

# **Evaluation of the Research and Professional Activity of the Institutes of the Czech Academy of Sciences (CAS) for the period 2010–2014**

## **Final Report on the Evaluation of the Institute**

**Name of the Institute: Global Change Research Centre of the CAS, v. v. i.**

**Fields, in which the Institute registered its teams:**

Physical sciences

Observer representing the Academy Council of the CAS: Tomáš Kruml

Observer representing the Institute: Zdeněk Žalud, substitute observer Karel Klem

### **Commission No. 3: Physical sciences**

Chair: Prof. John Dainton

Date(s) of the visit of the Institute: October 15 - October 23, 2015

Programme of the visit of the Institute: see attached Minutes from the visit

Evaluated research teams:

*No. 6 - Department of Nanobiotechnology*

## **A. Evaluation of the Institute as a whole**

### **1. Introduction**

The Physical Sciences panel is not qualified to make an evaluation overall of the Global Change Research Centre of the CAS. The assessment below is for one team whose work makes use of nanotechnology and of whom an evaluation based on a global Physical Science perspective is provided.

### **2. Strengths and Opportunities**

See introduction

### **3. Weaknesses and Threats**

See introduction

### **4. Recommendations**

See introduction

### **5. Detailed evaluations**

See introduction

*Declaration on the quality of the results and share in their acquisition*

*Declaration on the involvement of students in research*

*Declaration on societal relevance*

*Declaration on the position in the international and national context*

*Declaration on the vitality and sustainability*

*Declaration on the strategy and plans for the future*

## **B. Evaluation of the individual teams**

### **Evaluation of the Team No. 6: Department of Nanobiotechnology**

#### **1. Introduction**

The main direction of the research conducted by this group is development of the biocompatible magnetically responsive materials for various bio related applications. This research is multidisciplinary and appreciated at the national and international level. However, the approach looks like a “niche” based where a possibility of a significant breakthrough is not evident, and no practical implementations have been proposed by the team. The team is very small and its long term survival is not evident.

#### **2. Strengths and Opportunities**

The quality of their evaluated publications is partly internationally excellent and partly nationally recognized, what illustrates the fact that the level of the outputs of this group is not consistent. The ratio between their numbers of journal and other publications is lower than expected for a research group of their size.

However, high ability to gain projects (22 projects within years 2010-2014) by the four researchers proves significant potential and competence of the group. This small but highly specialized research team might be a valuable partner collaborating with SME in implementation of developed technologies. Unhappily, the group worked jointly with SME on only a single project during the evaluated time.

#### **3. Weaknesses and Threats**

The group has a very limited level of activities in the area of research popularization. The age structure of the group does not assure the proper level of knowledge transfer and training of high quality research personnel.

Considering the limited research area and a small number of the researchers with rather disadvantageous structure of age the future result of the team depends on either collaboration or a merger with a stronger team in order to conduct wider interdisciplinary research.

#### **4. Recommendations**

This team has to be restructured in terms of its composition, and its plan of research activities has to be modernized and more focused on possible practical implementations.

#### **5. Detailed evaluations**

##### *Declaration on the involvement of students in research*

The evaluated outputs of this team are partly internationally excellent and partly nationally recognized, which can be interpreted as a lack of consistency in team's production.

Most cited papers are outside the evaluation period - from 1999 to 2004. There is rather big difference between former number of citation and citation from the last period.

##### *Declaration on the involvement of students in research*

The team is moderately active in supervising students (currently only 1 PhD) with 3 PhDs graduated during the evaluation period. The team gives formal and informal lectures at local universities and also some at the international scene.

*Declaration on societal relevance*

The team is not very active in the activities to popularize the research they are conducting.  
The level of collaboration with SME is definitely too low.

*Declaration on the position in the international and national context*

The team has established some collaboration at the international and national level, but only with the academic partners.

*Declaration on the vitality and sustainability*

The age profile of the team is not adequate to provide an efficient knowledge transfer and to assure the development of the highly qualified research personnel.

*Declaration on the strategy and plans for the future*

The plans for the future and strategy are not too convincing. The focus on niche applications should be revised and replaced by a research that could lead to the more significant breakthroughs.

Regarding the above the more active participation in interdisciplinary and joint research seems to be necessary and even crucial to future prospects of the team.

**Date:** January 13, 2016

**Commission Chair:** Prof. John Dainton