TECHNICKÁ UNIVERZITA V LIBERCI
Fakulta strojní

Podpora personálního a odborného rozvoje studentů doktorských studijních programů

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RNDr. I. Lukášová, Ing. Tomáš Kysilka

Cíl projektu

Cílem projektu byla realizace aktivit, které vedly k dalšímu odbornému a osobnostnímu růstu studentů doktorského studia. Cílem bylo zvýšení odborné úrovně doktorandů, zvýšení kvality jejich publikačních výstupů a osobnostní rozvoj

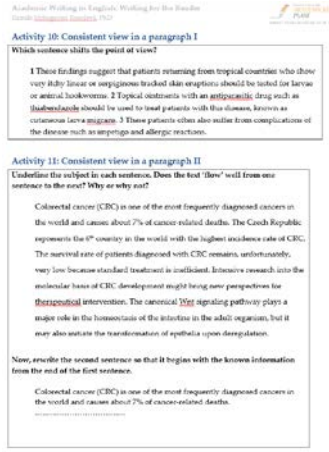
V rámci projektu byly realizovány kurzy a semináře zaměřené především na:

- Ochranu duševního vlastnictví
- Akademické psaní
- Zdokonalení anglického jazyka. studentů.

Realizované semináře

- Scientific writing for doctoral students - Part I Abstract
- Scientific writing for doctoral students - Part II Introduction to a research article
- Scientific writing for doctoral students - Part III Conclusions/ Discussion sections

Lektorka Mgr. Kamila Etchegoyen Rosolová, Ph.D. (Centrum akademického psaní, AV ČR, v.v.i.)


Activity 10: Consistent view in a paragraph I

Which sentence shifts the point of view?

1 These findings suggest that patients returning from tropical countries who show very itchy linear or serpiginous tracked skin eruptions should be tested for larvae or animal hookworms. 2 Topical ointments with an antiparasitic drug such as thiabendazole should be used to treat patients with this disease, known as cutaneous larva migrans. 3 These patients often also suffer from complications of the disease such as impetigo and allergic reactions.

Activity 11: Consistent view in a paragraph II

Underline the subject in each sentence. Does the text 'flow' well from one sentence to the next? Why or why not?

Colorectal cancer (CRC) is one of the most frequently diagnosed cancers in the world and causes about 7% of cancer-related deaths. The Czech Republic represents the 6th country in the world with the highest incidence rate of CRC. The survival rate of patients diagnosed with CRC remains, unfortunately, very low because standard treatment is inefficient. Intensive research into the molecular bases of CRC development might bring new perspectives for therapeutical intervention. The canonical Wnt signaling pathway plays a major role in the homeostasis of the intestine in the adult organism, but it may also initiate the transformation of epithelia upon deregulation.

Now, rewrite the second sentence so that it begins with the known information from the end of the first sentence.

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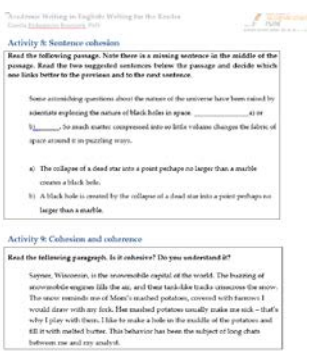

Activity 8: Sentence cohesion

Read the following passage. Note there is a missing sentence in the middle of the passage. Read the two suggested sentences below the passage and decide which one links better to the previous and to the next sentence.

Some astonishing questions about the nature of the universe have been raised by scientists exploring the nature of black holes in space. _____ a) or b) _____. So much matter compressed into so little volume changes the fabric of space around it in puzzling ways.

a) The collapse of a dead star into a point perhaps no larger than a marble creates a black hole.

b) A black hole is created by the collapse of a dead star into a point perhaps no larger than a marble.

Activity 9: Cohesion and coherence

Read the following paragraph. Is it cohesive? Do you understand it?

Sayner, Wisconsin, is the snowmobile capital of the world. The buzzing of snowmobile engines fills the air, and their tank-like tracks crisscross the snow. The snow reminds me of Mom's mashed potatoes, covered with burrows I would draw with my fork. Her mashed potatoes usually make me sick – that's why I play with them. I like to make a hole in the middle of the potatoes and fill it with melted butter. This behavior has been the subject of long chats between me and my analyst.


Activity Sheet: Discussions/conclusions and elements of style

Activity 1: Discussion do's and don'ts

Look at the advice below for writing Discussion sections. Decide whether the pieces of advice should go under 'Do' or 'Don't'.

State whether you confirmed your hypothesis	Claim significance for your work	Mention previous research
Apologize for your study's limitations	Include unexpected findings	Write mainly in the 3rd person and use the passive form frequently
Make sure you cover all the results of your study	Use the same sentences as you used in the Introduction	Present new data, which wasn't mentioned in the Results section

Activity 2: Match and order a discussion section

Order the jumbled discussion by matching its parts with the rhetorical moves in a given sequence (separate sheet).

Activity 3: Analyze end sections in an article from your field

What do end sections look like in texts published in your discipline? Examine the article you brought in class and answer the following questions:


Activity sheet

Activity 1 & 2: Feedback on Abstracts

1 (Aras)

Heat exchangers remain the most relied device for energy transfer between two media in critical systems. This paper is focused on the theoretical evaluation of pressure drop and effectiveness as a function of mass flow rate for counter flow compact plate heat exchanger utilized in ejector cooling system. The selected working fluids used in the refrigeration cycle were HC-600a, HFCs (134a, 152a, 245ca) and HFOs (1234ze(E), 1234yf, 1233zd(E)). Water was used as the cooling and heating media. During the analysis, three different correlations were used based on corrugation geometry, number of plates and flow regime. The values obtained were then compared with analysis from ABC software. Local analysis approach for two phase flow was also considered by dividing the heat exchanger into three segments of control volumes. The results demonstrated that HFO-1233yf and HFO-1234ze have lower than 0.3bar total pressure drop when mass flow rate increased to 0.01 kg/s at the evaporator and 0.015 kg/s at the condenser. In contrast, HFC-245ca and HFO-1233ze(E) recorded the highest values of 1.528kr at similar mass flow rates, which however is not recommended. The refrigerants comparison revealed that the effectiveness decreased exponentially with increasing mass flow rate. HC-600a and HFC-152a practically obtained the lowest effectiveness with 8% to 15% among other refrigerants.

2 (Jan)

This paper aims at the experimental and numerical analysis of the flow within a supersonic air ejector with a movable motive nozzle. The ejector under investigation in this study has already been analysed both numerically and experimentally in the previous work by Synek and Dvorak (2017); however, the current ejector geometry has been slightly modified. Moreover, this paper investigates two motive nozzles with a different value of the throat diameter. The nozzles are designed for the same value of exit Mach number. By changing the position of the nozzle exit plane (NXP) it is possible to influence the choking of the secondary stream, and hence, to achieve a different working regime. The performance lines of a particular ejector geometry with fixed boundary conditions are shown. Furthermore, static pressure distributions on the ejector wall are presented. Calibrated orifice plates were used for the measurement of mass flow rate during the experiment. The experimental data are compared to the numerical data, and further recommendations are introduced.


The paper presents an experimental study on the influence of the variable geometry ejector to the performance of a solar ejector refrigeration system at real-life working conditions. The environmental conditions such as solar radiation, ambient temperature vary significantly from time to time, which influence directly on the system performance. Accordingly, different configurations should be applied to obtain the optimum performance. In this work, we study impacts of three most important factors: the nozzle exit position (NXP), spindle position (SP) and the back pressure of the ejector. Our results showed that the system performance was a complex function of the primary pressure, NXP, SP, and back pressure. In which the spindle position and the primary pressure seemed to be dominant over the two others. The study also confirmed the necessity of using variable-speed (frequency inverter) pump in the ejector cycle.

Activity 3: Descriptive vs. argumentative texts and problem statements from your abstracts

A) Which sentence is descriptive, which one is argumentative, and what makes the difference?

a)	b)
The aim of this paper is to evaluate a method for detection and measurement of elliptical particles in atomic force microscopy (AFM) images.	We aimed to develop an accurate method for automatic determination of the size of elliptical nanoparticles from atomic force microscopy (AFM) images that would yield results consistent with results of manual measurements by experts.

B) Which of the following problem/purpose statements could be stronger and how would you modify them?

This paper is focused on the theoretical evaluation of pressure drop and effectiveness as a function of mass flow rate for counter flow compact plate heat exchanger utilized in ejector cooling system.

This paper aims at the experimental and numerical analysis of the flow within a supersonic air ejector with a movable motive nozzle.


Activity 7: Outline the key ideas in your own introduction

Common ground (What is known? "They say..."):

Unknown/Problem (What needs to be resolved and why? "I say..."):

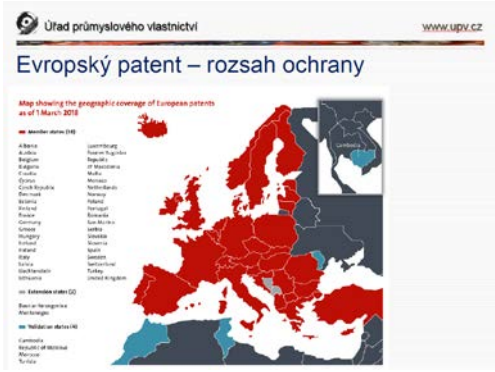
Research question/hypotheses (What do you need to know to resolve the problem? What's your answer to the problem? "I say..."):

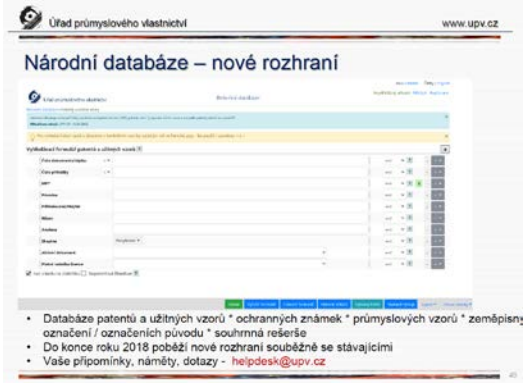
So what? What does your study add to the knowledge in the field?

Realizované semináře

- Průmyslová práva a rešerše v databázích

  Lektorka Ing. Eva Křováková (Úřad průmyslového vlastnictví)





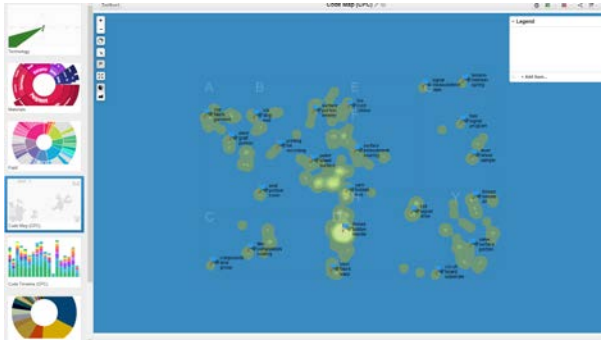
Realizované semináře

- Pokročilé vyhledávání a analýza patentů

  Lektor doc. ing. Petr Lepšík, Ph.D. (TUL)



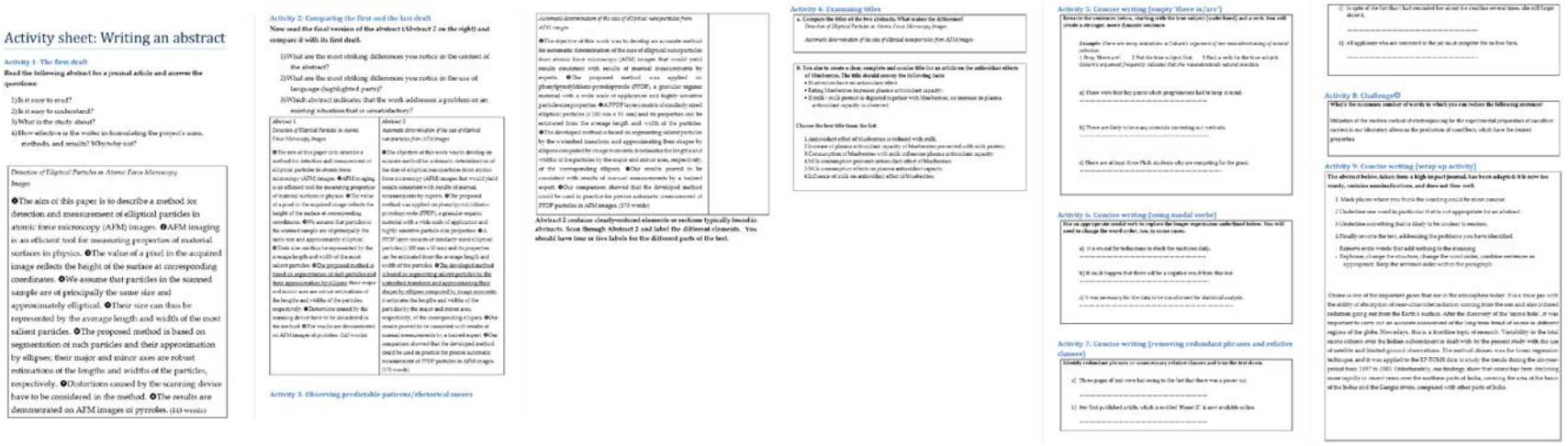




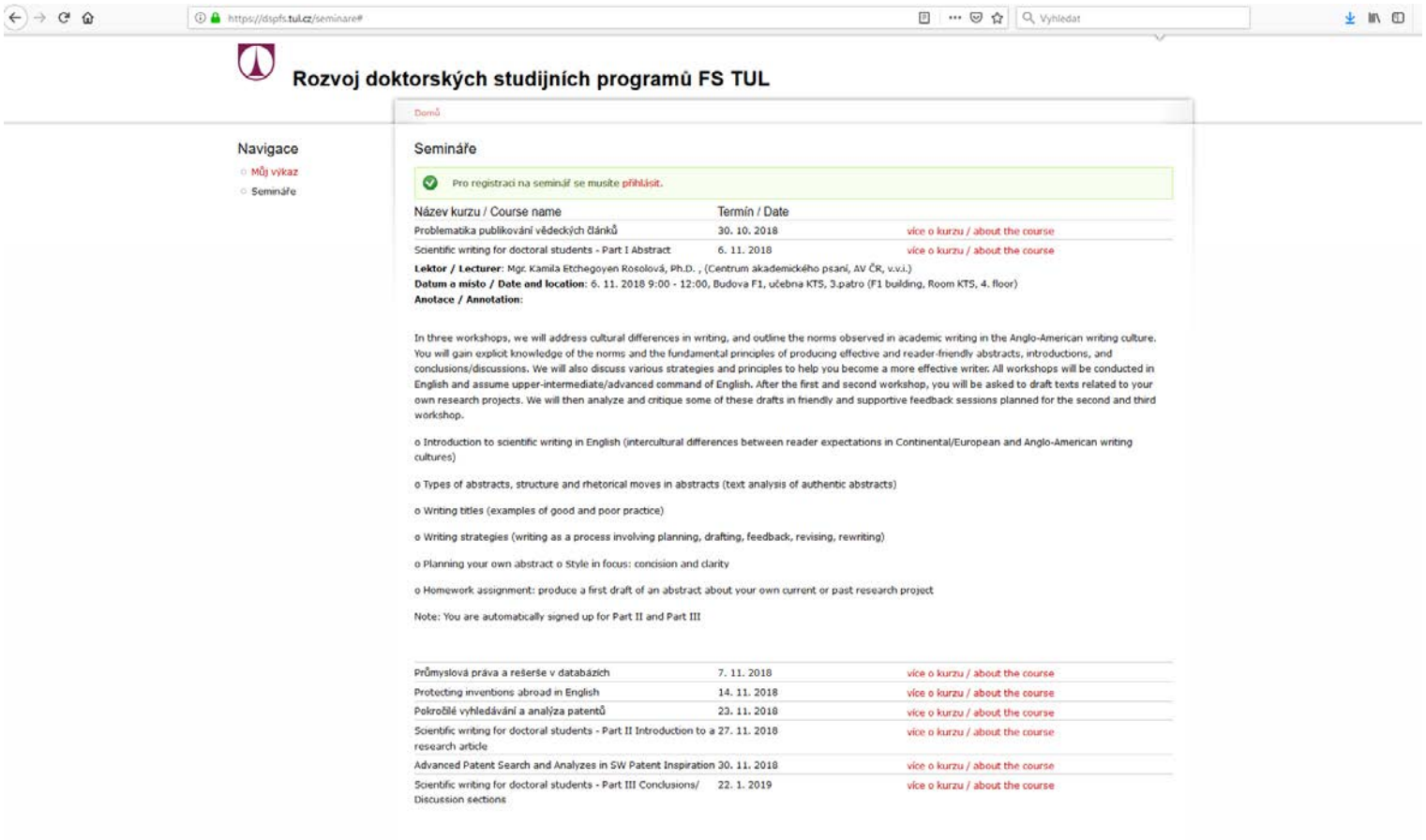
Realizované semináře

Úvod do technické angličtiny pro doktorandy

Lektorka Mgr. Dagmar Grzinčič (TUL)



Portál pro přihlašování studentů na semináře



Indikátor(y)	Počáteční stav	Předpokládaný konečný stav	Konečný stav
Počet seminářů/kurzů	0	4	4

Příspěvek	Celkem	V tom běžné finanční prostředky (NIV)	V tom kapitálové finanční prostředky (INV)
Požadavek	75 tis. Kč	75 tis. Kč	0
Čerpáno	52,985 tis. Kč	52,985 tis. Kč	0

Děkuji za pozornost