



[Publications](#)

[Quick Access Links](#)

- [Research-based books](#)
- [Book Chapters](#)
- [Journal Articles](#)
- [AGMA Technical Papers](#)
- [NASA Technical Manuscripts and Reports](#)
- [Articles in Conference Proceedings](#)
- [Articles in Magazines, Posters, and other Technical Presentations](#)

[Research-based books 2](#)

1. F.L. Litvin, A. Fuentes, I. Gonzalez-Perez, Hayasaka, K., [Noncircular Gears: Design and Generation](#), ISBN: 978-0521761703, Cambridge University Press, 2009.
2. F.L. Litvin, A. Fuentes, [Gear Geometry and Applied Theory](#), 2nd Ed., ISBN: 0521815177, Cambridge University Press, 2004.

[Back to top](#)

[Book Chapters 7](#)

1. Fuentes-Aznar, A., "[Compensation of Shaft Deflections through Gear Micro-Geometry Modifications](#)", Dudley's Handbook of Practical Gear Design and Manufacture, Ed.: Stephen P. Radzevich, ISBN: 9780367649029, CRC Press, Taylor & Francis Group, Boca Raton, Florida, 2021.
2. Gonzalez-Perez, I., Guirao-Saura, P., Fuentes-Aznar, A., "[Virtual Metrology of Helical Gears Reconstructed from Point Clouds](#)", Gears in Design, Production, and Education; Eds.: Natalya Barmina and Evgenii Trubachev, Mechanism and Machine Science, Vol. 101, pp. 107-129, Springer, 2021.
3. Gonzalez-Perez, I., Fuentes-Aznar, A., "[Tooth Contact Analysis of Cylindrical Gears Reconstructed from Point Clouds](#)", New Approaches to Gear Design and Production, Eds. Veniamin Goldfarb, Evgenii Trubachev, and Natalya Barmina, Mechanism and Machine Science, Vol. 81, pp. 219-237, Springer, 2020.
4. Fuentes-Aznar, A., "[Design and Generation of Straight Bevel Gears](#)", [Advances in Gear Design and](#)



- [Manufacture](#), Ed.: Stephen P. Radzevich, ISBN: 978-1-138-48473-3, CRC Press, Taylor & Francis Group, Boca Raton, Florida, 2019.
5. Fuentes-Aznar, A., Eisele, S., Gonzalez-Perez, I., "[Computerized Simulation of Manufacturing Errors in Cylindrical Spur Gears and Their Compensation Through Flank Modifications](#)", Advanced Gear Engineering, Ed. Veniamin Goldfarb, Evgenii Trubachev, and Natalya Barmina, Mechanism and Machine Science, Vol. 51, pp. 1-26, Springer International Publishing, 2017.
 6. Fuentes-Aznar, A., "[Prof. Faydor L. Litvin: A Life Dedicated to the Development of the Modern Theory of Gearing](#)", Theory and Practice of Gearing and Transmissions, Ed. Veniamin Goldfarb and Natalya Barmina, Mechanism and Machine Science, Vol. 34, pp. 1-17, Springer International Publishing, 2016.
 7. Fuentes-Aznar, A., Ruiz-Orzaez, R., Gonzalez-Perez, I., "[Compensation of Errors of Alignment Caused by Shaft Deflections in Spiral Bevel Gear Drives](#)", Theory and Practice of Gearing and Transmissions, Ed. Veniamin Goldfarb and Natalya Barmina, Mechanism and Machine Science, Vol. 34, pp. 301-319, Springer International Publishing, 2016.

[Back to top](#)

[Journal Articles 72](#)

1. Fuentes-Aznar, A., Chen, Z., "[Design Considerations and Stress Analysis of Helical Gear Drives with Unequal and Offset Face Widths](#)", **Journal of the Brazilian Society of Mechanical Sciences and Engineering**, 44:291, 2002. **NEW! (JUNE 2022) - ACCESS A VIEW-ONLY VERSION OF THE PAPER BY USING THE FOLLOWING LINK: <https://rdcu.be/cQcL0>**
2. Chen, Z., Lei, B., Zeng, M., Li, Y., Fuentes-Aznar, A., "[Computerized Design, Simulation of Meshing and Stress Analysis of Pure Rolling Internal Helical Gear Drives with Combined Tooth Profiles](#)", **Mechanism and Machine Theory**, 2022. **NEW! (JUNE 2022) - FREE ACCESS UNTIL JULY 31, 2022 - DOWNLOAD LINK: <https://authors.elsevier.com/a/1fDy9.28z4Tnlg>**
3. Chen, Z., Lei, B., Qin, L., Qiu, G., Fuentes-Aznar, A., "[Computerized Design, Simulation of Meshing and Stress Analysis of External Helical Gear Drives Based on Critical Control Points](#)", **Energies**, Vol. 15, No. 12, 2022. **NEW! (JUNE 2022)**
4. Guo, H., Ma, T., Zhang, S., Zhao, N., Fuentes-Aznar, A., "[Computerized Generation and Surface Deviation Correction of Face Gear Drives Generated by Skiving](#)", **Mechanism and Machine Theory** 173, 104839, 2022.
5. Gonzalez-Perez, I., Fuentes-Aznar, A., "[Reverse Engineering of Spiral Bevel Gear Drives Reconstructed from Point Clouds](#)", **Mechanism and Machine Theory** 170, 104694, 2022.
6. Wen, L., Chen, Z., Fuentes-Aznar, A., "[Computerized Design, Simulation of Meshing and Stress Analysis of Non-generated Double Circular-arc Helical Gear Drives with Different Combinations of Transverse Pressure Angle](#)", **Mechanism and Machine Theory** 170, 104683, 2022.
7. Liu, S., Zhu, C., Song, C., Fuentes-Aznar, A., "[Compensation of Errors of Alignment and Contact Pattern Repositioning in Hypoid Gears with Low Crossing Shaft Angle](#)", **Meccanica**, Vol. 56, pp. 2861-2875, 2021.
8. Liu, S., Zhu, C., Fuentes-Aznar, A., Song, C., "[Computerized Determination of the Qualified Region of Main Design Parameters of Face-Milled Hypoid Gears with Low Shaft Angle](#)", **Mechanism and Machine Theory** 159, 104259, 2021.
9. Liu, S., Zhu, C., Fuentes-Aznar, A., Song, C., "[Computerized Approach for Design and Generation of Face-Milled Non-Generated Hypoid Gears with Low Shaft Angle](#)", **Mechanism and Machine Theory** 155, 104084, 2021.
- 10.



- Gonzalez-Perez, I., Guirao-Saura, P., Fuentes-Aznar, A., "[Application of the Bilateral Filter for the Reconstruction of the Spiral Bevel Gear Tooth Surfaces from Point Clouds](#)", Journal of Mechanical Design, Vol. 143 (5), 2021.
11. Yague-Spaude, E., Gonzalez-Perez, I., Fuentes-Aznar, A., "[Stress Analysis of Strain Wave Gear Drives with Four Different Geometries of Wave Generator](#)", Meccanica, Vol. 55 (11), 2285-2304, 2020.
 12. Chen, Z., Zeng, M., Fuentes-Aznar, A., "[Computerized Design, Simulation of Meshing and Stress Analysis of Pure Rolling Cylindrical Helical Gear Drives with Variable Helix Angle](#)", Mechanism and Machine Theory 153, 103962, 2020.
 13. Chen, Z., Zeng, M., Fuentes-Aznar, A., "[Geometric Design, Meshing Simulation and Stress Analysis of Pure Rolling Cylindrical Helical Gear Drives](#)", Proc. IMechE Part C; Journal Mechanical Engineering Science, Vol. 234 (15), 2020.
 14. Chen, Z., Zeng, M., Fuentes-Aznar, A., "[Geometric Design, Meshing Simulation and Stress Analysis of Pure Rolling Rack and Pinion Mechanisms](#)", Journal of Mechanical Design, Vol. 142 (3), 2020.
 15. Guo, H., Fuentes-Aznar, A., "[Compensation of Errors of Alignment Caused by Shaft Deflections in Face-Gear Drives Generated by Shaper Cutters](#)", Mechanism and Machine Theory 144, 2020.
 16. Gonzalez-Perez, I., Fuentes-Aznar, A., "[Conjugated Action and Methods for Crowning in Face-Hobbed Spiral Bevel and Hypoid Gear Drives Through the Spirac System](#)", [Mechanism and Machine Theory](#) 139, pp. 109-130, 2019.
 17. Hsieh, C.-F., Fuentes-Aznar, A., "[Performance Prediction Method of Cycloidal Speed Reducers](#)", [Journal of the Brazilian Society of Mechanical Sciences and Engineering](#), Vol. 41:186, 2019.
 18. Guo, H., Gonzalez-Perez, I., Fuentes-Aznar, A., "[Computerized Generation and Meshing Simulation of Face Gear Drives Manufactured by Circular Cutters](#)", [Mechanism and Machine Theory](#) 133, pp. 44-63, 2019.
 19. Gonzalez-Perez, I., Martinez-Diaz, M., Fuentes-Aznar, A., "[Compensación de los Errores de Alineación Provocados por las Deflexiones de los Ejes en Transmisiones de Engranajes Cónicos Espirales Diseñadas con Distintos Tipos de Huella de Contacto](#)", [Revista Iberoamericana de Ingeniería Mecánica](#), Vol. 22, N. 2, pp. 102-119, 2018.
 20. Fuentes-Aznar, A., Ruiz-Orzaez, R., Gonzalez-Perez, I., "[Computational Approach to Design Face-Milled Spiral Bevel Gear Drives with Favorable Conditions of Meshing and Contact](#)", Meccanica, Vol.



53: 2669, 2018.

21.

Fuentes-Aznar, A., Yague-Martinez, E., Gonzalez-Perez, I., "[Computerized Generation and Gear Mesh Simulation of Straight Bevel Gears Manufactured by Dual Interlocking Circular Cutters](#)", Mechanism and Machine Theory, Vol. 122, pp. 160-176, 2018.

22.

Gonzalez-Perez, I., Fuentes-Aznar, A., "[Implementation of a Finite Element Model for Gear Stress Analysis Based on Tie-Surface Constraints and Its Validation Through the Hertz's Theory](#)", Journal of Mechanical Design, Vol. 140, 2018.

23.

Gonzalez-Perez, I., Fuentes-Aznar, A., "Implementation of a Finite Element Model for Stress Analysis of Gear Drives Based on Multi-Point Constraints", Mechanism and Machine Theory 117, pp. 35-47, 2017.

24.

Fuentes-Aznar, A., Ruiz-Orzaez, R., Gonzalez-Perez, I., "Numerical Approach for Determination of Rough-Cutting Machine-Tool Settings for Fixed-Settings Face-Milled Spiral Bevel Gears", Mechanism and Machine Theory 112, pp. 22-42, 2017.

25.

Gonzalez-Perez, I., Fuentes-Aznar, A., "Analytical Determination of Basic Machine-Tool Settings for Generation of Spiral Bevel Gears and Compensation of Errors of Alignment in the Cyclo-Paloid System", International Journal of Mechanical Sciences 120, pp. 91-104, 2017.

26.

Fuentes-Aznar, A., Gonzalez-Perez, I., "Mathematical Definition and Computerized Modeling of Spherical Involute and Octoidal Bevel Gears Generated by Crown Gear", Mechanism and Machine Theory 106, pp. 94-114, 2016.

27.

Fuentes-Aznar, A., Ruiz-Orzaez, R., Gonzalez-Perez, I., "Comparison of Spur, Helical and Curvilinear Gear Drives by means of Stress and Tooth Contact Analyses", Meccanica, pp. 1-18, August 2016.

28.

Gonzalez-Perez, I., Fuentes, A., Ruiz-Orzaez, R., "An Approach for Determination of Basic Machine-Tool Settings from Blank Data in Face-Hobbed and Face-Milled Hypoid Gears", Journal of Mechanical Design, Vol. 137(9), 2015.

29.

Sanchez-Marin, F., Fuentes, A., Iserte, J.L., Gonzalez-Perez, I., "A New Geometrically Adaptive Approach for Tooth Contact Analysis of Gear Drives", Power Transmission Engineering, Vol. 40, 2015.

30.

Gonzalez-Perez, I., Roda-Casanova, V., Fuentes, A., "Modified Geometry of Spur Gear Drives for Compensation of Shaft Deflections", Meccanica, Vol 50 (7), pp.1855-1867, 2015.



31. Fuentes, A., Ruiz-Orzaez, R., Gonzalez-Perez, I., "Computerized Design, Simulation of Meshing, and Finite Element Analysis of Two Types of Geometry of Curvilinear Cylindrical Gears", *Computer Methods in Applied Mechanics and Engineering*, Vol. 272, pp. 321-339, 2014.
32. Roda-Casanova, V., Sanchez-Marin, F.T., Gonzalez-Perez, I., Iserte, J.L., Fuentes, A., "Determination of the ISO Face Load Factor in Spur Gear Drives by the Finite Element Modeling of Gears and Shafts", *Mechanism and Machine Theory*, Vol. 65, pp. 1-13, 2013.
33. Gonzalez-Perez, I., Roda-Casanova, V., Fuentes, A., Sanchez-Marin, F.T., Iserte, J.L., "A Finite Element Model for Consideration of the Torsional Effect on the Bearing Contact of Gear Drives", *Journal of Mechanical Design*, Vol. 134, pp. 071007/1-8, 2012.
34. Fuentes, A., Iserte, J.L., Gonzalez-Perez, I., Sanchez-Marin, F.T., "Computerized Design of Advanced Straight and Skew Bevel Gears Produced by Precision Forging", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 200, pp. 2363-2377, 2011.
35. Gonzalez-Perez, I., Iserte, J.L., Fuentes, A., "Implementation of Hertz Theory and Validation of a Finite Element Model for Stress Analysis of Gear Drives with Localized Bering Contact", *Mechanism and Machine Theory*, Vol. 46, pp. 765-783, 2011.
36. Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., "Analytical Determination of Basic Machine-Tool Settings for Generation of Spiral Bevel Gears from Blank Data", *Journal of Mechanical Design*, Vol. 132, pp. 101002/1-11, 2010.
37. Fuentes, A., Nagamoto, H., Litvin, F.L., Gonzalez-Perez, I., Hayasaka, K., "Computerized Design of Modified Helical Gears Finished by Plunge Shaving", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 199, pp. 1677-1690, 2010.
38. Litvin, F.L., Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., "Tandem Design of Mechanisms for Function Generation and Output Speed Variation", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 198, pp. 860-876, 2009.
39. Litvin, F.L., Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., "Design and Investigation of Gear Drives with Non-Circular Gears Applied for Speed Variation and Generation of Functions", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 197, pp. 3783-3802, August 2008.
40. Lewicki, D.G., Woods, R., Litvin, F.L., Fuentes, A., "Evaluation of a Low-Noise Formate Spiral Bevel Gear Set", *Gear Technology*, January-February 2008.



41. Litvin, F.L., Gonzalez-Perez, I., Yukishima, K., Fuentes, A., Hayasaka, K., "Generation of Planar and Helical Elliptical Gears by Application of Rack-Cutter, Hob, and Shaper", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 196, pp. 4321-4336, September 2007.
42. Litvin, F.L., Gonzalez-Perez, I., Yukishima, K., Fuentes, A., Hayasaka, K., "Design, Simulation of Meshing, and Contact Stresses for an Improved Worm Gear Drive", *Mechanism and Machine Theory*, Vol. 42, pp. 940-959, August 2007.
43. Litvin, F.L., Yukishima, K., Hayasaka, K., Gonzalez-Perez, I., Fuentes, A., "Geometry and Investigation of Klingelnberg Type Worm Gear Drive", *ASME Journal of Mechanical Design*, Vol. 129, pp. 17-22, January 2007.
44. Litvin, F.L., Vecchiato, D., Yukishima, K., Fuentes, A., Gonzalez-Perez, I., Hayasaka, K., "Reduction of Noise of Loaded and Unloaded Misaligned Gear", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 194, pp. 5523-5536, 2006.
45. Litvin, F.L., Fuentes, A., Hayasaka, K., "Design, Manufacture, Stress Analysis, and Experimental Tests of Low-Noise High-Endurance Spiral Bevel Gears", *Mechanism and Machine Theory*, Vol. 41, pp. 83-118, January 2006.
46. Litvin, F.L., Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., Yukishima, K., "Topology of Modified Surfaces of Involute Helical Gears with Line Contact Developed for Improvement of Bearing Contact, Reduction of Transmission Errors, and Stress Analysis", *Journal Mathematical and Computer Modelling*, Vol. 42, pp. 1063-1078, November 2005.
47. Litvin, F.L., Gonzalez-Perez, I., Fuentes, A., Vecchiato, D., Hansen, B.D., Binney, D., "Design, Generation, and Stress Analysis of Face-Gear Drive with Helical Pinion", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 194, pp. 3870-3901, September 2005.
48. Litvin, F.L., Gonzalez-Perez, I., Fuentes, A., Vecchiato, D., Sep, T.M., "Generalized Concept of Meshing and Contact of Involute Crossed Helical Gears and its Application", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 194, N. 34-35, pp. 3710-3745, September 2005.
49. Litvin, F.L., Sheveleva, G.I., Vecchiato, D., Gonzalez-Perez, I., Fuentes, A., "Modified Approach for Tooth Contact Analysis of Gear Drives and Automatic Determination of Guess Values", *Journal Computer Methods in Applied Mechanics and Engineering*, Vol. 194, N. 27-29, pp. 2927-2946, July 2005.
50. Litvin, F.L., Vecchiato, D., Gurovich, E., Fuentes, A., Gonzalez-Perez, I., Hayasaka, K., Yukishima,



"Computerized Developments in Design, Generation, Simulation of Meshing, and Stress Analysis of Gear Drives", *Meccanica (International Journal of the Italian Association of Theoretical and Applied Mechanics AIMETA)*, Vol. 40, pp. 291-323, June 2005.

51.

Litvin, F.L., Vecchiato, D., Fuentes, A., Gonzalez-Perez, I., "Automatic Determination of Guess Values for Simulation of Meshing of Gear Drives", *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, N. 33-35, pp. 3745-3758, August 2004.

52.

Litvin, F. L., Fuentes, A., Gonzalez-Perez, I., Carnevali, L., Sep, T.M., "New Version of Novikov-Wildhaber Helical Gears: Computerized Design, Simulation of Meshing and Stress Analysis", *Gearing and Transmission*, N. 1, pp. 5-37, January 2004.

53.

Argyris, J., Fuentes, A., Litvin, F.L., "Computerized Integrated Approach for Design and Stress Analysis of Spiral Bevel Gears", *Gearing and Transmission*, N. 1, pp. 38-76, January 2004.

54.

Litvin, F.L., Fuentes, A., Zanzi, C., Pontiggia, M., "Design, Generation, and Stress Analysis of two Versions of Geometry of Face Gear Drives", *Gearing and Transmission*, N. 1, pp. 77-101, January 2004.

55.

Litvin, F.L., Fuentes, A., Demenego, A., Vecchiato, D., Fan, Q., "New Developments of Design and Generation of Gear Drives", *Gearing and Transmission*, N. 1, pp. 102-118, January 2004.

56.

Fuentes, A., Gonzalez-Perez, I., "Stress Analysis of Spur Gears with Modified Geometry", *Revista Iberoamericana de Ingenieria Mecanica*, Vol. 8, N. 1, pp. 15-30, 2004, (in Spanish).

57.

Litvin, F.L., Fuentes, A., Gonzalez-Perez, I., Carvenali, L., Kawasaki, K., Handschuh, R.F., "Modified Involute Helical Gears: Computerized Design, Simulation of Meshing and Stress Analysis", *Computer Methods in Applied Mechanics and Engineering*, Vol. 192, pp. 3619-3655, August 2003.

58.

Fuentes, A., Gonzalez-Perez, I., Pedrero, J.I., "Design, Generation, Simulation of Meshing, and Tooth Contact Analysis of Spur Gears with Modified Geometry", *Revista Iberoamericana de Ingenieria Mecanica*, Vol. 7, N. 1, pp. 3-31, 2003 (in Spanish).

59.

Litvin, F.L., Fuentes, A., Gonzalez-Perez, I., Carvenali, L., Sep. T.M., "New Version of Novikov-Wildhaber Helical Gears: Computerized Design, Simulation of Meshing and Stress Analysis", *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, pp. 5707-5740, December 2002.

60.

Litvin, F.L., Fuentes, A., Zanzi, C., Pontiggia, M., "Design, Generation, and Stress Analysis of two Versions of Geometry of Face Gear Drives", *Mechanism and Machine Theory*, Vol. 37, pp.



1179-1211, October 2002.

61.

Litvin, F.L., Fuentes, A., Zanzi, C., Pontiggia, M., Handschuh, R.F., "Face Gear Drive with Spur Involute Pinion: Geometry, Generation by a Worm, Stress Analysis", *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, pp. 2785-2813, April 2002.

62.

Litvin, F.L., Nava, A., Fan, Q., Fuentes, A., "New Geometry of Face-Worm Gear Drives with Conical and Cylindrical Worm: Generation, Simulation of Meshing, Stress Analysis", *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, pp. 3035-3054, 2002.

63.

Fuentes, A., Litvin, F.L., Mullins, B. R., Woods, R., Handschuh, R. F., "Design and Stress Analysis of Low-Noise Adjusted Bearing Contact Spiral Bevel Gears", *Journal of Mechanical Design*, Vol. 124, pp. 524-532, September 2002.

64.

Litvin, F.L., Fuentes, A., Fan, Q., Handschuh, R.F., "Computerized Design, Simulation of Meshing and Contact, and Stress Analysis of Face-Milled Formate Generated Spiral Bevel Gears", *Mechanism and Machine Theory*, Vol. 37, N. 5, pp. 441-459, 2002.

65.

Argyris, J., Fuentes, A., Litvin, F.L., "Computerized Integrated Approach for Design and Stress Analysis of Spiral Bevel Gears", *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, pp. 1057-1095, January 2002.

66.

Litvin, F.L., Fuentes, A., Demenego, A., Vecchiato, D., Fan, Q., "New Developments of Design and Generation of Gear Drives", *Journal of Mechanical Engineering Science, Part C, Proc. Institution of Mechanical Engineers*, Vol. 215, C7, pp. 747-757, 2001.

67.

Litvin, F.L., Fuentes, A., Howkins, M., "Design, Generation, and TCA of Asymmetric Face Gear Drive With Modified Geometry", *Computer Methods in Applied Mechanics and Engineering*, Vol. 190, 143-144, pp. 5837-5865, 2001.

68.

Pedrero, J.I., Fuentes, A., Estrems, M., "Approximate Method for the Determination of the Bending Strength Geometry Factor for External Spur and Helical Gear Teeth", *Journal of Mechanical Design*, Vol. 122, pp. 331-336, September 2000.

69.

Pedrero, J.I., Solano, J., Fuentes, A., García-Masiá, C., "Optimization of Two-Stage Gear Reducers: Determination of the Partial Gear Ratios", *Journal of Technology Information*, Vol. 8, pp. 27-34, Chile, 1999.

70.

Pedrero, J.I., Artes, M., Fuentes, A., "Load Sharing Model for Involute Spur and Helical Gears", *Revista Iberoamericana de Ingenieria Mecanica*, Vol. 3, pp. 31-43, January 1999 (in Spanish).



71. Pedrero, J.I., Rueda, A., Fuentes, A., "Determination of the ISO Tooth Form Factor for Involute Spur and Helical Gears", Mechanism and Machine Theory, Vol. 34, pp. 89-103, January 1999.
72. Garcia-Masia, C., Fuentes, A., Pedrero, J.I., "Approximate Equations for the Determination of the Form Factor and the Stress Concentration Factor for Spur and Helical Gears", Revista Iberoamericana de Ingenieria Mecanica, Vol. 1, March 1997 (in Spanish).

[Back to top](#)

[AGMA Technical Papers 6](#)

1. Gonzalez-Perez, I, Fuentes-Aznar, A., Calvo-Irisarri, J.C., Fernandez-Sison, A., Aurrekoetxea-Arratibel, H., "Investigation of the Effect of Application of Non-Conventional Root Profiles for Reduction of Bending Stresses in Helical Gear Drives", AGMA 2021 Fall Technical Meeting, American Gear Manufacturers Association, Paper 21FTM01, 2021.
2. Fuentes-Aznar, A., Gonzalez-Perez, I., "Integrating Non-Contact Metrology in the Process of Analysis and Simulation of Gear Drives", AGMA 2018 Fall Technical Meeting, American Gear Manufacturers Association, Paper 18FTM21, 2018.
3. Fuentes-Aznar, A., Gonzalez-Perez, I., "Gear Tooth Strength Analysis of High Pressure Angle Cylindrical Gears", AGMA 2017 Fall Technical Meeting, American Gear Manufacturers Association, Paper 17FTM03, 2017.
4. Fuentes-Aznar, A., Gonzalez-Perez, I., Pasapula, H.K., "Computerized Design of Straight Bevel Gears with Optimized Profiles for Forging, Molding, or 3D Printing", AGMA 2016 Fall Technical Meeting, American Gear Manufacturers Association, Paper 16FTM10, 2016.
5. Pedrero, J.I., Artes, M., Pleguezuelos, M., Garcia-Masia, C., Fuentes, A., "Theoretical Model for Load Distribution on Cylindrical Gears: Application to Contact Stress Analysis", AGMA 1999 Fall Technical Meeting, American Gear Manufacturers Association, Paper 99FTM15, 1999.
6. Pedrero, J.I., Garcia-Masia, C., Fuentes, A., "On the Location of the Tooth Critical Section for the Determination of the AGMA J-Factor", AGMA 1997 Fall Technical Meeting, American Gear Manufacturers Association, Paper 97FTM6, 1997.

[Back to top](#)

[NASA Technical Manuscripts and Reports 10](#)

1. Lewicki, D.G., Woods, R., Litvin, F.L., Fuentes, A., "[Evaluation of Low-Noise Formate Spiral Bevel Gear Set](#)", NASA-TM-2007-215032, ARL-TR-4135, December 2007.
2. Litvin, F. L., Fuentes, A., Gonzalez-Perez, I., Piscopo, A., Ruzziconi, P., "[Face Gear Drive with Helical Involute Pinion: Geometry, Generation by a Shaper and a Worm, Avoidance of Singularities and Stress Analysis](#)", NASA/CR-2004-213443, ARL-CR-557, February 2005.
3. Litvin, F. L., Fuentes, A., Vecchiato, D., Gonzalez-Perez, I., "[New Design and Improvement of Planetary Gear Trains](#)", NASA/CR-2004-213101, ARL-CR-50540, July 2004.



4. Litvin, F. L., Fuentes, A., Gonzalez-Perez, I., Carnevali, L., Kawasaki, K., "[Modified Involute Helical Gears: Computerized Design, Simulation of Meshing, and Stress Analysis](#)", NASA/CR-2003-212229, ARL-CR-514, June 2003.
5. Litvin, F. L., Fuentes, A., Mullins, B. R., Wood, R., "Computerized Design, Generation, Simulation of Meshing and Contact, and Stress Analysis of Formate Cut Spiral Bevel Gear Drives", NASA/CR-2003-212336, ARL-CR-525, June 2003.
6. Litvin, F. L., Nava, A., Fan, Q., Fuentes, A., "New Geometry of Worm Face Gear Drives with Conical and Cylindrical Worm: Generation, Simulation of Meshing, Stress Analysis", NASA/CR-2002-211895, ARL-CR-0511, November 2002.
7. Litvin, F. L., Fuentes, A., Zanzi, C., Pontiggia, M., "Face Gear Drive with Spur Involute Pinion: Geometry, Generation by a Worm, Stress Analysis", NASA/CR-2002-211362, ARL-CR-491, February 2002.
8. Litvin, F. L., Fuentes, A., Mullins, B. R., Woods, R., "Design and Stress Analysis of Low-Noise Adjusted Bearing Contact Spiral Bevel Gears", NASA/CR-2002-211344, ARL-CR-486, January 2002.
9. Litvin, F. L., Fan, Q., Fuentes, A., "Computerized Design, Generation and Simulation of Meshing and Contact of Face-Milled Formate Cut Spiral Bevel Gears", NASA/CR-2001-210894, ARL-CR-467, May 2001.
10. Litvin, F. L., Fuentes, A., Hawkins, J. M., Handschuh, R., "Design, Generation and Tooth Contact Analysis (TCA) of Asymmetric Face Gear Drive With Modified Geometry", NASA/TM-2001-210614, ARL-TR-2373, January 2001.

[Back to top](#)

[Articles in Conference Proceedings 53](#)

1. Gonzalez-Perez, I., Fuentes-Aznar, A., "Reverse Engineering of Spiral Bevel Gear Drives Reconstructed from Point Clouds", Proceedings of the 1st International Conference on Machine Design (MD2021), Porto, Portugal, September 9-10, 2021.
2. Gonzalez-Perez, I., Rosato, S., Fuentes-Aznar, A., "Modeling and Analysis of Root Profiles with Ellipse and Hermine Curve in Spur Gear Drives", Proceedings of the XIV Latin-American Congress of Mechanical Engineering, Cartagena, Colombia, November 12-15, 2019 (in Spanish).
3. Braescu, V., Fuentes-Aznar, A., Ghoneim, H., "Enhancing Load Capacity of Plastic Gears via the Application of Woven Composite Blankets", Proceedings of the American Society of Composites (ASC) 34th Technical Conference, Atlanta, GA, USA, September 23-25, 2019.
4. Chen, Z., Zeng, M., Fuentes-Aznar, A., "Geometric Design of Pure Rolling Rack and Pinion Mechanisms", Proceedings of ASME 2019 International Design Engineering Technical Conferences (IDETC) - 2019 ASME International Power Transmission and Gearing Conference (PTG), Anaheim, CA, USA, August 18-21, 2019.
5. Kini, S., Fuentes-Aznar, A., Ghoneim, H., "Composite Fabric Blankets for Plastic Gears", Proceedings of the ASME 2018 International Mechanical Engineering Congress and Exposition (IMECE2018), American Society of Mechanical Engineers, Pittsburgh, 2018.
6. Gonzalez-Perez, I., Martinez-Diaz, M., Fuentes-Aznar, A., "Compensación de los Errores de Alineación Provocados por las Deflexiones de los Ejes en Transmisiones de Engranajes Cónicos Espirales Diseñadas con Distintos Tipos de Huella de Contacto", Proceedings of the XXII Congreso Nacional de Ingeniería Mecánica, Asociación Española de Ingeniería Mecánica, 2018.
7. Gonzalez-Perez, I., Fuentes-Aznar, A., "Comparison of Cyclo-Paloid and Cyclo-Cut Cutting Methods for Generation of Spiral Bevel Gears", Proceedings of ASME 2017 International Design



- Engineering Technical Conferences (IDETC) - 2017 ASME International Power Transmission and Gearing Conference (PTG), Cleveland, OH, USA, August 6-9, 2017.
8. Guo, H., Fuentes-Aznar, A., Liu, R., Iglesias-Victoria, P., "Friction and Wear Properties of Halogen-Free and Halogen-Containing Ionic Liquids Used as Neat Lubricants, Lubricant Additives and Thin Lubricant Layers", Proceedings of ASME 2017 International Design Engineering Technical Conferences (IDETC) - 2017 ASME International Power Transmission and Gearing Conference (PTG), Cleveland, OH, USA, August 6-9, 2017.
 9. Fuentes-Aznar, A., Iglesias-Victoria, P., Eisele, S., Gonzalez-Perez, I., "Fillet Geometry Modeling for Nongenerated Gear Tooth Surfaces", Proceedings of the International Conference on Power Transmissions 2016 (ICPT 2016), Ed. Datong Qin, Yimin Shao, Chongqing, China, 2016.
 10. Stringer, B., Liu, R., Fuentes-Aznar, A., Iglesias-Victoria, P., "Effect of Cutting Conditions on Dimensional Accuracy and Surface Roughness in Traditional Milling of Steel", Proceedings of the ASME 2016 International Mechanical Engineering Congress & Exposition, Phoenix, AZ, November 2016.
 11. Gonzalez-Perez, I., Martinez-Diaz, M., Fuentes-Aznar, A., "Design and 3D Printing of Planetary Gear Drives as a Tool for Teaching Support", Proceedings of the XXI National Congress of Mechanical Engineering, Elche, Spain, November 2016.
 12. Ruiz-Orzaez, R., Fuentes-Aznar, A., Gonzalez-Perez, I., "Design and Generation of Curvilinear Cylindrical Gears", Proceedings of the XX National Congress of Mechanical Engineering, Malaga, Spain, September 2014 (In Spanish).
 13. Fuentes-Aznar, A., "Faydor L. Litvin: A Life Dedicated to the Development of the Modern Theory of Gearing. American Period", International Symposium Theory and Practice of Gearing 2014, Izhevsk, Russia, January 2014.
 14. Fuentes-Aznar, A., Gonzalez-Perez, I., Sanchez-Marin, F.T., Iserte-Vilar, J.L., "IGD: The Ultimate Tool for Advanced Gear Design", International Symposium Theory and Practice of Gearing 2014, Izhevsk, Russia, January 2014.
 15. Sanchez-Marin, F.T., Fuentes-Aznar, A., Iserte-Vilar, J.L., Gonzalez-Perez, I., "A New Geometrically Adaptive Approach for Tooth Contact Analysis of Gear Drives", Proceedings of the International Gear Conference, Vol. 1, pp. 486-494, Lyon Villeurbanne, France, August 2014.
 16. Gonzalez-Perez, I., Fuentes-Aznar, A., Roda-Casanova, V., Sanchez-Marin, F.T., Iserte-Vilar, J.L., "A Finite Element Model for Stress Analysis of Lightweight Spur Gear Drives Based on Thin-Rimmed Gears", Proceedings of the International Conference on Gears, VDI-Berichte 2199, pp. 75-86, Munich, October 2013.
 17. Sanchez-Marin, F.T., Iserte-Vilar, J.L., Fuentes-Aznar, A., Gonzalez-Perez, I., Roda-Casanova, V., "Backlash Analysis in Gear Transmissions by Adaptive Refinement", Proceedings of the XI Latin-American Congress of Mechanical Engineering, La Plata, Argentina, November 2013 (in Spanish).
 18. Iserte-Vilar, J.L., Sanchez-Marin, F.T., Roda-Casanova, V., Fuentes-Aznar, A., Gonzalez-Perez, I., "Stress Analysis of Gear Drives based on the Boundary Element Method with Non-Conforming Meshes", Proceedings of the XI Latin-American Congress of Mechanical Engineering, La Plata, Argentina, November 2013 (in Spanish).
 19. Martinez-Ciudad, A., Lopez de la Calle, L.N., Sanchez, J.A., Amores, J., Fuentes-Aznar, A., Gonzalez-Perez, I., "Effect of the Interaction Design-Manufacturing in the Contact Pattern Modification of Spiral Bevel Gears", Proceedings of the Congress of Machine Tool and Manufacturing Technologies, San Sebastian, Spain, June 2013.
 20. Fuentes, A., Gonzalez-Perez, I., Sanchez-Marin, F.T., Hayasaka, K., "On the Behavior of Asymmetric Cylindrical Gears in Gear Transmissions", Proceedings of the FISITA 2012 World Automotive Congress, Beijing, China, 2012.
 21. Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., "An Enhanced Finite Element Model for Determination of Load Capacity in Planetary Gear Trains", Proceedings of the FISITA 2012 World Automotive Congress, Beijing, China, 2012.



22. Sanchez-Marin, F.T., Roda-Casanova, V., Iserte-Vilar, J.L., Fuentes, A., Gonzalez-Perez, I., "Comparison of Gear Models for the Determination of Misalignments Caused by Power Transmission", Proceedings of the XIX National Congress of Mechanical Engineering, Castellon, Spain, November 2012 (In Spanish).
23. Iserte-Vilar, J.L., Sanchez-Marin, F.T., Gonzalez-Perez, I., Fuentes, A., "Development of a Procedure based on the Boundary Element Method for the Stress Analysis of Gear Drives", Proceedings of the XIX National Congress of Mechanical Engineering, Castellon, Spain, November 2012 (In Spanish).
24. Fuentes, A., Gonzalez-Perez, I., Nagamoto, H., Hayasaka, K., "Gear Whine Noise Spectra Caused by Transmission Errors", Proceedings of ASME 2011 International Design Engineering Technical Conferences (IDETC) - 12th ASME International Power Transmission and Gearing Conference (PTG), Washington, DC, USA, August 28-31, 2011.
25. Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., "Computerized Design and Tooth Contact Analysis of Spiral Bevel Gears Generated by the Duplex Helical Method", Proceedings of ASME 2011 International Design Engineering Technical Conferences (IDETC) - 12th ASME International Power Transmission and Gearing Conference (PTG), Washington, DC, USA, August 28-31, 2011.
26. Roda-Casanova, V., Iserte, J.L., Sanchez-Marin, F.T., Fuentes, A., Gonzalez-Perez, I., "Development and Comparison of Shaft-Gear Models for the Computation of Gear Misalignments Due to Power Transmission", Proceedings of ASME 2011 International Design Engineering Technical Conferences (IDETC) - 12th ASME International Power Transmission and Gearing Conference (PTG), Washington, DC, USA, August 28-31, 2011.
27. Fuentes, A., Gonzalez-Perez, I., Hayasaka, K., "Computerized Design of Conical Involute Gears with Improved Bearing Contact and Reduced Noise and Vibration", Proceedings of the International Conference on Gears, VDI-Berichte 2108, Vol. 1, pp. 635-646, Munich, October 2010.
28. Gonzalez-Perez, I., Fuentes, A., Hayasaka, K., Nagamoto, H., "Computerization of the Plunge Shaving Process and its Application for Finishing of Modified Involute Helical Gears", Proceedings of the International Conference on Gears, VDI-Berichte 2108, Vol. 1, pp. 405-416, Munich, October 2010.
29. Iserte, J.L., Sanchez-Marin, F.T., Gonzalez-Perez, I., Fuentes, A., "Analytical Approach Based on Hertz Theory for Contact Stress Analysis of Gear Drives with Localized Bearing Contact", Proceedings of the International Conference on Gears, VDI-Berichte 2108, Vol. 2, pp. 1385-1388, Munich, October 2010.
30. Fuentes, A., Gonzalez-Perez, I., Litvin, F.L., Hayasaka, K., "Computerized Design of Gear Drives with Modified Elliptical Centrodes", Proceedings of ASME 2009 International Design Engineering Technical Conferences (IDETC) - 11th ASME International Power Transmission and Gearing Conference (PTG), Washington, DC, USA, August 30-September 2, 2009.
31. Gonzalez-Perez, I., Fuentes, A., Litvin, F.L., Hayasaka, K., "Computerized Design of Multi-Gear Drives for Function Generation", Proceedings of ASME 2009 International Design Engineering Technical Conferences (IDETC) - 11th ASME International Power Transmission and Gearing Conference (PTG), Washington, DC, USA, August 30-September 2, 2009.
32. Fuentes, A., Gonzalez-Perez, I., Giubertoni, E., "Design of Formate-cut Spiral Bevel Gears of Low Gear Ratio and Extended Life", Proceedings of the XVII National Congress of Mechanical Engineering, Gijon, Asturias (Spain), February 2008 (in Spanish).
33. Gonzalez-Perez, I., Fuentes, A., "Simulation of Meshing and Tooth Contact Analysis of Worm Gear Drives with Improved Reliability", Proceedings of the XVII National Congress of Mechanical Engineering, Gijon, Asturias (Spain), February 2008 (in Spanish).
34. Lewicki, D. G., Woods, R. L., Litvin, F.L., Fuentes, A., "Evaluation of a Low-Noise, Formate Spiral Bevel Gear Set", Proceedings of 2007 ASME International Design Engineering Technical Conferences (IDETC) - 10th ASME International Power Transmission and Gearing Conference (PTG), Las Vegas, Nevada, USA, September 4-7, 2007.



35. Fuentes, A., Gonzalez-Perez, I., Litvin, F.L., Hayasaka, K., Yukishima, K., "Determination of Basic Machine-Tool Settings for Generation of Spiral Bevel Gears from Blank Data", Proceedings of 2007 ASME International Design Engineering Technical Conferences (IDETC) - 10th ASME International Power Transmission and Gearing Conference (PTG), Las Vegas, Nevada, USA, September 4-7, 2007.
36. Gonzalez-Perez, I., Fuentes, A., Litvin, F.L., Hayasaka, K., Yukishima, K., "Application and Investigation of Modified Helical Gears with Several Types of Geometry", Proceedings of 2007 ASME International Design Engineering Technical Conferences (IDETC) - 10th ASME International Power Transmission and Gearing Conference (PTG), Las Vegas, Nevada, USA, September 4-7, 2007.
37. Gonzalez-Perez, I., Fuentes, A., Litvin, F.L., Hayasaka, K., Yukishima, K., "Computerized Design of Worm Gear Drives with Improved Conditions of Meshing and Bearing Contact", Proceedings of 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Illinois, USA, November 5-10, 2006.
38. Fuentes, A., Gonzalez-Perez, I., Litvin, F.L., Hayasaka, K., Yukishima, K., "Design, Manufacture, and Evaluation of Prototypes of Low-Noise High-Endurance Spiral Bevel Gear Drives", Proceedings of IDETC 2005 ASME International Design Engineering Technical Conferences, Long Beach, California, USA, September 2005.
39. Gonzalez-Perez, I., Fuentes, A., Litvin, F.L., Hayasaka, K., Yukishima, K., "Modified Surface Topology of Involute Helical Gears Developed for Improvement of Bearing Contact and Reduction of Transmission Errors", Proceedings of IDETC 2005 ASME International Design Engineering Technical Conferences, Long Beach, California, USA, September 2005.
40. Gonzalez-Perez, I., Fuentes, A., Litvin, F.L., Hayasaka, K., Yukishima, K., "New Topology of Helical Gear Drives with Modified Motion Graph", Proceedings of the International Conference on Gears, VDI-Berichte 1904, Vol. 1, pp. 721-735, Munich, September 2005.
41. Fuentes, A., Gonzalez-Perez, I., "Design of Spiral Bevel Gear Drives Using the Formate-Cut Method of Generation of the Gear", Proceedings of the XVI National Congress of Mechanical Engineering, Leon, Spain, December 15-17, 2004 (in Spanish).
42. Gonzalez-Perez, I., Fuentes, A., "Design and Simulation of Meshing of Low Noise and Improved Bearing Contact Spur and Helical Gear Drives Generated by a Hob", Proceedings of the XVI National Congress of Mechanical Engineering, Leon, Spain, December 15-17, 2004 (in Spanish).
43. Gonzalez-Perez, I., Fuentes, A., "Stress Analysis by the Finite Element Method of Low Noise and Improved Bearing Contact Spur and Helical Gear Drives Generated by a Hob", Proceedings of the XVI National Congress of Mechanical Engineering, Leon, Spain, December 15-17, 2004 (in Spanish).
44. Fuentes, A., Litvin, F.L., Mullins, B.R., Woods, R., Handschuh, R.F., Lewicki, D., "Design, Stress Analysis and Experimental Test of Low-Noise Adjusted Bearing Contact Spiral Bevel Gears", Proceedings of the International Conference on Gears, VDI-Berichte 1665, Vol. 1, pp. 327-340, Munich, March 2002.
45. Pedrero, J.I., Estrems, M., Fuentes, A., "Determination of the Efficiency of Cylindrical Gear Sets", Proceedings of the IV World Congress on Gearing and Power Transmissions, Paris (France), Vol. 1, pp. 297-302, June 1999.
46. Garcia-Masia, C., Fuentes, A., Ruiperez, A., "Computer Modeling of 3D Basic Rack Generated Bevel Gears", Proceeding of the IV World Congress on Gearing and Power Transmissions, Paris (France), Vol. 1, pp. 667-675, June 1999.
47. Estrems, M., Fuentes, A., Pedrero, J.I., "Influence of the Geometric Parameters and Operating Conditions on the Lubrication Regimen of Cylindrical Gears", Proceeding of the III Latin-American Congress of Mechanical Engineering, Cuba, September 1997 (in Spanish).
48. Fuentes, A., Estrems, M., Pedrero, J.I., "Analysis of the Bending Stress for Involute Cylindrical Gear Teeth", Proceeding of the XII National Congress of Mechanical Engineering, Bilbao (Spain),



- February 1997 (in Spanish).
49. Estrems, M., Fuentes, A., Pedrero, J.I., "Study of the Load Sharing Between Involute Spur Gear Teeth", Proceedings of the XII National Congress of Mechanical Engineering, Bilbao (Spain), February 1997, (in Spanish).
 50. Pedrero, J.I., Solano, J., Fuentes, A., Garcia-Masia, C., "CAD System for the Optimization of Two-Stage Gear Sets", Proceedings of the XIII Brazilian Congress and II Latin-American Congress of Mechanical Engineering, Brazil, December 1995 (in Spanish).
 51. Pedrero, J.I., Garcia-Masia, C., Fuentes, A., "Theoretical Approach to Wear Stress Calculation for Involute Gear Teeth", Proceedings of the Ninth World Congress on the Theory of Machines and Mechanisms, Milan (Italy), September 1995.
 52. Pedrero, J.I., Garcia-Masia, C., Fuentes, A., "Optimization of Gear Design by Parametric Analysis", Proceedings of the Gear Transmissions'95 – International Congress, Sofia (Bulgaria), September 1995.
 53. Pedrero, J.I., Fuentes, A., Garcia-Masia, C., "New Model for the Calculation of the Contact Stress on Involute Spur Gear Teeth", Proceedings of the XI National Congress of Mechanical Engineering, Vol. 3, Valencia (Spain), November 1994 (in Spanish).

[Back to top](#)

[Articles in Magazines, Posters, and other Technical Presentations 9](#)

1. Guo, H., Fuentes-Aznar, A., "Research on Face Gear Drives Considering Compensation of Errors of Alignment Caused by Shaft Deflections", Technical Presentation DETC2019-97315, 2019 ASME International Power Transmission and Gearing Conference (PTG), Anaheim, CA, USA, August 18-21, 2019.
2. Fuentes-Aznar, A., Gonzalez-Perez, I., "[Integrating Non-Contact Metrology in the Process of Analysis and Simulation of Gear Drives](#)", [Gear Solutions](#), pp. 29-35, February 2019.
3. Fuentes-Aznar, A., Gonzalez-Perez, I., "[Resistenza di Ingranaggi Cilindrici con Elevato Angolo di Pressione](#)", *Organi di Trasmissione*, pp.24-31, Luglio (July) 2018.
4. Fuentes-Aznar, A., Gonzalez-Perez, I., "[Gear Tooth Strength Analysis of High Pressure Angle Cylindrical Gears](#)", [Gear Solutions](#), pp. 30-38, June 2018.
5. Artoni, A., Guiggiani, M., Ruiz-Orzaez, R., Gonzalez-Perez, I., Fuentes-Aznar, A., "Robust Design of Face-Milled Spiral Bevel Gears for Minimum Noise and Maximum Load Capacity with Stochastic Misalignments", Technical Presentation DETC2017-68487, 2017 ASME International Power Transmission and Gearing Conference (PTG), Cleveland, OH, USA, August 6-9, 2017.
6. Fuentes-Aznar, A., Gonzalez-Perez, I., Pasapula, H. K., "Ingranaggi Conici a Denti Dritti con Profili Ottimizzati", *Organi di Trasmissione*, 2017.
7. Fuentes-Aznar, A., Gonzalez-Perez, I., Pasapula, H. K., "[Computerized Design of Straight Bevel Gears with Optimized Profiles for Forging, Molding, or 3D Printing](#)", *Thermal Processing*, pp. 24-33, March 2017.
8. Fuentes-Aznar, A., "Computational Tools for Advanced Gear Design", 16th Annual University Technology Showcase, Rochester, April 7th, 2016.
9. Fuentes-Aznar, A., "Current Trends in Gear Design Technology", *The Rochester Engineer*, December 2015.

[Back to top](#)

