



CEITEC

Central European Institute of Technology
BRNO | CZECH REPUBLIC



BRNO
UNIVERSITY
OF TECHNOLOGY

CEITEC 14.10.2020

MEP Q&A session



Q1: Discuss and clarify the different levels of affiliation to the Institute for staff from University of Brno, but also from other universities. What is the decision-making body which accepts a researcher or a group as part of the institute. Is there a double-affiliation situation between the institute and some Faculties within the university? If so, how is this solved? This aspect is important when it comes to counting publications, projects, awards, etc.

In 2019: 382 Headcounts / 287 FTE // of which 86 having a “full” FTE contract / 23 in tenure position.

New group leaders are subject to approval by the Chief Scientific Director, ISAB, RGL’s and internal VUT hiring proces. The director of CEITEC is the final decision maker and is the contract signatory.

The structure of the questions did not allow too much room for explaining the scientific governance of CEITEC. What is the body who makes decision for scientific and research directions, and strategies in CEITEC? What is the dependence or independence with respect to other bodies of University?

- Scientific directions are fully at discretion of the (established) Research Group Leaders.
- The science vision of each research group is subject to regular ISAB review and assessment.
- CEITEC also have an ISAB, an informal Scientific Strategy Board composed of senior scientists and the management, and Science Board, Chief Scientific Director - definition and approval of long term vision and mission.
- CEITEC dependence is defined by Act no. 111/1998 Coll., which defines the decision making independence within the university environment in Division 2, section 34. CEITEC is on a par with other university faculties.

Personnel stability of CEITEC.... What is the fluctuation? What percentage of workers has permanent positions?. How many scientists have full time position? How many of them depend directly from the Institute's funding, and how many depend indirectly on the University's funding? This is essential, and as important or more than equipment.

- CEITEC encourages mobility of academics and research people. In respect to RGL we had 7 new group leaders appointments and three group leaders left CEITEC in the past three years. Remaining scientific staff is in principle project based and moves on regular basis – subject to funding. Technical people (operators and admin), the fluctuation is minimal.
- Permanent position of workers is subject to available funding! We have just over 8% of workforce in tenure position.
- The HR policy is decided on faculty level, thus 100% employees depend on the Institute funding.

The BUT has a certain annual income from projects. What percentage of this does CEITEC?

- 2019 BUT: 1,270,524,000 Kč / CEITEC 308M Kč = 24.2 %
- 2018 BUT: 952,000,000 Kč / CEITEC 270M Kč = 28.3 %
- 2017 BUT: 857,000,000 Kč / CEITEC 208M Kč = 24.3 %

Can you explain the plans for financial future of CEITEC in terms of sustainability? How does CEITEC face the international evaluation process (next year) which will ensure (or not) financially the center? Is the financial uncertainty every 4 years jeopardizing the scientific activity and strategy of the institute?

- 1. CEITEC and Inst. of Physics of the AS CR are two nodes of the large research infrastructure for nanofabrication and nanocharacterization on the National road map of large infrastructures
- 2. We are active members of EURONanoLab consortium, incl. 40 cleanroom facilities in 14 EU countries / application to ESFRI 2021, supported by MEYS and other countries.
- International benchmarking confirmed full compatibility of CEITEC Nano with other EU facilities.
- We fix our strategies for 2023-2029.

More than 60 companies and tens of research groups in the Czech Republic are using the facilities at CEITEC-BUT . It would be good to clarify what the policy of open access of the facilities is, and what the role of the companies is in this allocation of time and resources, at least for the foreign members of the IEP.

- Transparent open access policy using online reservation system on “first come first served“ basis
- So far no problems with capacity / thus no limitations to company orders. However, science takes preference in case of a full scale service / see further.

What is the impact of companies in the use of the facilities over the whole use?

- Joint development of methodology and instrumentation (TESCAN, Nenovision, Thermo-Fisher Scientific, RIGAKU)
- Development of parts for ESA, core industrial research exposure ...
- Plus financial impact of about 470k EUR in 2019

Is there (or is CEITEC interested) in the feedback from companies? What is the strategy of CEITEC for relationships with the companies world? Does CEITEC request an assessment from the companies cooperating with them in terms of contribution of CEITEC to their turnover and success? Do they make an assessment of the external research users regarding their needs to be satisfied, i.e. to get an idea of how to possibly supplement the instrumentation of the center?

- We receive regular feedback via a) the “user committee” – resulting for instance in acquisition of new equipment; b) “annual user meeting” and a c) newly established Industrial Advisory Board.
- All users (incl. commercials) are welcomed provided they do not jeopardise our mission.
- Established a one point contact for industry / Industrial Liason Officer/Industrial Board.

Extract from our current report on the unit: "It could be useful to make an analysis of how balanced is in house and external use, what volume is made up of customers from academia, small and medium-sized companies, large companies, international users, whether companies turn to CEITEC repeatedly, what analysis techniques are mainly in demand. The specification for a research firm as a "miscellaneous analysis" is meaningless (used in Table 3.3.1. perhaps in 90% of cases...)"

- 2019: 325 users from 46 institutions across 25 nationalities. There were: 75 full-service users out of which 48 % academics and 52 % commercials; and 250 self-service users out of which 98 % academics and 2 % commercials.
- In 2019 >15k reservations and 86k booked hours. Most popular: Litography and Depositions, SEM/FIB, TEM, XPS, XRD.
- Full analysis is beyond the scope of this presentation.

In the list of all the projects by CEITEC, on top of the FET Open and ERC projects, one can underline the merit of the projects related to In Vivo imaging techniques, automotive security and power efficiency, and ceramics. Is CEITEC specialising on those topics which are successful, or will the institute opt for opening to other fields and topics ?

The topics listed above are the result of an unambiguous questionnaire, subject to different questions in order to highlight different topics. Founding concept of CEITEC was twofold, a) to provide top class instrumentation on an open access basis to a wider research community, and b) to attract and retain high profile scientists in the country. In both original missions our expectations were more than exceeded, and CEITEC is now a prime research institute in the country surpassing their mother organizations (as documented by number of ERCs, publications, international projects, citations, spin-offs and start-ups, high-tech industry involvement).

We are open to any internationally competitive scientists/topics which in broad terms fall in the category materials and nanotechnology and use the infrastructure.

Clarify the strategy for encouraging project-capturing. Is there any specific plan? Are there any plans or opportunities for participation on industry-science platforms and so on?

- Project office – from initial scanning of funding opportunities (monthly newsletter) to writing projects, implementing and finishing
- Industrial Liason Officer – capturing and defining IP creation.
- Yes, namely the project RICAIP is heavily oriented on building a new national infrastructure-platform for IoT and Industry 4.0 with a very strong involvement from industry.

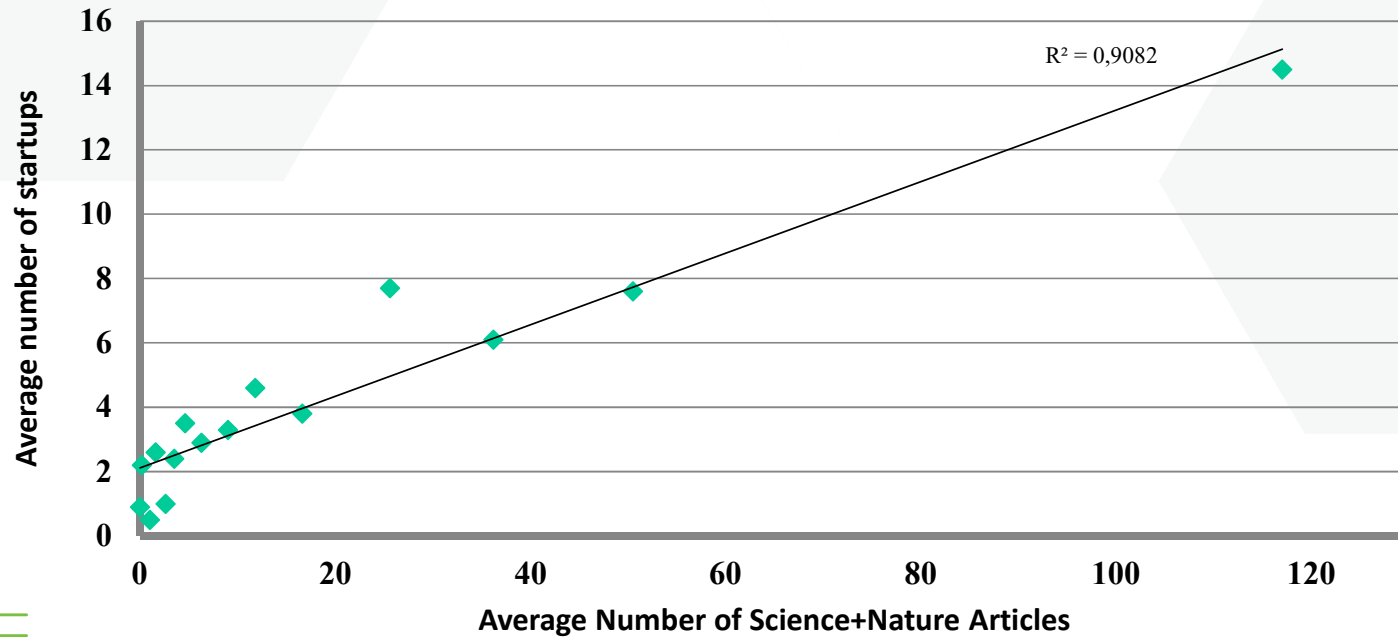
What is the role of the new industrial liaison director in project empowering?

What is the role of the new industrial liaison director in spin-off creation and in the design of the "technology Transfer" strategy of CEITEC?

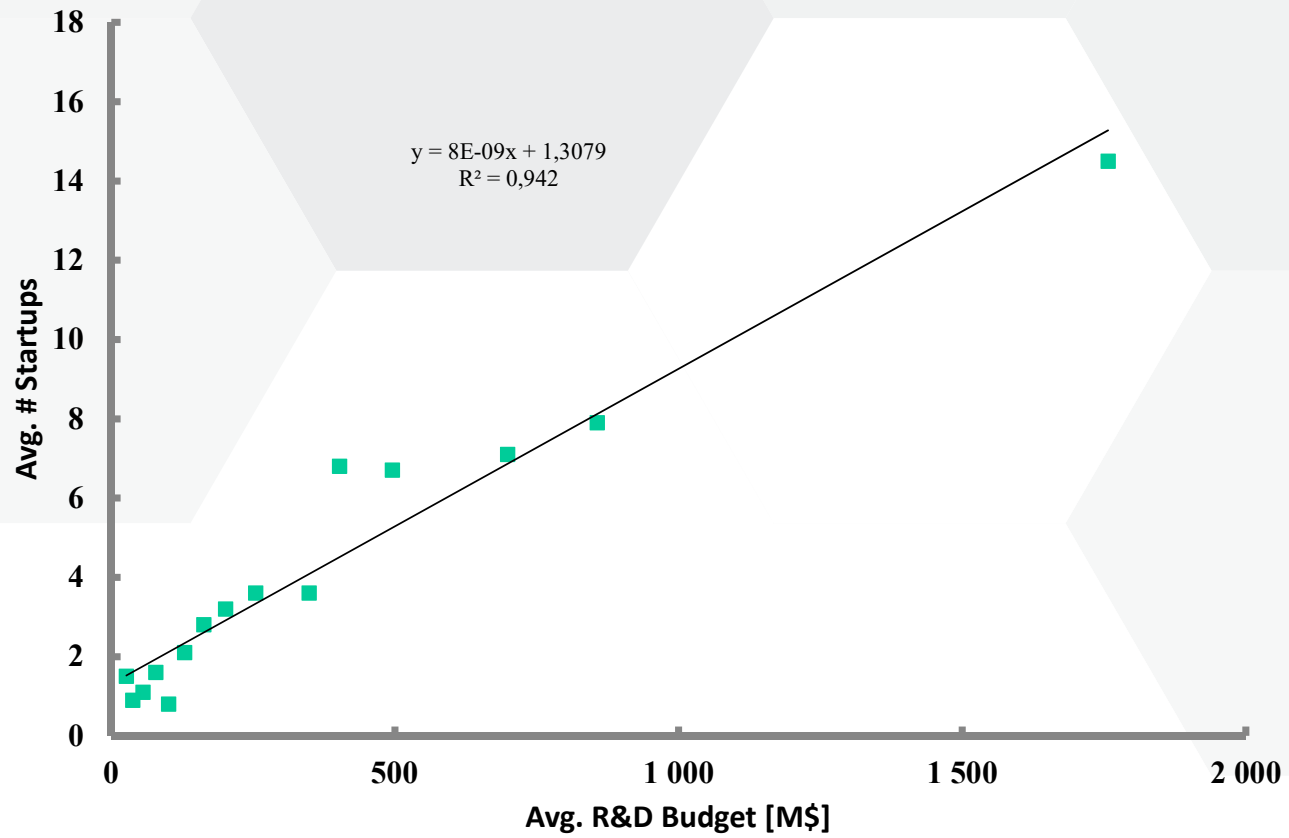
- IP capture by scouting
- One point contact to industry
- Building entrepreneurial ecosystem

The set-up of two spin-offs by CEITEC is very nice and impressive for such a young institute. What is the plan for spin-off companies creation? Can this rate of creation be sustained? What would be sufficient, and optimal in this sense for CEITEC?

Number of startups as a function of "Innovation factor" 154 US universities 2012



Number of US Startups Depending on R&D Budget (2012)



How many joint publications does CEITEC have with international partners within one year? What is the international dimension of the outputs? Driving research or following collaborations?

- In monitored period 2014-2018 - 597 collaborating organizations from 55 countries
- International collaboration on average – 39.39%
- International dimension: citations, students, projects



Some tools, fields and topics have been identified as successful ones in the report by CEITEC in different points: generic materials analysis, nanomaterials spectroscopies, microscopies of various types, vision, robotics, compatible biomaterials, etc. Can CEITEC establish a strategic map of the current topic-positioning?

- The identified topics and fields are subjected to the questionnaire focus. Provided the questions were related to scientific excellence, different subjects would likely arise. CEITEC has a strategic group of senior scientists and ISAB to define topic/positioning of each RGL on four years' basis (very much part of the ISAB RGL evaluation). The cornerstone of the CEITEC topic positioning are RGL's and, in principle, available funding.

What would be the three to four specific different research topics in which CEITEC would like to be a leader internationally in the short term and in the long term?

- CEITEC wants to run a world class infrastructure supporting world class scientists and students producing world class research and innovation.
- It is not possible to define topics given the current state of available funding.

What is the success rate of doctoral students (general problem in CR, many students do not finish studies..).

Academic Year	Students	Successfully finished	Finished without graduation
2013/2014	15	0	0
2014/2015	36	0	1
2015/2016	53	0	2
2016/2017	65	0	2
2017/2018	79	3	5
2018/2019	115	7	6
2019/2020	133	11	6
2020/2021	123	4	1

How is the actual cooperation with faculties implemented in the education of students?

- Lectures from other faculties for PhD school, instrumentation resources from other faculties, consultation from the BUT faculty members.
- Teaching opportunities for students for MSc and BA graduate.
- Joint projects
- Less than 60 % of students graduated from BUT

The aspect of training of PhD students at CEITEC is really excellent. How is the evolution of these young well trained researchers monitored and followed up by CEITEC? Is there any official database or formal follow-up at all? If not, is this something that CEITEC might consider to do? This is critical to measure social impact.

2017/2018- first PhDs	Mrs.	Y-soft, Thermo Fischer
	Mr.	OHB Czechspace s.r.o., after IPM
	Mr.	Mautilus s.r.o.- IT
2018/2019	Mr.	CEITEC BUT- postdoc
	Mr.	CEITEC BUT- junior researcher
	Mr.	CEITEC BUT – resercher
	Mr.	CEITEC BUT + Contipro
	Mr.	CEITEC BUT + Prusa Polymers
	Mr.	CEITEC BUT+FME
	Mr.	CEITEC BUT+?
2019/2020	Mr.	CEITEC BUT
	Mr.	?
	Mr.	CEITEC BUT
	Miss	CEITEC BUT
	Mr.	CEITEC BUT- researcher
	Mr.	?
	Mr.	CEITEC BUT
	Mr.	Aalto University
	Miss	Rigaku Innovative Technologies Europe
	Mr.	Huazhong University of Science and Technology-postdoc
	Mrs.	Parential leave
2020/2021	Mr.	Tescan
	Mr.	CEITEC BUT
	Mrs.	Abbott, UK
	Mrs.	CEITEC BUT

Name of the presentation

On top of the exchange research actions and visits made from or to CEITEC in order to locate CEITEC in the **scientific international panorama**, is there any other specific action that could be envisioned to this regard?

- We regularly organize international conferences, workshops and schools – seven in 2019 (e.g. Czech-German Nanotechnology Conference, GE workshop for non-destructive testing, 9th International Conference on Materials Structure and Micromechanics of Fracture, European School on Magnetism, Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, etc...).
- Students are requested to spend at least 3 continuous months abroad – CEITEC ambassadors.
- Our involvement in framework programmes (H2020/H EUROPE) – twinning and teaming, FET OPEN...

Is there a person for **social outreach** activities specifically designated for that purpose?

- Mrs. Marketa Soldatova is responsible for a) welcome office, b) social outreach activities (event officer).



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