

Candidate supervisor's information summary form
maximum 2 pages – it should be a summary of most important achievements

Name and surname, degree, title: dr hab. Marta Grodzik, prof. SGGW	
Discipline/ disciplines of science	Biology
Professional development (degrees and titles) in chronological order	2008 - title of doctor of agricultural sciences (animal science) 2019 - habilitation degree in the field of natural sciences (biological sciences)
Most important publications/patens over the last 3 years (maximum 10)	<p>Grodzik M, Szczepaniak J, Strojny-Cieslak B, Hotowy A, Wierzbicki M, Jaworski S, Kutwin M, Soltan E, Mandat T, Lewicka A, Chwalibog A. Diamond Nanoparticles Downregulate Expression of CycD and CycE in Glioma Cells. <i>Molecules</i>. 2019 Apr 19;24(8).</p> <p>Kotela A, Lorkowski J, Chmielewski D, Grodzik M, Kotela I. Revision Hip Arthroplasty in Patient with Acetabulum Migration into Subperitoneal Space-A Case Report. <i>Medicina (Kaunas)</i>. 2020 Dec 31;57(1):30.</p> <p>Padzik M, Hendiger EB, Chomicz L, Grodzik M, Szmidt M, Grobelny J, Lorenzo-Morales J. Tannic acid-modified silver nanoparticles as a novel therapeutic agent against <i>Acanthamoeba</i>. <i>Parasitol Res</i>. 2018 Nov;117(11):3519-3525.</p> <p>Jaworski S., Strojny B., Sawosz E., Wierzbicki M., Grodzik M., Kutwin M., Daniluk K., Chwalibog A. 2019. Degradation of Mitochondria and Oxidative Stress as the Main Mechanism of Toxicity of Pristine Graphene on U87 Glioblastoma Cells and Tumors and HS5 Cells. <i>Int. J. Mol. Sci</i>. 2019, 20(3), 650.</p> <p>Hendiger EB, Padzik M, Żochowska A, Baltaza W, Olędzka G, Zyskowska D, Bluszcz J, Jarzynka S, Chomicz L, Grodzik M, Hendiger J, Piñero JE, Grobelny J, Ranoszek-Soliwoda K, Lorenzo-Morales J. Tannic acid-modified silver nanoparticles enhance the anti-<i>Acanthamoeba</i> activity of three multipurpose contact lens solutions without increasing their cytotoxicity. <i>Parasit Vectors</i>. 2020 Dec 22;13(1):624.</p> <p>Hendiger EB, Padzik M, Sifaoui I, Reyes-Battle M, López-Arencibia A, Rizo-Liendo A, Bethencourt-Estrella CJ, Nicolás-Hernández DS, Chiboub O, Rodríguez-Expósito RL, Grodzik M, Pietruczuk-Padzik A, Stępień K, Olędzka G, Chomicz L, Piñero JE, Lorenzo-Morales J. Silver Nanoparticles as a Novel Potential Preventive Agent against <i>Acanthamoeba Keratitis</i>. <i>Pathogens</i>. 2020 May 5;9(5):350.</p> <p>Matusiewicz M, Bączek KB, Kosieradzka I, Niemiec T, Grodzik M, Szczepaniak J, Orlińska S, Węglarz Z. Effect of Juice and Extracts from <i>Saposhnikovia divaricata</i> Root on the Colon Cancer Cells Caco-2. <i>Int J Mol Sci</i>. 2019 Sep 12;20(18).</p> <p>Szczepaniak J, Jagiello J, Wierzbicki M, Nowak D, Sobczyk-Guzenda A, Sosnowska M, Jaworski S, Daniluk K, Szmidt M, Witkowska-Pilaszewicz O, Strojny-Cieslak B, Grodzik M. Reduced Graphene Oxides Modulate the Expression of Cell Receptors and Voltage-</p>

	<p>Dependent Ion Channel Genes of Glioblastoma Multiforme. Int J Mol Sci. 2021 Jan 6;22(2):515.</p> <p>Strojny B., Sawosz E., Grodzik M., Jaworski M., Szczepaniak M., Sosnowska M., Wierzbicki M., Kutwin M., Orlińska S, Chwalibog A. Nanostructures of diamond, graphene oxide and graphite inhibit CYP1A2, CYP2D6 and CYP3A4 enzymes and downregulate their genes in liver cells. Int J Nanomedicine. 2018; 13: 8561–8575.</p> <p>Szczepaniak J., Strojny B., Sawosz Chwalibog E., Jaworski S., Jagiello J., Winkowska M., Szmidt M., Wierzbicki M., Sosnowska M., Balaban J., Winnicka A., Lipinska L., Witkowska Pilaszewicz O., Grodzik M. Effects of Reduced Graphene Oxides on Apoptosis and Cell Cycle of Glioblastoma Multiforme. Int. J. Mol. Sci. 2018, 19(12), 3939.</p>
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	<p>defended doctoral dissertations (auxiliary supervisor): dr Mateusz Wierzbicki – 2014; dr Sławomir Jaworski – 2015; r Barbara Strojny - 2017</p> <p>doctoral programmes opened: mgr Jarosław Szczepaniak - 2020</p>
Project/grants achievements (from the last 10 years)	<ul style="list-style-type: none"> - New, multifunctional nanopowder of carbon ERA-NET nr. 357/ERA-NET 2008-2011 - Nano-nutrition as a method activating anti-cancer mechanisms in in ovo model studies. NCN N N311 540840. 2011-2014 - Micro- and nano-systems in chemistry and biomedical diagnosis (MNS-DIAG) POIG nr. 01.03.01-00 014/08. 2007-2013 - Identification of molecular markers in glioblastoma cells indicating the sensitivity of cells to the action of graphene flakes or their derivatives. NCBiR Lider 2016-2019 - Functional composite materials for printable sensors in telerehabilitation TechMatStrateg III NCBiR, 2020-2023 - The development of antimicrobial and filtration layered fabrics for sanitary and medical protection and fabrication technology based on metal-polymer composites POIR.01.01.01-00-1246/20 „Szybka ścieżka – Koronawirusy” 2020-2023
Topic – research problem – for which the candidate supervisor seeks a doctoral student	<p>(1) Mechanism of anti-tumor action of carbon nanoparticles, with particular emphasis on diamond nanoparticles.</p> <p>(2) In search of new biocidal materials. Testing the antibacterial and virucidal properties of nanomaterials, polymers, fibers and nonwovens.</p> <p>(3) Study of the properties of osteo- and chondro- induction polymers enriched with nanoparticles.</p>
<p><u>Contact details:</u></p> <p>Faulty/Institute</p> <p>E-mail address</p> <p>Tel.</p>	<p>Institute of Biology</p> <p>marta_grodzik@sggw.edu.pl</p> <p>22 59 366 73</p>