UNIVERSITY OF PARDUBICE

Faculty of Chemical Technology, Institute of Energetic Materials

PROGRAM

of the 28th seminar

NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS

NTREM 2026

Pardubice, Czech Republic, April 22nd – 24th, 2026

http://www.ntrem.com

intended as a meeting of students, postgraduate students, university teachers and young research and development workers, with interest in energetic materials

28th International Seminar
"New Trends in Research of Energetic Materials"
www.ntrem.com

is supported by:

Austin Powder, Vsetin, Czech Republic

Astotec Pyrotechnic Solutions, Austria,

Biazzi SA, Switzerland

Explosia, Pardubice, Czech Republic

Faculty of Chemical Technology, University of Pardubice, Czech Republic

MSM GROUP, Dubnica nad Vahom, Slovakia

Nicolet CZ, Praha, Czech Republic

OZM Research, Hrochův Týnec, Czech Republic

Sellier & Bellot, Vlasim, Czech Republic

SSE Explo, Tuchorice, Czech Republic

STV Group, Praha, Czech Republic

Synthesia Nitrocellulose, a.s., Czech Republic

NTREM is an international meeting of students and early career researchers who are involved in the fundamental understanding, development, technology, industry or application of energetic materials. The seminar enables the presentation of research and allows feedback and interaction with senior,well established experts in the field. In addition, participants will meet and form networks enabling them to communicate amongst each other. It is expected that the seminar will help career progression. The Seminar is intended to provide a pleasant and welcoming atmosphere where exchange of professional experiences goes along with building of strong personal relations among young specialists working in the field of EM.

Papers should not only describe research work itself, but should also demonstrate awareness of the context and background for the research.

The seminar is organized by staff members of the Institute of Energetic Materials at the University of Pardubice and, in keeping with the tradition of previous meetings, was originally planned to take place in Lecture Hall A1. However, due to circumstances beyond our control, Lecture Hall B1 will be used on Wednesday, while Lecture Hall A1 will be used on the remaining days.

The official language of the seminar is English, and all contributions shall be presented and written exclusively in the English language.

Registration fee: 200 € paid on spot.

Registration: registration of participants will take place at the University Hall:

April 21st	16:00 - 18:00	with welcome snack at the University Hall A1
April 22nd	07:30 - 09:00	Faculty of Transport Engineering (building DC)

Proceedings of the presented contributions will be prepared by the organizers of the seminar by the date of its opening; price of the proceedings will be 3500 CZK (i. e. ~180 $, 140 €) printed version and 500 CZK (i. e. ~25 $, 20 €) electronic version (USB) – the prices are valid at the time of the seminar. The USB with Proceedings will be provided to the main authors and participants of the seminar free of charge.

Please, visit the web site www.ntrem.com for updates

Chairman of the Seminar:

Assoc. Prof. Jiri Pachman	IEM, FCT *University of Pardubice, CR*

Chairman of the Scientific Committee:

Prof. Adam Cumming	*University of Edinburgh, UK*

Members of the Scientific Committee:

Assoc. Prof. Taner Atalar	*Tubitak Sage, Turkey*
Dr. Manfred A. Bohn	*Fraunhofer ICT, Pfinztal, Germany*
Dr. Chris Braithwaite	*University of Cambridge, UK*
Prof. Martin Braithwaite	*University of Cambridge, UK*
Prof. Jose A. Campos	*University of Coimbra, Portugal*
Dr. David Chavez	*Los Alamos National Laboratory, NM,USA*
Dr. Ruth Doherty	*Energetics Technology Center, Indian Head, Maryland, USA*
Dr. Stefan Ek	*FOI, Stockholm, Sweden*
Prof. Michael Gozin	*University of Tel Aviv, Israel*
Dr. Antoine van der Heijden	*TNO, Rijswijk, Netherlands*
Prof. Thomas Klapötke	*Ludwig-Maximilians-Universität Műnchen, Germany*
Dr. Jasmin T. Lechner	*Fraunhofer ICT, Pfinztal, Germany*
Prof. Michel Lefebvre	*Royal Military Academy, Brussels, Belgium*
Prof. Jimmie Oxley	*University of Rhode Island, Kingston, USA*
Dr. Davin Piercey	*Purdue University, West Lafayette, USA*
Dr. William Proud	*Imperial College London, United Kingdom*
Prof. Karl Rink	*University of Idaho, Moscow, USA*
Prof. Traian Rotariu	*Military Technical Academy, Bucharest, Romania*
Assoc. Prof. Jörg Stierstorfer	*Ludwig Maximilians Universität, München, Germany*
Prof. Muhamed Sućeska	*University of Zagreb, Zagreb, Croatia*
Prof. Raphaël Terreux	*Université Claude Bernard, Lyon, France*
Prof. Waldemar A. Trzciński	*Military University Technology, Warsaw, Poland*
Prof. Abbaraju Venkataraman	*Gulbarga University, Kalaburagi, India*

Organizing Committee

Chairman of the Committee:

Dr. Marcela Jungova	*IEM, FCT, University of Pardubice, CR*

Members of the Committee:

Dr. Jakub Selesovsky	*IEM, FCT, University of Pardubice, CR*
Dr. Iva Ulbrichova	*Dean Office, FCT, University of Pardubice, CR*

Organizing committee of NTREM:

Institute of Energetic Materials
Faculty of Chemical Technology
University of Pardubice
532 10 Pardubice
CZ, European Union

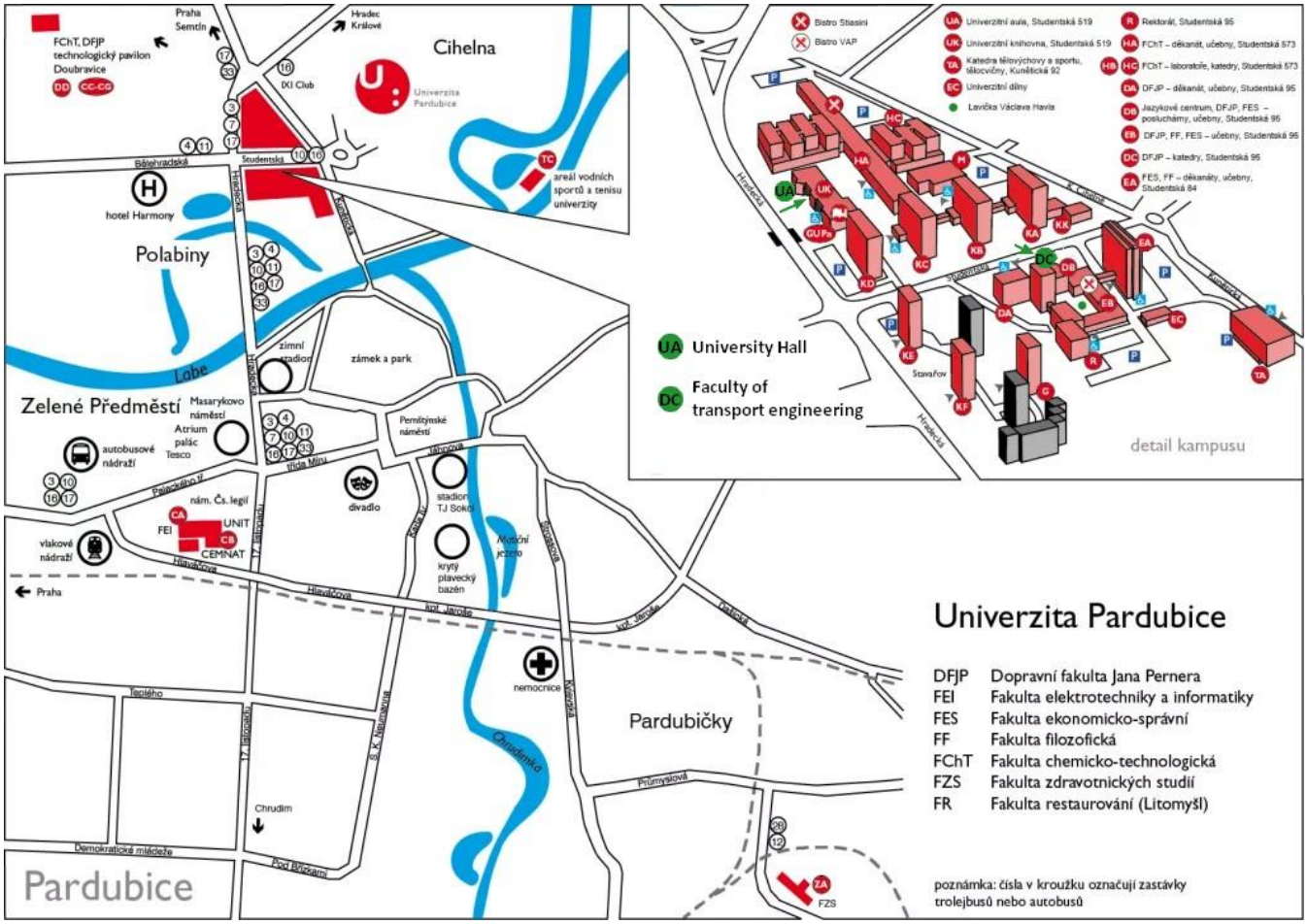
Phone: (+420) 46 603 8023
E-mail: seminar@ntrem.com

Affiliated activities:

The first meeting of the scientific committee will be held on Tuesday, April 21st, 2026, at 17:30 in the "Dašické sklepy". The bus will depart from the University Hall at 17:00. The second meeting of the committee will be held on Thursday, April 23rd, 2026, at 16:00 at the University Hall.

A friendly get-together for NTREM participants will take place on Thursday, April 23rd, 2026 at 18:30 – 22:00, in the **OC PALÁC PARDUBICE**, Pardubice (see the last page for map).

The conference opening and the first day of lectures will be held at the Faculty of Transport Engineering (Jan Perner Transport Faculty – **DC Building,** 350m from A1), as shown in the image and map. The following days will continue at the University Hall A1, as usual.



LECTURE PROGRAM OF THE 28th NTREM – WEDNESDAY APRIL 22nd, 2026

07:30 - 08:30 REGISTRATION

8:30 MEETING OF SPEAKERS WITH CHAIRMAN

8:45 SEMINAR OPENING BY SCHOOL REPRESENTATIVE – HALL B1 (BUILDING DC) & ORGANIZATION REMARKS

1. *Session*

Chairman: Dr. Jörg Stierstorfer
(Ludwig Maximilian University of Munich, Germany)

09:20	***Navid Rahman*** Synthesis and characterization of salts based on 1,2 bis(5-(trifluoromethyl)-4H-1,2,4-triazol-3-yl) diazene	*p. 240*
09:40	***Shouei Yiu*** Investigating the effect of nitration degree on nitroresorcinol-based energetic coordination compounds	*p. 258*
10:00	***Qing Ma*** Synthesis and characterization of pyrazolo[3,4 b]pyridine fused insensitive high-energy materials	*p. 158*

10:20 - 10:40 COFFEE BREAK

10:40	***Lukas Eberhardt*** Synthesis and physicochemical characterization of energetic salts derived from 5-methyl-1-nitraminotetrazole	*p. 78*
11:00	***Amr Helmy*** Replacement of RDX by TKX-50 in a putty-plastic bonded explosive based on polydimethylsiloxane (PDMS)	*p. 111*
11:20	***Arnaud Osi*** Oxidant filled nanoporous carbon as lead-free primary explosive	*p. 220*
11:40	***Han Gao*** Study of LLM-105 porous spherulites: preparation, characterization and crystallization mechanism	*p. 91*

12:00 – 14:00 LUNCH BREAK

2. *Session*

Chairman: Dr. Ruth Doherty
(*Energetics Technology Center, Indian Head, Maryland, USA)*

	MEETING OF SPEAKERS WITH CHAIRMAN	
14:00	***Harvey J. Newman*** On the use of a closed vessel to determine the effect of novel ballistic modifiers on the burn rate	*p. 182*
14:20	***Davney Ondzié-Pandzou*** Burning velocity of pyrotechnic compositions at various compaction pressures	*p. 214*
14:40	***Kento Shiota*** Influence of water contamination on the combustion behavior of ammonium dinitramide-based formulation containing monomethylamine and urea	*p. 245*
15:00 – 15:20	**COFFEE BREAK**	
15:20	***Adam Brandt*** A comparison of different methods in the analysis of the nitrogen content of nitrocellulose	*p. 209*
15:40	***Inês Cabete*** Ageing effects on the structure and chemistry of gun propellants	*p. 42*
16:00	***Suzanne Romeijn*** Feedstock scarcity, alternative cellulose sources for gun propellants	*p. 84*
16:45 – 18:30	**GUIDED TOUR THROUGH PARDUBICE IN THE FOOTSTEPS OF "SILVER A" (MAX 40 PARTICIPANTS)**	

3. *Session*

Chairman: Prof. Karl Rink

(University of Idaho, Moscow, USA)

	MEETING OF SPEAKERS WITH CHAIRMAN	
08:30	***Matthieu Daniel*** Database screening for the identification of potential thermostable and powerful explosives	*p. 56*
08:50	***Qin Liu*** Investigation of energy release characteristics of energetic materials	*p. 131*
09:10	***Wei Cao*** Disc acceleration experiments and simulation of HMX-based aluminized explosives with PTFE addition	*p. 49*
09:30	***Peter Schultz*** Cycled DSC-analysis of HNS in energetic melts	*p. 251*
09:50	***Xing-long Li*** Research on propagation characteristics of explosion shock waves from typical aluminized explosives under negative pressure environment	*p. 141*
10:10 – 10:30	**COFFEE BREAK**	
10:30	***Geir Petter Novik*** An emerging safety hazard: triacetone triperoxide formation in aged 2-propanol	*p. 198*
10:50	***Zi-jian Lyu*** Exploration of differences in anti-static ability of various explosives	*p. 149*
11:10	***Marcin Hara*** Investigation of the reaction of selected pyrotechnic and explosive mixtures to bullet impact	*p. 103*
11:30	**POSTER SESSION INTRODUCTION** 2 min oral poster introduction	
12:50	**GROUP PHOTOGRAPHY BEFORE LUNCH**	
13:00 –14:00	**LUNCH BREAK**	

4. *Poster Session*

Chairman: Assoc. Prof. Jiri Pachman
(University of Pardubice, CR)

5. *Session*

Chairman: Prof. Adam Cumming
(University of Edinburgh, UK)

	MEETING OF SPEAKERS WITH CHAIRMAN	
09:00	***Sylvie NGUYEN*** A new synthetic index enabling AI-guided discovery of novel molecules	*p. 188*
09:20	***Martin Braithwaite*** Prediction of ideal detonation characteristics in high explosives – challenges and opportunities	*p. 34*
09:40	***Shiro Kubota*** Evaluation of mixed gas and solid components in detonation products	*p. 124*
10:00	***Manfred A. Bohn*** Simulation of heat flow curves from microcalorimetry What has been achieved already	*p. 6*
10:20 – 10:40	**COFFEE BREAK**	
10:40	***Hiroki Matsunaga*** Thermal decomposition and combustion of ammonium dinitramide-based high energetic ionic liquids with improved ignitability	*p. 175*
11:00	***Mary Dean*** Harmonization of fertilizer safety testing across manufacturing, storage, and transport	*p. 60*
11:20	***Katsumi Katoh*** Friction sensitivity testing variations by porcelain consumable type and plate–peg contact state	*p. 118*
11:40	***Guy Marlair*** Unraveling the actual safety benefits of adding inorganic fillers to ammonium nitrate	*p. 227*
12:00	**PRIZE AWARDS & CLOSING THE SEMINAR**	

FIRST DAY OF LECTURES

FACULTY OF TRANSPORT ENGINEERING

Wednesday

https://mapy.com/s/bagufepuhe

50.0482397N, 15.7693906E

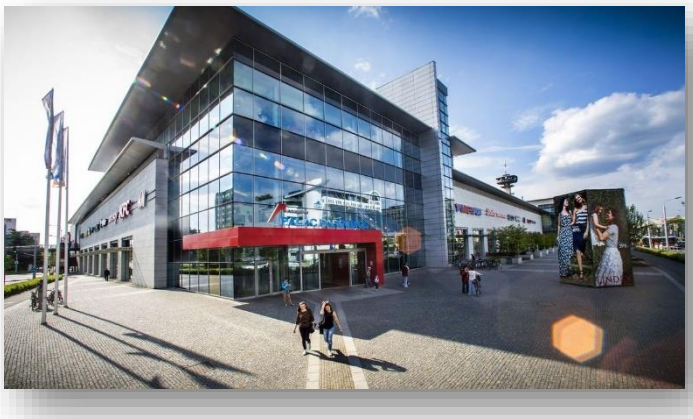
MAIN VENUE
UNIVERSITY HALL

Tuesday, Thursday, Friday

(Aula Arnošta z Pardubic)
Studentská 519, Pardubice

https://mapy.cz/s/larunemona

50.0496653N, 15.7665203E



BANQUET
OC PALÁC PARDUBICE

Thursday evening

Masarykovo nám. 2799, Pardubice

https://mapy.com/s/katupejaze

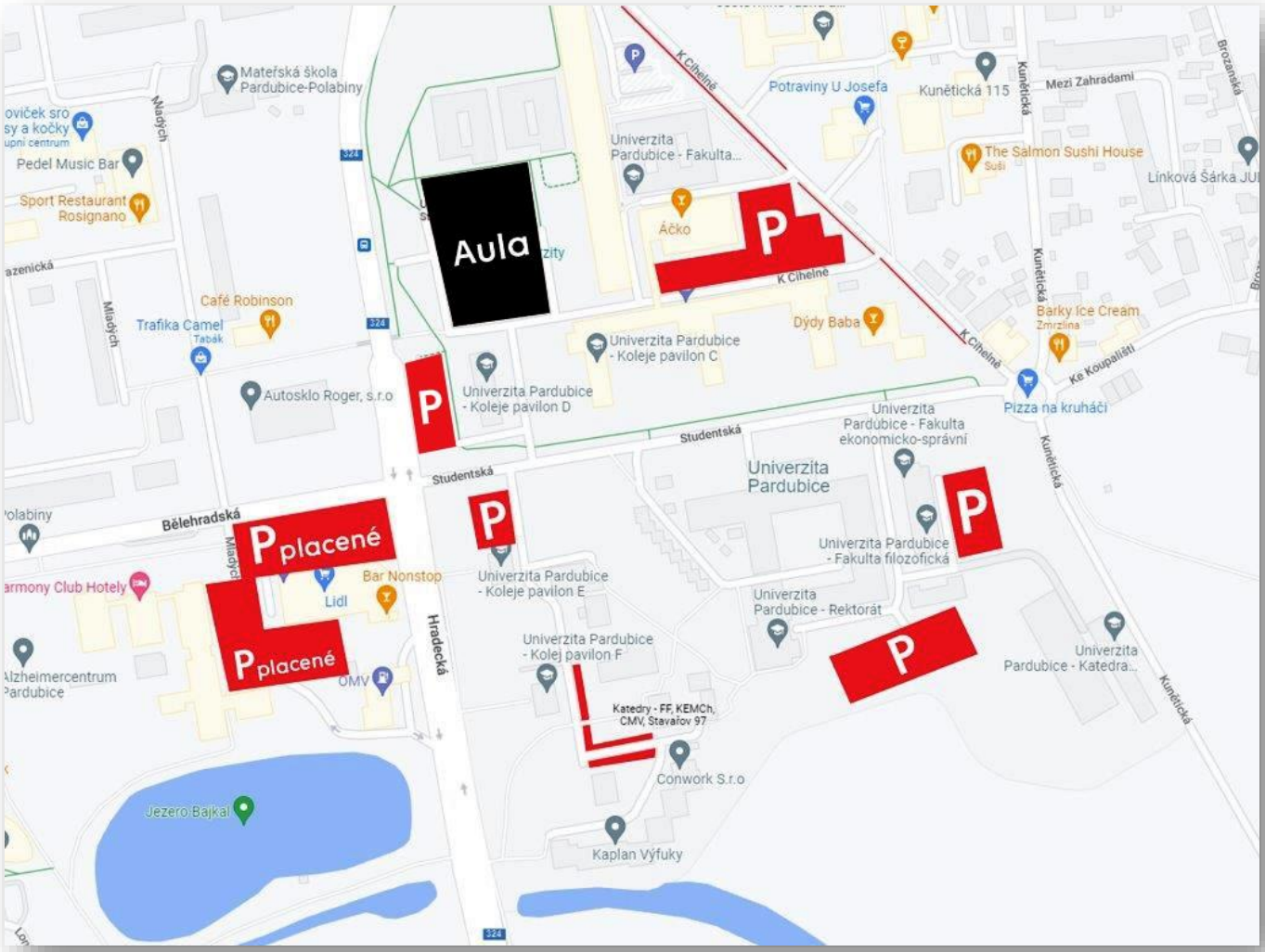
50.0365475N, 15.7688042E

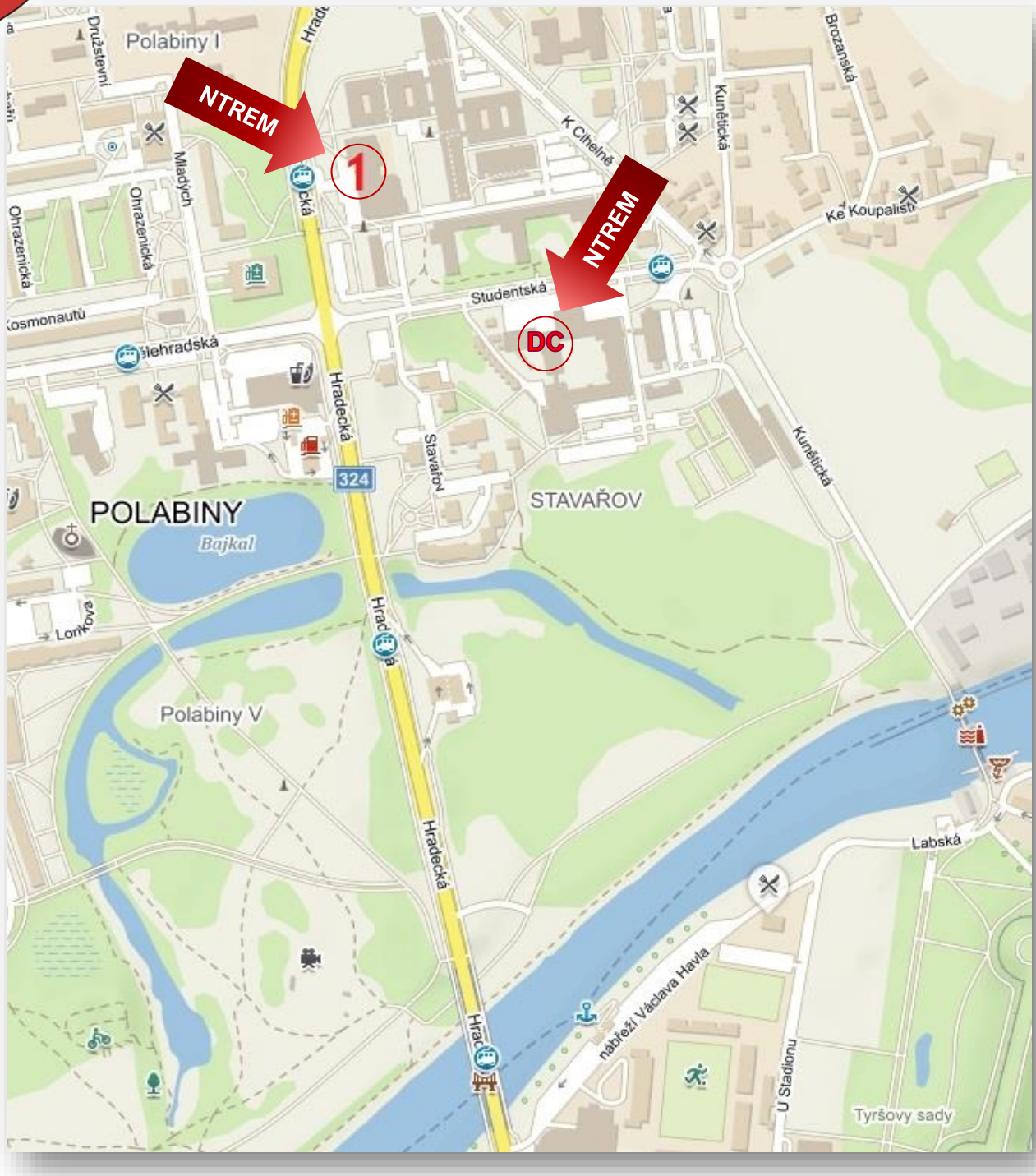
Parking is available in the underground parking garage of the Palác Pardubice shopping mall, with the entrance from Závodu míru Street (50.0380622N, 15.7682981E)

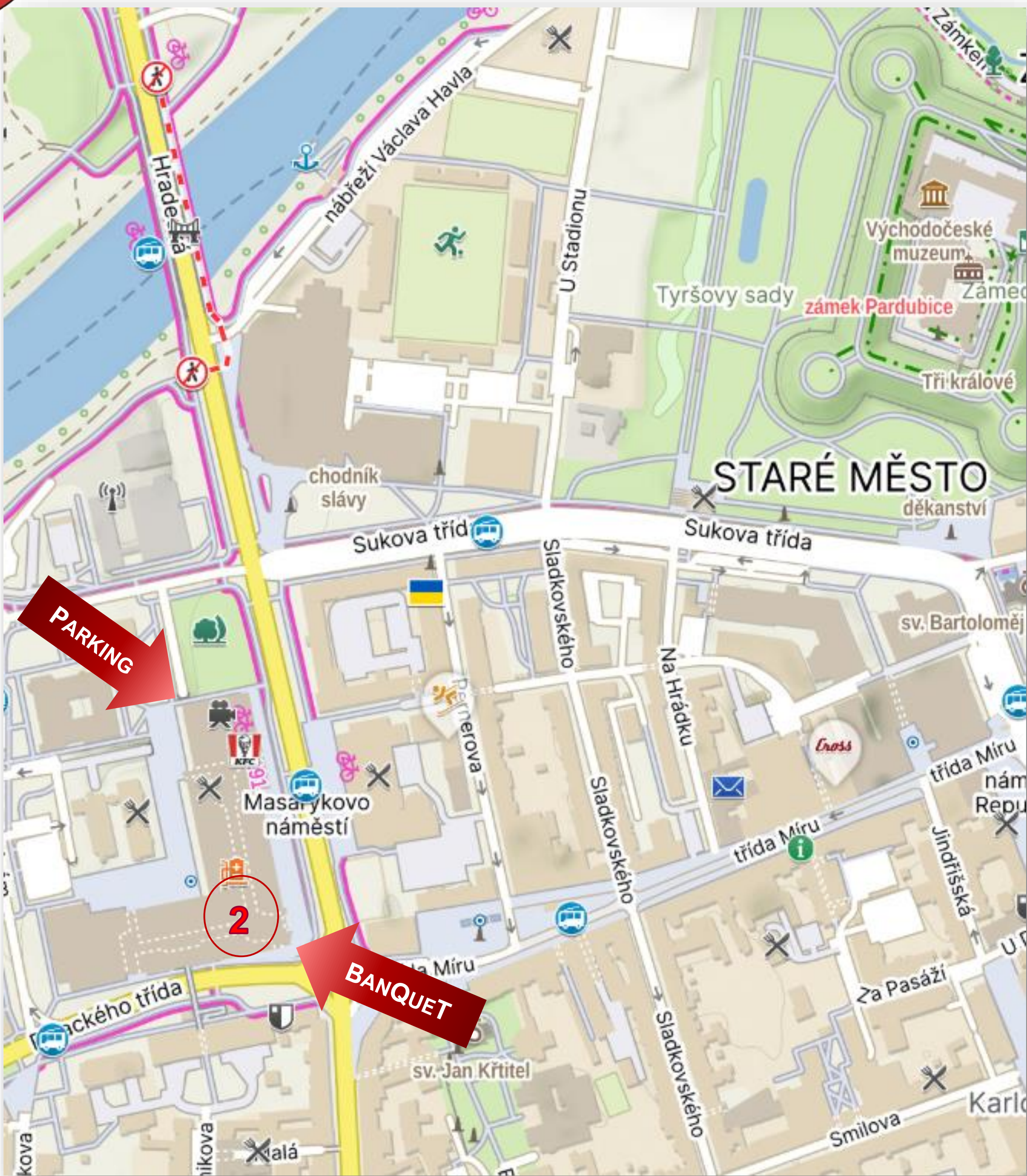
Bus or Trolleybus - more info at www.dpmp.cz

From the Main Train Station to University Hall – line 3, 17, 33 (Polabiny Hradecká – stop No. 6)

PARKING NEAR THE UNIVERSITY HALL




NTREM
1
NTREM
DC
Polabiny I
Družstevní
Mladých
Ohrazenická
Kosmonautů
Hradecká
Studentská
K Cihelně
Kunětická
Brozanská
Ke Koupališti
Stavařov
324
POLABINY
Bajkal
STAVAŘOV
Polabiny V
Labská
nábřeží Václava Havla
U Stadionu
Tyršovy sady


PARKING
BANQUET
2
nábřeží Václava Havla
Hradecká
U Stadionu
Východočeské muzeum
Tyršovy sady
zámek Pardubice
Tři králové
STARÉ MĚSTO
děkanství
chodník slávy
Sukova třída
Sukova třída
Sladkovského
Na Hrádku
Pernerova
sv. Bartoloměj
Masarykovo náměstí
třída Míru
třída Míru
Jindřišská
Za Pasáží
Sladkovského
Sladkovského
sv. Jan Křtitel
Smilova