



Tetiana Volina

Nationality: Ukrainian Date of birth: 22/07/1987 Gender: Female

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ABOUT ME

Candidate of Technical Sciences, Associate Professor

WORK EXPERIENCE

Associate Professor of the Department of Transport Technologies

Sumy National Agrarian University [2024 – Current]

City: Sumy | Country: Ukraine

Associate Professor of the Department of Descriptive Geometry, Computer Graphics and Design

National University of Life Resources and Environmental Management of Ukraine [2022 – Current]

City: Kyiv | Country: Ukraine

Associate Professor of the Department of Technical Systems Design

Sumy National Agrarian University [2015 – Current]

City: Sumy | Country: Ukraine

Assistant Professor of the Department of Descriptive Geometry, Computer Graphics and Design

National University of Life Resources and Environmental Management of Ukraine [2014 – 2015]

City: Kyiv | Country: Ukraine

Lecturer at the Department of Pedagogy and Innovative Technologies

Sumy Regional Institute of Postgraduate Pedagogical Education [2010 – 2011]

City: Sumy | Country: Ukraine

Member of the All-Ukrainian public organization "Ukrainian Association of Applied Geometry"

[2019 – Current]

Member of the public organization "International Association for Technological Development and Innovation"

(International Association for Technological Development and Innovations (IATDI)) [2019 – Current]

EDUCATION AND TRAINING

Bachelor's degree in Mechanical Engineering

Sumy National Agrarian University [2004 – 2008]

City: Sumy | Country: Ukraine

Bachelor's degree in Accounting and Auditing

Sumy National Agrarian University [2005 – 2008]

City: Sumy | Country: Ukraine

Master's Degree in mechanical engineer

Sumy National Agrarian University [2008 – 2010]

City: Sumy | Country: Ukraine

Master's Degree in Administrative management

Sumy Regional Institute of Postgraduate Pedagogical Education [2008 – 2010]

City: Sumy | Country: Ukraine

Postgraduate studies

National University of Life Resources and Environmental Management of Ukraine [2011 – 2014]

City: Kyiv | Country: Ukraine

PhD in Technical Sciences

Kyiv National University of Civil Engineering and Architecture [2014]

City: Kyiv | Country: Ukraine | Field(s) of study: Applied geometry, engineering graphics

Doctoral studies

National University of Life Resources and Environmental Management of Ukraine [2020 – 2022]

City: Kyiv | Country: Ukraine

Scientific and technical internship

Świętokrzyskie University of Technology [03/08/2020 – 25/09/2020]

City: Kielce | Country: Poland

Online summer school on digital education organized in the framework of the development project "Enhancement of the PhD students potential for qualitative research in Ukraine"

Czech University of Life Sciences Prague [17/10/2022 – 21/10/2022]

City: Prague | Country: Czechia

International program for advanced training of scientific and pedagogical and pedagogical staff of educational institutions "Creating a modern electronic course on the Moodle platform"

[14/11/2022 – 21/12/2022]

Training for Trainers "Google Digital Tools for Education"

[02/02/2023 – 19/02/2023]

Training assignment specified under the Erasmus+ program X UPCT International Staff Week

[08/05/2023 – 12/05/2023]

City: Cartagena | Country: Spain

Scientific and technical staging on the topic: "Digital technologies for engineering research and industrial production in mechanical engineering"

«TRIZ POLAND Spolka z.o.o.» [27/11/2023 – 19/01/2024]

LANGUAGE SKILLS

Mother tongue(s): Ukrainian

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

PUBLICATIONS

Pylypaka S., Nesvidomin V., Zaharova T., Pavlenko O., Klendiy M. The Investigation of Particle Movement on a Helical Surface. In: Ivanov V. et al. (eds) *Advances in Design, Simulation and Manufacturing II. DSMIE 2019. Lecture Notes in Mechanical Engineering* (2019). Springer, Cham, pp. 671-681.

Pylypaka S., Zaharova T., Zalevska O., Kozlov D., Podliniaieva O. Determination of the Effort for Flexible Strip Pushing on the Surface of a Horizontal Cylinder. In: Tonkonogyi V. et al. (eds) *Advanced Manufacturing Processes. InterPartner 2019. Lecture Notes in Mechanical Engineering* (2020). Springer, Cham, pp. 582-590, 2020.

Pylypaka S., Volina T.M., Mukvich M., Efremova G., Kozlova O. Gravitational Relief with Spiral Gutters, Formed by the Screw Movement of the Sinusoid. In: Ivanov V., Pavlenko I., Liaposhchenko O., Machado J., Edl M. (eds) *Advances in Design, Simulation and Manufacturing III. DSMIE 2020. Lecture Notes in Mechanical Engineering. Springer, Cham*, pp. 63-73.

Pylypaka S., Nesvidomin V., Volina T., Sirykh L., Ivashyna L. Movement of the Particle on the Internal Surface of the Spherical Segment Rotating About a Vertical Axis. *INMATEH – Agricultural Engineering*, 2020, 62(3), pp. 79-86.

Volina T., Pylypaka S., Rebrii A., Pavlenko O., Kremets Ya. Particle Movement on Concave Coulter of the Centrifugal Distributor with Radially Installed Vertical Blades. In: Tonkonogyi V. et al. (eds) *Advanced Manufacturing Processes II. InterPartner 2020. Lecture Notes in Mechanical Engineering. Springer, Cham*, pp. 237-246, 2021.

Pylypaka S., Volina T., Hryshchenko I., Rybenko I., Sydorenko N. Dynamics of a Particle on a Movable Wavy Surface. In: Tonkonogyi V. et al. (eds) *Advanced Manufacturing Processes II. InterPartner 2020. Lecture Notes in Mechanical Engineering. Springer, Cham*, pp. 196-206, 2021.

Pylypaka S., Volina T., Nesvidomin A., Zakharova I., Rebrii A. Particle Movement in a Centrifugal Device with Vertical Blades. In: Ivanov V., Pavlenko I., Liaposhchenko O., Machado J., Edl M. (eds) *Advances in Design, Simulation and Manufacturing IV. DSMIE 2021. Lecture Notes in Mechanical Engineering. Springer, Cham*.

Volina T., Pylypaka S., Nesvidomin V., Pavlov A., Dranovska S. The Possibility To Apply The Frenet Trihedron And Formulas For The Complex Movement Of A Point On A Plane With The Predefined Plane Displacement. *Eastern-European Journal of Enterprise Technologies*, 3 (7 (111)), pp. 45-50 (2021).

Pylypaka, S., Kresan, T., Volina, T., Hryshchenko, I., Pshenychna, L., Tatsenko, O. (2021). Designing an outer toothed gear whose wheel teeth are outlined by the logarithmic spiral arcs. *Eastern-European Journal of Enterprise Technologies*, 6(7 (114)), 6-11.

Volina T., Pylypaka S., Nesvidomin V., Rybenko I., Sierykh L. Particle Movement on the External Surface of the Cone that Rotates Around the Vertical Axis. In: Tonkonogyi V. et al. (eds) *Advanced Manufacturing Processes III. InterPartner 2021. Lecture Notes in Mechanical Engineering. Springer, Cham*, pp. 557-567, 2022.

Pylypaka S., Volina T., Zalevska O., Semirnenko S., Hryshchenko I. Movement of a Particle on the Inner Surface with a Preset Meridian. In: Tonkonogyi V. et al. (eds) *Advanced Manufacturing Processes III. InterPartner 2021. Lecture Notes in Mechanical Engineering. Springer, Cham*, pp. 535-545, 2022.

Volina T.M., Pylypaka S.F., Kremets Ya.S., Kozlova O.G., Rebrii A.M. Organization of Transportation of a Particle by an Inclined Cylinder Rotating Around the Axis. In: Ivanov, V., Pavlenko, I., Liaposhchenko, O., Machado, J., Edl, M. (eds) *Advances in Design, Simulation and Manufacturing V. DSMIE 2022. Lecture Notes in Mechanical Engineering*. Springer, Cham, pp. 55–65, 2022.

Pylypaka S., Volina T., Hryshchenko I., Dieniezhnikov S., Rybenko I. Mathematical Model of Lifting Particles of Technological Material by Vertical Auger. In: Ivanov, V., Pavlenko, I., Liaposhchenko, O., Machado, J., Edl, M. (eds) *Advances in Design, Simulation and Manufacturing V. DSMIE 2022. Lecture Notes in Mechanical Engineering*. Springer, Cham, pp. 112–122, 2022.

Volina T., Pylypaka S., Babka V. Motion of a Particle on an Inclined Plane Rotating Around a Vertical Axis. *Int Appl Mech* 58, 488–496 (2022).

Volina T., Pylypaka S., Babka V., Zalevska O., Rebrii A. (2023) Sliding of a Particle on the Horizontal Plane, which Combines Oscillating and Rotary Movements. In: Tonkonogyi, V., Ivanov, V., Trojanowska, J., Oborskyi, G., Pavlenko, I. (eds) *Advanced Manufacturing Processes IV. InterPartner 2022. Lecture Notes in Mechanical Engineering*. Springer, Cham, pp. 44–53.

Kresan T., Pylypaka S., Volina T., Rybenko I., Tatsenko O. (2023). Non-Circular Wheels from a Congruent Arcs. In: Tonkonogyi, V., Ivanov, V., Trojanowska, J., Oborskyi, G., Pavlenko, I. (eds) *Advanced Manufacturing Processes IV. InterPartner 2022. Lecture Notes in Mechanical Engineering*. Springer, Cham, pp. 506–514.

Kresan T., Ahmed A. K., Pylypaka S., Volina T., Semirnenko S., Trokhaniak V., Zakharova I. Construction of Spherical non-circular wheels formed by symmetrical arcs of loxodromes. *Eastern-European Journal of Enterprise Technologies*, Volume 1, Issue 1–121, Pp. 44–50 (2023).

Volina, T., Pylypaka, S., Kozlova, O., Rebrii, A., Rybenko, I. Design of the Curvilinear Axis of the Silage Pipeline. In: Ivanov, V., Pavlenko, I., Liaposhchenko, O., Machado, J., Edl, M. (eds). *Advances in Design, Simulation and Manufacturing VI. DSMIE 2023, LNME*, pp. 115–124, 2023.

Pylypaka S., Hropost V., Kresan T., Volina T., Zabolotnii O. Construction of a flat workpiece for manufacturing a turn of the right helicoid (2023). *Eastern-European Journal of Enterprise Technologies*, Volume 2, Issue 1–122, Pages 6–11.

Ahmed A. K., Nesvidomin A., Pylypaka S., Volina T., Dieniezhnikov S. Determining regularities in the construction of curves and surfaces using the Darboux trihedron (2023). *Eastern-European Journal of Enterprise Technologies* 3(1(123)), pp. 6–12.

Nesvidomin A., Pylypaka S., Volina T., Kalenyk M., Shuliak I., Semirnenko Yu., Tarelnyk N., Hryshchenko I., Kholodniak Yu., Sierykh L. (2023). Constructing geometrical models of spherical analogs of the involute of a circle and cycloid. *Eastern-European Journal of Enterprise Technologies*, 4 (7 (124)), 6–12.

Pylypaka S., Hropost V., Kresan T., Volina T., Vasyliuk V. The Form of a Spiral Spring in a Free State. V. Tonkonogyi et al. (Eds.): *Advanced Manufacturing Processes V. InterPartner 2023. Lecture Notes in Mechanical Engineering*. Springer, Cham, 2024, pp. 509–517.

Volina T., Pylypaka S., Kalenyk M., Dieniezhnikov S., Nesvidomin V., Hryshchenko I., Lytvynenko Ya., Borodai A., Borodai D., Borodai Ya. Construction of mathematical model of particle movement by an inclined screw rotating in a fixed casing (2023). *Eastern-European Journal of Enterprise Technologies*, 5/7 (125), 60–69.

Kholodniak, Y., Havrylenko, Y., Halko, S., Hnatushenko, V., Suprun, O., Volina, T., Miroshnyk O., Shchur, T. (2023). Improvement of the algorithm for setting the characteristics of interpolation monotone curve. *Informatyka, Automatyka, Pomiarzy W Gospodarce I Ochronie Środowiska*, 13(4), 44–50.

Volina, T.M., Pylypaka, S.F. Force required to move the flexible strip up surface of horizontal cylinder. *Machinery and Energetics*, 2021, 12(1), pp. 25–29.

Volina, T. M., Pylypaka, S. F. Investigation of particle movement on rotary spherical segment. *Machinery and Energetics. Journal of Rural Production Research*. Kyiv. Ukraine. 2021, Vol. 12, No. 2, 33–38.

Volina, T. M., Pylypaka, S. F., Babka, V. M. Movement of particle on inner surface with preset meridian, which rotates around vertical axis *Machinery and Energetics. Journal of Rural Production Research*. Kyiv. Ukraine. 2021, Vol. 12, No 4, 15-20.

Volina T., Nesvidomin V., Nesvidomin A., Babka V., Hryshchenko I. Movement of a Particle Along an Inclined Cylinder Rotating Around Its Axis. *Machinery and Energetics. Journal of Rural Production Research*. Kyiv. Ukraine. 2022, Vol. 13, No 2, 32–40.

Nesvidomin, A., Ahmed, A. K., Pylypaka, S., Volina, T., Nesvidomin, V., Vereshchaga, V., Andrukh, S., Pavlenko, O., Semirnenko, Y., & Lysenko, K. (2023). Construction of a mathematical model for approximating the sphere by strips of unfolding surfaces. *Eastern-European Journal of Enterprise Technologies*, 6(1 (126), 78–84.

Pylypaka S., Volina T., Hryshenko I., Trokhaniak O., Taras I. Bending of the Torses by Changing the Regularity of the Reverse Edge Angle of Ascent. *Journal for Geometry and Graphics*, 2023, 27(2), pp. 151–157.

Ahmed A. K., Pylypaka S., Volina T., Hropost V., Kresan T. Elastic Bending of a Strip with the Initial Curvature of the Elastic Axis under the Action of Applied Forces. *Lecture Notes in Mechanical Engineering*, pp. 121 – 130, 2024, 7th International Conference on Design, Simulation, Manufacturing: The Innovation Exchange, DSMIE 2024, Pilsen, 4 – 7 June 2024.

Pylypaka, S., Hropost, V., Volina, T., Kresan, T., & Borodai, S. (2024). Analytical description of adjustment of rolls for manufacturing parts from elastic sheet material. *Eastern-European Journal of Enterprise Technologies*, 1(7 (127), 60–65.

Pylypaka S., Volina T., Hropost V., Kozlova O., Tatsenko O. Investigation of deformation of the spring tooth of agricultural implements from the action of the force applied to it. *Machinery and Energetics*, Volume 15, Issue 1, pp. 23 – 32.

Volina T., Pylypaka S., Nesvidomin V., Kalenyk M., Spiritsev D., Dieniezhnikov S., Hryshchenko I., Rebrii A., Herashchenko T., Soloshchenko V. Determining the shape of a flexible thread in the field of horizontal and vertical forces. *Eastern-European Journal of Enterprise Technologies*, 2 (7 (128)), 24–30.

Pylypaka S., Nesvidomin A., Volina T., Trokhaniak O., Taras I. Creating Ruled Surfaces Using the Base Curve of the Frenet Trihedron. *Journal for Geometry and Graphics* 28 (2024), No. 1, 073–085.

Nesvidomin A., Pylypaka S., Ruzhilo Z., Volina T., Liannoi Yu., Botvinovska S., Zakharova I., Savchenko L., Savchenko O., Rybenko I. Substantiating the rational shape of a drum-type working tool for surface soil treatment. (2024). *Eastern-European Journal of Enterprise Technologies*, 3 (1 (129)), 25–32.

Pylypaka, S., Hropost, V., Nesvidomin, V., Volina, T., Kalenyk, M., Volokha, M., Zalevska, O., Shuliak, I., Dieniezhnikov, S., Motsak, S. Designing a helical knife for a shredding drum using a sweep surface. *Eastern-European Journal of Enterprise Technologies*, 2024, 4(1(130)), pp. 37–44.

Trokhaniak, V., Gorobets, V., Spodyniuk, N., Krushelnytskyi, V., Volina, T. Numerical Modeling of the Processes of Aerodynamics and Heat Transfer of Incoming Air in Poultry Houses. (2024). *Lecture Notes in Civil Engineering*, 2024, 604 LNCE, pp. 543–552.

Kresan, T., Ahmed, A.K., Pylypaka, S., Volina, T., & Voloshko, T. (2024). Construction of the working surfaces of the tillage screw body from the compartments of the developable helicoid. *Machinery & Energetics*, 15(3), 9-21.

Pylypaka, S., Hropost, V., Volina, T., Kalenyk, M., Ruzhilo, Z., Dieniezhnikov, S., Tarel'nyk, N., Tatsenko, O., Semirnenko, S., Motsak, S. (2024). Constructing a model of the axis form in a S-shaped riser of a cultivator paw. *Eastern-European Journal of Enterprise Technologies*, 5 (1 (131)), 65–71.