



SLOVENSKÁ AKADEMIA VIED

PRESEDNÍCTVO

Vážený pán
doc. Ing. Milan Tyšler, CSc.
riaditeľ
Ústav merania SAV
Dúbravská cesta 9
841 04 Bratislava

Bratislava 10. február 2017
Číslo: Ú SAV – 0363/2017

Vážený pán riaditeľ,

na základe uznesenia Predsedníctva SAV č. 1212.C zo dňa 9. februára 2017 sa zaraďuje Ústav merania SAV do kategórie s charakteristikou:

**Výskum je viditeľný na európskej úrovni.
Organizácia dosiahla hodnotné príspevky v danej oblasti v rámci Európy.**

The research is visible at the European level.
The institute has made valuable contributions in the field in Europe.

S pozdravom

prof. RNDr. Pavol Šajgalík, DrSc.
predseda SAV

Poučenie o odvolaní: Podľa čl. IV ods. 6 Zásad pravidelného hodnotenia vedeckých organizácií SAV za obdobie 2012 - 2015 sa proti rozhodnutiu Predsedníctva SAV môžete odvolať do 21 kalendárnych dní od doručenia tohto rozhodnutia na Predsedníctvo SAV (sekretariát predsedu SAV).

Príloha: Hodnotiaci protokol
(META-PANEL ASSESSMENT REPORT OF SAS RESEARCH INSTITUTE)

META-PANEL ASSESSMENT REPORT OF SAS RESEARCH INSTITUTE

Period January 1, 2012 – December 31, 2015

According to § I, section 15 and 16 of Principles of periodic assessment of SAS research institutes adopted under the regulation of § 10, section 5, letter d) Act No. 133/2002 Coll. on Slovak Academy of Sciences and approved by the SAS Assembly on 22. 3. 2016, the member of Panel of evaluators/ Invited external remote expert issues the report with following evaluation and proposal for Institute rating.

Name and address of SAS Institute	Institute of Measurement Science Dúbravská cesta 9 841 04 Bratislava Slovak Republic Webpage: http://www.um.sav.sk E-mail: umersekr@savba.sk
Date of site visit/ Date of interview	November 11, 2016

Scientific quality and productivity

Comments, including strengths and weaknesses	Rating*
<p>The Institute performs basic research in measurement science and mathematical methods for processing of measured data. It focuses on non-standard measurement problems across 5 main departments:</p> <ol style="list-style-type: none"> 1. Optoelectronic Measuring Methods 2. Magnetometry 3. Theoretical Methods 4. Imaging methods 5. Biomeasurements <p>Collaboration with other Institutes (e.g. Polymer Ins., Inst. of Electrical Engineering and infrastructure projects) seem to be effective. The staffing, budgets and research priorities seem to have been rather stable over the 4-year period, with a little more emphasis on Imaging Methods and less on Theoretical Methods.</p> <p>For Dept. 1, the main effort was in X-ray micro tomography with applications to cultural heritage as well as to industrial plant; with micro CT to anatomical analysis.</p> <p>Dept. 2, developed SQUID methods for magnetic nano-particles and nanoliquids, synthesis of nanomaterials based on Vanadium, research on superconducting models of the magnetic admixtures in diamagnetic matrices and research on magnetic properties of ferroliquids.</p> <p>Dept. 3 research focussed on mathematical statistics, nonlinear dynamics systems and mathematical modelling and on scientific computing and applied informatics. This department laid emphasis on considerable collaboration both internationally and nationally.</p> <p>Dept. 4 undertook basic research in imaging biological and physical objects using NMR at low fields and in higher fields in the context of international collaboration.</p> <p>Dept. 5 seems to have been driven mainly by grants won from APVV¹ (Slovak Research and Development Agency) in the area of cardiac research and international cooperation in high-resolution ECG.</p> <p>Publications and Impact</p> <p>Table 2.1.8 and Appendices list the research publications by category. Without further analysis, it is not possible to indicate the percentage of publications in the top most cited publications or to give other quantitative commentary on the impact of the publication output. It is claimed that the publication rate over the report period increased from 0.42 to 0.70 CC publications per FTE researcher. Some researchers seem to be particularly productive, but it is difficult to summarise the listed outputs. (a superficial examination shows one is listed as author in 34, another in 11 publications). Whilst this trend is certainly positive, the overall indication is of a moderate scientific impact in internationally refereed journals. The proportion of publications resulting from public / private collaboration is low.</p>	C

Societal, cultural, or economic impact

¹ <http://www.apvv.sk/agentura.html?lang=en>

Comments, including strengths and weaknesses	Rating*
<p>Human capital trends and outputs The number of potential PhD supervisors seems rather low at 14 staff, possibly explaining the relatively small proportion of PhD scholars. The number of internal scholars having completed defence over the period was 3. Overall Table 2.5.3 would indicate a consistent downward trend in the academic teaching / supervision aspects of the Institute. The overall staffing of the Institute is outlined in section 2.8; there is a serious issue with gender balance with only 1 female at 11.a or Assoc. Professor level. There also seems to be a preponderance of older senior staff members with 13 males over 65 years old.</p> <p>National relevance and linkage Some interaction with national projects, clinical medicine and with companies / physical infrastructure (e.g. nuclear) as well as with monitoring cultural heritage. There would appear to be potential for extending this collaboration. Award achieved for national research awareness promotion.</p> <p>International aspects The acquisition of EU grants is particularly low; no submissions have been made to either FP7 nor to H2020 as proposer with only two participations as a partner organisation. Whilst mention is made of contributions to the VEGA² programme, one might expect a more structured role in defining the ERDF investments.</p> <p>In Theoretical Methods there is appropriate collaboration with key international partners such as PTB (Germany), Uni of Oxford etc.</p>	C

Future prospects (development potential)

Comments	Rating*
<p>As a relatively small Institute, this should be seen as part of a national system and national development strategy. There is a diversity of agencies and funding systems in Slovakia, with a commitment of 0.89% of GDP to GERD there are opportunities for consolidation. There seems to be significant potential for increasing the level of research collaboration across sectors of the economy, perhaps across regional borders. There will be returns to reform of the gender and demographic structure. With small numbers of doctoral candidates, there would appear to be development potential for structured collaborative doctoral programmes.</p>	B

*Rating in scale from A to D, where A is excellent, B is very good, C is good and D is weak.

OVERALL ASSESSMENT

² <https://rio.jrc.ec.europa.eu/en/organisations/scientific-grant-agency-vega>

Comments on the past performance

The Institute is trending well on publications output; there has been a shift from external teaching towards publication. Linkage with appropriate partners nationally and internationally is improving.

This is one of the few Institutes that specifically mentioned a spin-off company (- Quantum) active in optical measurement services.

They commented on legal restrictions in this type of activity.

External funding resources have developed from a very low base, now dominated by University Research Park for Biomedicine project. There is substantial scope to improve income from international projects aligned with the Mission of the Institute.

Comments and recommendations for further improvement of the institute

In addition to general comments that apply to all institutes to a varying extent, the following specific recommendations and comments are made:

The strategic planning and resource allocation was better explained at interview than could be inferred from the report submitted. With the further articulation of this plan, collaboration objectives with other national and regional resources could be better understood; for example with the Slovak Institute of Metrology.³

There is mention of the collaboration with the Scientific Board to improve indicators and to ensure the systematic development of the infrastructure and acquisition of external funding sources. It would be good to make these objectives explicit, quantifiable and on a timeline.

The International dimension should be increased in all aspects (including funding, collaborations, PhD scholars).

There is greater scope for collaboration with external parties (industry, public sector, academic) through joint doctorates or other novel mechanisms.

The promotion of the Institute would benefit from increased clarity in describing or naming the individual research fields; e.g. Biomedicine, Structural Integrity, etc.

There is substantial scope to improve research output through income from international projects aligned with the Mission of the Institute.

Proposal of overall institute rating: B

The research is visible at the European level. The institute has made valuable contributions in the field in Europe.

Overall the visiting team formed a positive impression of the potential for this Institute if the attractiveness to a new generation of young researchers (of diverse gender and backgrounds) can be improved and the international funding support for its strategy can be availed of.

January 20, 2017

On behalf of the Meta-Panel
Prof. Marja Makarow

³ <http://www.smu.sk/dokumenty-na-stiahnutie/#vseobecne>