> <li>As a core institution of basic and fundamental research in the field of materials science, which is the foundation of supporting all fields in the Japanese society, remarkable successes are achieved in research works by prioritizing research areas, internationalization phases, and strengthening development of human resources. <u>Since the mission, targets and specific issues at each research facility were clarified during reorganization of the research institution</u>, further progress in the outcome of the research agenda is expected in the future.</li> <li>The strong leadership of the president further <u>clarified the Agency's mission of bridging the basic research and industrial support system in the materials field</u>. We hope that the Agency will further strengthen collaboration with industry and promote efficient management of research and development, so that the research and development outcomes are implemented without fail, as a platform for industry-academia-government collaboration in Japan.</li> </ul>

3. Issues to be solved and /or improved for each subject
As per stated in 2.

4. Other items	
Main opinions of the council on research and development	<ul style="list-style-type: none"> <li>In the ongoing mid to long-term objective period, higher targets are set than in the previous term, and considerable achievements are created even for B-rated items.</li> <li>As the National Institute for Materials Science became the designated National Research and Development Agency, it is considered appropriate for it to contribute to the functions of both academia and industry as a corporate mission. In particular, the function of supplementing the basic research capability as required by the industry is expected to become even more important in the future. We expect the Agency to further strengthen the collaboration from this viewpoint.</li> <li>Computational science and informatics for research of materials science are becoming increasingly important, which are being considered to be the key points of competition with overseas countries. We expect the Agency to continue to focus on strengthening this point of view. Also, discussions are expected to focus on strategies of protection and utilization as intellectual property.</li> <li>In accordance with the changes in industrial structure being discussed as the 4<sup>th</sup> Industrial Revolution, the way of socially implementing the outcomes derived in the field of materials science is considered to be changing drastically. In light of the current situation, the industry, government and academia are required to develop research strategies together from the viewpoint of not only developing excellent materials but also realizing the transformation of the industrial system with materials developed. We hope that the agency will further initiate discussions within the industry.</li> <li>We expect the Agency to take the lead in the research strategies with priority on national interests and human resources development, besides the role of a core organization in materials science technology, and relevant data and know-how which represent Japan's strength.</li> </ul>
Auditor's special comments	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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</li> </ul>

- \*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 Ratings							No. of document each item	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	-	-	-	-	-	-	I-1-1-1	
1.1.2 R&D in the field of energy and environmental materials	A	-	-	-	-	-	-	I-1-1-2	
1.1.3 R&D in the field of magnetic and spintronics materials	A	-	-	-	-	-	-	I-1-1-3	
1.1.4 R&D in the field of structural materials	B	-	-	-	-	-	-	I-1-1-4	
1.1.5 R&D in the field of nanomaterials	A	-	-	-	-	-	-	I-1-1-5	
1.1.6 R&D in the field of advanced material analysis technology	A	-	-	-	-	-	-	I-1-1-6	
1.1.7 R&D in the field of information integration type materials science	B	-	-	-	-	-	-	I-1-1-7	
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	-	-	-	-	-	-	I-2-1-1	

Mid to long-term objectives (Mid to long-term plan)	FY Ratings							No. of document each item	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	-	-	-	-	-	-	II-1	
2. Basic policy for business operation	-	-	-	-	-	-	-		
(1) Enhancement and reinforcement of internal control	B	-	-	-	-	-	-	II-2-(1)	
(2) Utilization of third-party evaluation/advice concerning the agency's business operation and so on	B	-	-	-	-	-	-	II-2-(2)	
(3) Effective evaluation of business performance of staff	B	-	-	-	-	-	-	II-2-(3)	
(4) Efficiency of the overall operations	-	-	-	-	-	-	-		
① Streamlining and efficiency of operational expenses	B	-	-	-	-	-	-	II-2-(4)-①	
② Streamlining and efficiency of personnel expenses	B	-	-	-	-	-	-	II-2-(4)-②	
③ Appropriateness of contract	B	-	-	-	-	-	-	II-2-(4)-③	
④ Review of holdings	B	-	-	-	-	-	-	II-2-(4)-④	
(5) Other efforts relating to the administration of the operations	B	-	-	-	-	-	-	II-2-(5)	
III. Measures to be taken for achieving the objectives	-	-	-	-	-	-	-		

2.1.2 Transfer of information on research achievement	B	-	-	-	-	-	-	I-2-1-2	
2.2 Promotion of use of intellectual properties	B	-	-	-	-	-	-	I-2-2	
3. Activity as a core institute	-	-	-	-	-	-	-		
3.1 Shared use of facilities and equipment	A	-	-	-	-	-	-	I-3-1	
3.2 Development and quality improvement of researchers and engineers	B	-	-	-	-	-	-	I-3-2	
3.3 Establishment of academic collaboration on materials science	B	-	-	-	-	-	-	I-3-3	
3.4 Establishment of collaboration with industry in materials science	A	-	-	-	-	-	-	I-3-4	
3.5 Analysis, strategic planning and information transfer for materials science research	B	-	-	-	-	-	-	I-3-5	
3.6 Other activities as a core institution	B	-	-	-	-	-	-	I-3-6	

concerning improvement of financial contents									
1. Budget (Including personnel expenses)/ income and expenditure plan, and funding plan	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	-	-	-	-	-	-	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	-	-	-	-	-	-	IV-1	
2. Plans for personnel	B	-	-	-	-	-	-	IV-2	
3. Debt burden over the mid to long-term objective period	-	-	-	-	-	-	-	IV-3	
4. Use of a reserve fund	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).