SUPPLEMENTARY INFORMATION 1 – Sampling site, static magnetic sampler
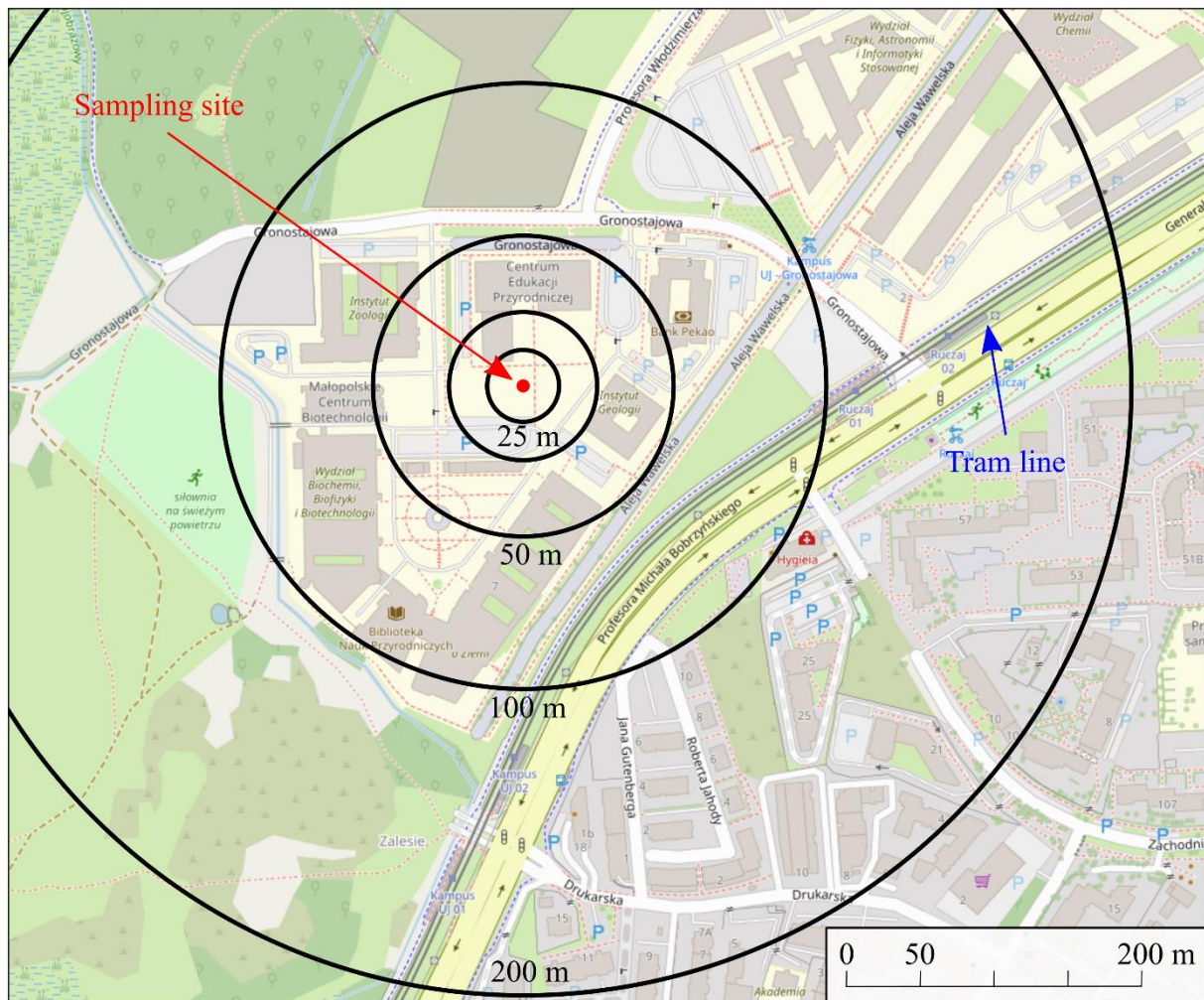

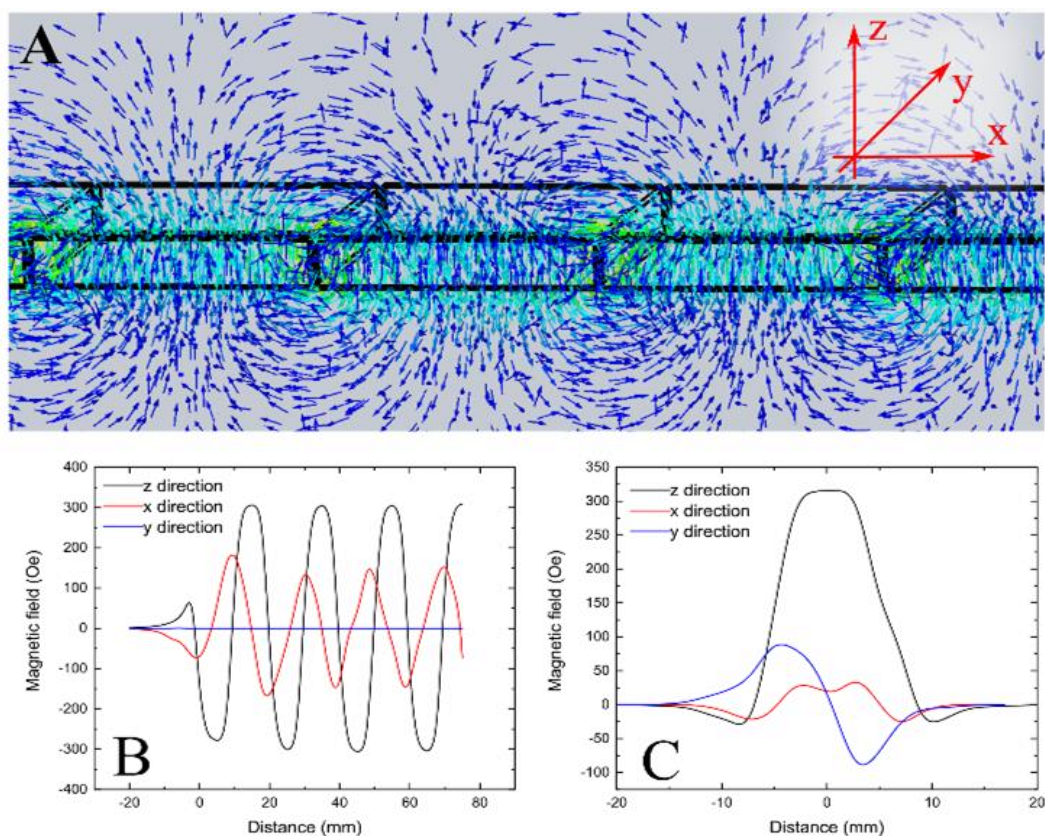*Figure SI-1-1. Sampling site (50.026916979306854 N, 19.902035577195356 E)*

According to Google Maps distances (straight lines) to places related to personal/public transport are as follows:

1. 125 m to the nearest tram lane (separated by at least 5 m tall noise barrier and 3 storey buildings with 35 m wide gap between them);

2. 142 m to the nearest two lane street (separated by at least 5 m tall noise barrier and 3 storey buildings with 35 m wide gap between them);

3. 35 m to the car park (12 parking spots approximately)

4. 40 m to the car park (30 parking spots approximately; mostly hidden on the other side of the 1,5 storey building)

5. 60 m to the car park (20 parking spots approximately)

6. 25 to the closest car park (20 parking spots @ 25 m distance, 20 parking spots @ 35 m, 20 parking spots @ 45 m approximately)

7. 50 m to the car park (20 car parking spots and 8 bus parking spots approximately)

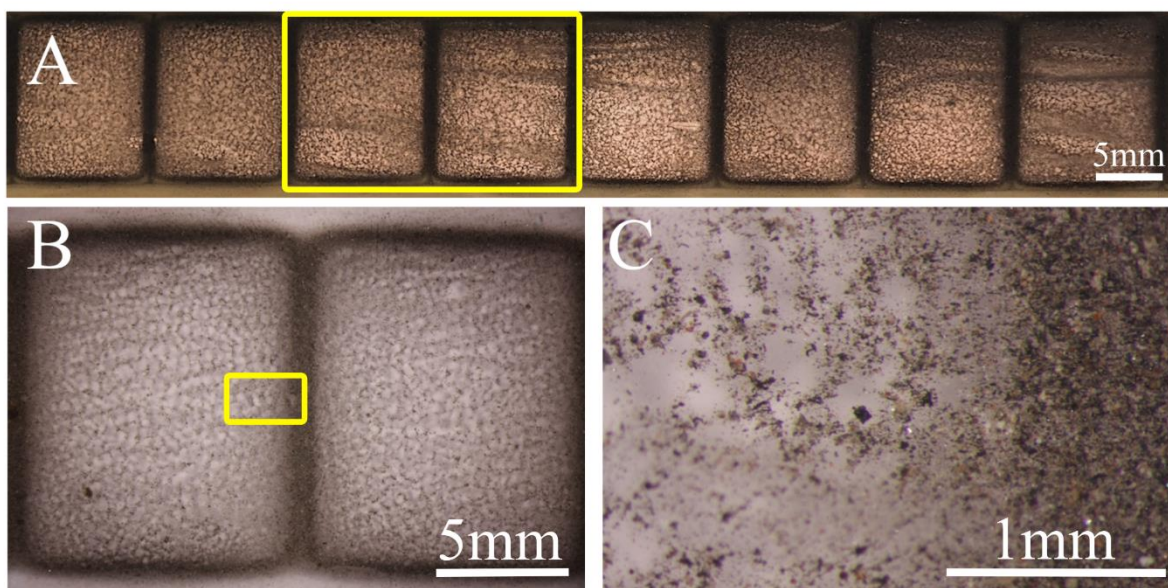8. 50m to the car park (30 parking spots approximately)

Figure SI-1-2. A: View of the sampler located at about 150-170 centimetres above the ground level in the grassy area at the III Campus of the Jagiellonian University (Gronostajowa Street, Kraków, Poland – exact location in the Figure SI-1-1); B: Closer view (area marked with yellow rectangle) of the magnet matrix under the cover placed in order to protect from precipitations.

Figure. SI-1-3. A: Simulation of magnetic field induction vector direction along a matrix of solid magnets; B & C: measured magnetic field intensity along the matrix of magnets (B) and in a direction perpendicular to the long axis of magnets – x, y and z directions of magnetic field as indicated.

To collect the magnetic fraction of atmospheric dust, a static (passive) sampler composed of a matrix of solid magnets arranged to increase gradients and magnetic field strength was used (Fig. SI-1-3 A, B, C). It was covered with a 25 μm thick PVC film in order to ease the separation of the collected sample from the sampler itself.

Figure SI-1-4. Magnetic fraction on the passive sampler after 9 months of deposition; A, B & C. Sample on the surface of rectangular magnet covered with PVC foil with dust grains of various colour, size and shape on the surface of the sampler. C&B are zoomed areas marked by yellow rectangular areas in A&B respectively.