

# Curriculum Vitae

## **Dr. Raghawendra Pratap Singh Sisodia, PhD, IWE/EWE**

Associate Professor

Institute of Materials Science and Technology,

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**Brief Introduction:** I am currently working as associate professor, full time in the University.

**Research fields:** Power beam welding processes (LASER BEAM WELDING, LASER ARC HYBRID WELDING, ELECTRON BEAM WELDING), GMAW, Advanced high strength steels (S960QL, S960M, DP steels), Al alloys (AA5754-H22, AA6082-T6, AA7075-T6), Pipeline steels (X52, P355NH & L485MB), numerical (SYSWELD) and physical simulation (GLEEBLE 3500), Residual stresses (XRD), Mechanical testings (Tensile, Bending, microhardness, nanoindentation, impact) Fatigue Crack Grow (FCG), Materials Characterization (SEM, EBSD).

## **Work Experiences (Research 5 yrs & Teaching 9.5 yrs)**

1. Associate professor, University of Miskolc, Hungary  
01/09/2022- Present
2. Senior lecturer, University of Miskolc, Miskolc, Hungary
3. Assistant lecturer, University of Miskolc, Miskolc, Hungary
4. Assistant Research Fellow, Institute of Materials Science and Technology
5. Assistant researcher  
Institute of Materials Science and Technology, University of Miskolc, Miskolc, Hungary
6. Assistant Professor (Deptt. of Mechanical Engg.)  
Galgotia College of Engg. & Technology (UPTU), Greater Noida, India
7. Assistant Professor, Deptt. Of Mechanical & Automation Engg.  
Amity University, Noida, India

## **Education and Training**

1. PhD in Mechanical Engineering Sciences (summa cum laude)  
University of Miskolc, Miskolc, Hungary  
07/09/2017 – 08/12/2021  
Dissertation- High energy beam welding of Advanced high strength steels
2. Diploma in International Welding Engineer/European Welding Engineer (IWE/EWE)  
University of Miskolc, Miskolc, Hungary  
Passed with Excellent, average of 4.6/5
3. MSc, Mechanical Engineering (CAD/CAM)  
University of Miskolc, Miskolc, Hungary  
Passed with Excellent and Degree with Distinction, cumulative average of 4.89/5

Received Certificate of Merit, March 2017, The Council of the Faculty of Mechanical Engineering and Informatics, University of Miskolc awards a Silver Medallion of Merit in recognition of outstanding academic achievement and exemplary conduct.

### **Visiting Faculty**

- Within Erasmus faculty mobility program, guest lecture at the University of Oulu, Finland (April 2022)
- Within Erasmus faculty mobility program, guest lecture at the Silesian University of Technology, Gliwice, Poland (October 2022)

### **Professional association**

- Participated in Young Leader's Forum 2021, think.BDPST event organised by Antall József Knowledge Centre in cooperation with the Ministry of Foreign Affairs and Trade of Hungary and supported by the International Visegrad Fund.
- DOSZ (Association of Hungarian PhD and DLA candidates) Ambassador (2021-2022) - Representing Indian PhD researcher in Hungary.
- Delegate from Hungary for Commission C-IV, Power Beam Processes, International Institute of Welding (IIW) which is an international scientific and engineering body for welding, brazing and related technologies on behalf of the Hungarian Welding Association
- Member of Hungarian Welding Society (MAHEG).
- Worked as the First Chairperson of International Alumni Board, University of Miskolc, Hungary.

### **Skills**

#### **1. Language skills**

Hindi- Mother tongue; English- 2<sup>nd</sup> speaking language, C2 level; Hungarian, A1 level; Bhojpuri- Regional Language

#### **2. Organizational skills**

- Worked in several industrial and others research projects at the University
- Good leadership quality as I worked in Industry as Head for Plant Assembly Line, Involved in research activities.
- Capability of handling as a Team Leader in organization for Project accomplishment.

#### **3. Communication and interpersonal skills**

- Organizing committee member in various national and international conferences
- Presented several research works in national and international conferences.
- Worked as Chairperson of International Alumni Board, University of Miskolc, Hungary.
- Done many International Alumni interviews, Hungary.

#### **4. Computer & Technical skills**

- MS office, Mechanical Software (NX, Auto/CAD), Microsoft Visio, Minitab, Numerical simulation software SYSWELD, Basic knowledge of SAP Production Planning
- Working experience in operation of GLEEBLE 3500 Thermophysical simulator, Optical microscope, macro and microhardness equipment's, operation of various welding equipment etc.

#### **5. Other skills**

- Reviewer of best ranked International journals.
- Mentoring skill to give training to group of people on Quality, Production Planning, Project planning or any industrial related aspects.
- Work with research-oriented team for product development, analysis etc
- Independent working on Research Task

## Honours and awards

- Received “Dean’s Commendation award” for the Excellent researcher by the Council of the Faculty of Mechanical Engineering and Informatics, University of Miskolc, 1<sup>st</sup> September 2022.
- Received PhD Scholarship under STIPENDIUM HUNGARICUM SCHOLARSHIP PROGRAM provided by the Ministry of Human Resources of Hungary.
- MSc in Mechanical Engg (CAD/CAM) from University of Miskolc, Hungary under STIPENDIUM HUNGARICUM SCHOLARSHIP PROGRAM provided by the Ministry of Human Resources of Hungary.
- Silver Medal of Academic Merit at the University of Miskolc, Hungary (March 2017)

## Volunteering

- Worked as International Alumni Volunteer, Hungary between 2017- 2021, under the framework of Campus Mundi Program coordinated by the Tempus Public Foundation, Hungary.

## In Projects involved:

### **European co-funded Projects**

1. Thematic Excellence Program (TKP) 2020- 1<sup>st</sup> June 2022- 31<sup>st</sup> August 2022
2. 2020, EFOP-3.6.1-16-2016-00011
3. 2018- 2019, Matra Metal Project (GINOP-2.2.1-15-2017-00035)

### **Industrial R&D projects**

1. 2019-20, Development of welding technology (FGSZ ZRt. A natural gas transmission company, MOL group)
2. 2019, Hungarian State Excellence Program, (NKFIH-846-8:2019)
3. June- July 2021, Higher Education Institutional Excellence Program (FIKP3)

### **International R&D projects**

1. Digital Training for European Welding Inspector (D-EWI), Short-term joint staff training (C 1) on “Developing the skills of VET trainers in implementing and using of the digital e-learning tools”, 4<sup>th</sup>- 6<sup>th</sup> July 2022, Erasmus+ Program - Cooperation Partnerships, Project No.: 2021-I-ROO I-KA220-VET-000028 I75. University of Miskolc, Hungary
2. H2020-NMP-08-2016, LoCoMaTech project (Low-Cost Materials Processing Technologies for Mass Production of Lightweight Vehicles).
3. 2018, RMWF Erasmus+ KA2 project (development of a European guideline and educational materials for risk management in welding fabrication)

## Publications

1. Raghawendra Sisodia, Marcell Gáspár, “**The Influence of Filler Material on Microstructural and Mechanical Properties of Diode Laser Welded DP1000**”, IIW2022 International Conference, 17<sup>th</sup> – 22<sup>nd</sup> July 2022, Tokyo, Japan.
2. Raghawendra Sisodia, Marcell Gáspár, J. Lukács, “**Comparison of fatigue crack growth design curves on GMAW and EBW joints of high strength steels**”, IIW2022 Annual Assembly meeting, C-XIII Fatigue of welded components and structures, Doc-XIII-2941-2022, 17<sup>th</sup> – 21<sup>st</sup> July 2022, Tokyo, Japan
3. Marcell Gáspár, Raghawendra Sisodia, “**The effect of  $t_{8/5}$  cooling time on HAZ properties of different pipeline steel grades**”, IIW2022 Annual Assembly meeting, C-IX Behavior of Metals Subjected to Welding, Doc-IX-L-1263-2022, 20<sup>th</sup> – 21<sup>st</sup> July 2022, Tokyo, Japan.
4. Raghawendra P.S. Sisodia and Marcell Gáspár “**Effect of Post Weld Heat Treatment on diode Laser-Welded DP1000 Steel with matching filler material**” Doc.I-1488-2022 / IV- 1493 -2022 /XII-2505-2022, Joint Intermediate Meeting of IIW Comm. I, IV and XII, March 21- 22, 2022.
5. Marcell Gáspár, Raghawendra Sisodia, “**Physical simulation based HAZ characterization of different pipeline steel grades**”, IIW2022 International Conference, 17<sup>th</sup> – 22<sup>nd</sup> July 2022, Tokyo, Japan.

6. Raghawendra P.S. Sisodia, and Marcell Gáspár: **An Approach to Assessing S960QL Steel Welded Joints Using EBW and GMAW**, *Metals* 12, no. 4: 678. <https://doi.org/10.3390/met12040678>, Q1, IF= 2.35
7. Raghawendra P.S. Sisodia, and Marcell Gáspár: **Experimental assessment of microstructure and mechanical properties of electron beam welded S960M high strength structural steel**, *Manufacturing Letters*, Vol. 29, pp. 108-112, 2021, <https://doi.org/10.1016/j.mfglet.2021.05.004>, Q1, IF= 3.53
8. Raghawendra P.S. Sisodia, Marcell Gáspár, Máté Sepsi & Valeria Mertinger, “**Comparative evaluation of residual stresses in vacuum electron beam welded high strength steel S960QL and S960 M butt joints**” *Vacuum*, vol. 184, <https://doi.org/10.1016/j.vacuum.2020.109931>, Q1, IF=2.906
9. Sisodia, R.P., Gáspár, M. & Draskóczy, L. “**Effect of post-weld heat treatment on microstructure and mechanical properties of DP800 and DP1200 high-strength steel butt-welded joints using diode laser beam welding.**” *Weld World* (2020), Vol. 64, pp. pages671–681. <https://doi.org/10.1007/s40194-020-00867-6>, Q1, IF=1.589
10. R.P.S. Sisodia, M. Gáspár: **Investigation of Metallurgical and Mechanical Properties of Laser Beam Welded and Post-weld Heat Treated DP1400 Steel**, *Journal of Materials Engineering and Performance*. (2021), Vol.30, pp. 1703–1710. <https://doi.org/10.1007/s11665-021-05469-x>, Q2, IF=1.652
11. Sisodia, R.P.S., Gáspár, M. “**Physical Simulation-Based Characterization of HAZ Properties in Steels. Part 1. High-Strength Steels and Their Hardness Profiling.**” *Strength Mater* 51, 490–499 (2019). <https://doi.org/10.1007/s11223-019-00094-5>, Q3, IF=0.592
12. Gáspár, M., Sisodia, R.P.S. & Dobosy, A. “**Physical Simulation-Based Characterization of HAZ Properties in Steels. Part 2. Dual-Phase Steels.**” *Strength Mater* 51, 805–815 (2019). <https://doi.org/10.1007/s11223-019-00128-y>, Q3, IF=0.592
13. Raghawendra P.S. Sisodia, Marcell Gáspár, Máté Sepsi, Valéria Mertinger, “**Dataset on full width at half maximum of residual stress measurement of electron beam welded high strength structural steels (S960QL and S960M) by X-ray diffraction method**”, *Data in Brief*, 2021, Vol 38, <https://doi.org/10.1016/j.dib.2021.107341>. Q4
14. Sisodia, R. P. S., Gáspár, M., Fodor, B., & Draskóczy, L. (2020). “**Simulation and Experimental Based Analysis of the Laser Beam Welding of DP Steels.**” *Advanced Materials Research*, 1157, 73–82. <https://doi.org/10.4028/www.scientific.net/amr.1157.73>. Q4
15. Marcell Gáspár, Raghawendra P. S. Sisodia, “**Challenges and Possibilities In The Welding Of Advanced High Strength Steels**”, 3rd Biennial International Conference on Future Learning Aspects of Mechanical Engineering (FLAME -2022), Noida, India.
16. Gáspár, M., Gyura, L., Sisodia, R.P.S. (2023). **The Effect of Multiple Flame Straightening on High-Strength Steels Applied in Vehicle Industry**. In: Jármái, K., Cservenák, Á. (eds) *Vehicle and Automotive Engineering 4. VAE 2022. Lecture Notes in Mechanical Engineering*. Springer, Cham. [https://doi.org/10.1007/978-3-031-15211-5\\_74](https://doi.org/10.1007/978-3-031-15211-5_74)
17. M Gáspár and R. Sisodia, “**Improving the HAZ toughness of Q+T high strength steels by post weld heat treatment**”, 11th Hungarian Conference on Materials Science, IOP Conf. Series: Materials Science and Engineering 426 (2018) 012012, <https://doi.org/10.1088/1757-899X/426/1/012012>
18. R. P. S. Sisodia & M. Gáspár “**Innovative and efficient production of welded body parts from 6082-T6 aluminium alloy**” *Proceedings of the 1st International Conference on Engineering Solutions for Sustainable Development (ICESSD)*, 3-4 October 2019, Miskolc, Hungary. *Solutions for Sustainable Development – Szita, Jármái & Voith (eds.)*, © 2020 Taylor & Francis Group, London, ISBN 978-0-367-42425-1, <https://doi.org/10.1201/9780367824037-41>
19. Raghawendra P.S. Sisodia<sup>1</sup>, Marcell Gáspár<sup>2</sup>, Nouredine Guellouh<sup>3</sup>, “**HAZ characterization of automotive DP steels by physical simulation**”, *International Journal of Engineering and Management Sciences (IJEMS)* Vol. 4. (2019). No. 1, page 478-487, <https://doi.org/10.21791/IJEMS.2019.1.59>.
20. Raghawendra P.S. Sisodia and Marcell Gáspár “**Electron beam welding of S960QL high strength steel - Microstructural evolution & Mechanical properties**” **Doc.IV-1460-20**, IIW Annual assembly online meeting, C-IV commission "Power Beam Processes", 15<sup>th</sup> July 2020.
21. Raghawendra P.S. Sisodia & Marcell Gáspár, “**Investigation of electron beam welding of AHSS by physical and numerical simulation**” *MultiScience-XXXIII. microCAD International Multidisciplinary Scientific Conference*, Miskolc, Hungary 23-24 May 2019, <https://doi.org/10.26649/musci.2019.051>
22. Raghawendra P.S. Sisodia, Judit Kovács, “**Comparative HAZ softening analysis of three different automotive aluminium alloys by physical simulation**”, *IIW Conference*, 7-12 July 2019, Bratislava, Slovakia.
23. Marcell Gáspár<sup>a</sup>, Raghawendra Sisodia<sup>b</sup>, Judit Kovács<sup>c</sup>, Gréta Németh<sup>d</sup> “**New possibilities for compensating the HAZ softening of the 7075-T6 aluminium alloy**”, *IIW Conference*, 7-12 July 2019, Bratislava, Slovakia.
24. Gáspár, M., R. P. S. Sisodia: “**Weldability analysis of Q+T and TMCP high strength steels by physical simulation**”, Pages B166-B170, 70<sup>th</sup> IIW Annual Assembly and International Conference, Shanghai, China, June 29-30, 2017.

25. Sisodia, Pratap Singh, Raghawendra, Berrah, Nora, 2016 "**Analysing HAZ softening of quenched and tempered steel by physical simulation**", (7-8 April 2016), Inter Talent UNIDEB Conference, University of Debrecen, Hungary.
26. Raghawendra P.S. Sisodia<sup>1</sup>, Marcell Gáspár<sup>2</sup>, Walid Gacem<sup>3</sup>, "**Investigation of HAZ softening of AA6082-T6 automotive aluminium alloy by physical simulation**" MultiScience-XXXII. microCAD International Multidisciplinary Scientific Conference, Miskolc, Hungary 5-6 September 2018, ISBN: 978-963-358-162-9.
27. Noureddine Guellouh<sup>1</sup>, Raghawendra P. S. Sisodia<sup>2</sup>, Zoltán Szamosi<sup>3</sup> "**The weldability of high strength steels**" MultiScience-XXXII. microCAD International Multidisciplinary Scientific Conference, Miskolc, Hungary 5-6 September 2018, ISBN: 978-963-358-162-9.
28. M. Gáspár, R.P.S. Sisodia, I. Timcsák: **Összehasonlító elemzés az elektronsugaras és a huzalelektrodás védőgázos ívhegesztés alkalmazásáról nemesített nagyszilárdságú acéloknál/Comparative study about the electron beam and gas metal arc welding of quenched and tempered high strength steels**, Proceedings of the XXX. Jubilee International Welding Conference, pp. 53-58, 2021. ISBN 9786156260000
29. R.P.S. Sisodia, M. Gáspár: **Nagyszilárdságú acélok elektronsugaras hegesztett kötéseinek fáradásos repedés terjedéssel szembeni ellenállása/Fatigue crack growth resistance of electron beam welded joints from high strength steels**, Multidiszciplináris tudományok, Vol. 11 (4), pp. 318-325, 2021. <https://doi.org/10.35925/j.multi.2021.4.36>.
30. Gáspár Marcell, Raghawendra P. S. Sisodia, Dobosy Ádám, Németh Alexandra "**Csőtávvezetékben alkalmazott acélminőségek hegesztésekor kialakuló hőhatásövezet tulajdonságainak elemzése fizikai szimulációval**" /"Analysis of heat zone properties during welding of steel grades used in pipelines by physical simulation", Hegesztés Technika, Tudományos Publikációk, XXXI évfolyam 2020/1 pp. 83-91.
31. Kovács, Judit; Raghawendra, P. S. Sisodia; Gáspár, Marcell, "**Hőhatásövezeti zónák fizikai szimulációja nagyszilárdságú szerkezeti acélok esetén**"/, "Physical simulation of heat affected zones in the case of high-strength structural steels" Multidiszciplináris tudományok: A Miskolci Egyetem, Közleménye 9 : 4 pp. 152-166. , 15 p. (2019), <https://doi.org/10.35925/j.multi.2019.4.13>.
32. Kovács Judit<sup>1</sup>, Németh Gréta<sup>2</sup>, Raghawendra Sisodia<sup>3</sup>, Gáspár Marcell<sup>4</sup>, Jámber Péter<sup>5</sup> "**Hőhatásövezeti tulajdonságok fizikai szimulációra alapozott vizsgálata 7075-t6 autóiipari alumíniumötvözet esetén**" / "Investigation of heat affected zone properties based on physical simulation for 7075-t6 automotive aluminum alloy" Hegesztés Technika, XXX. Evfolyam, 2019.1. szám, pp.47-52.
33. Németh Gréta<sup>1</sup>, Kovács Judit<sup>1</sup>, Raghawendra Sisodia<sup>1</sup>, Gáspár Marcell<sup>14</sup>, Jámber Péter<sup>1</sup> "**Hőhatásövezeti tulajdonságok fizikai szimulációra alapozott vizsgálata különböző szilárdságú autói ipari alumínium ötvözetek esetén**" / "Characteristics of heat affected zone of different aluminium alloys having different stress conditions and used in the car industry and for testing a special physical simulation was used" Hegesztéstechnika, XXX. Evfolyam, 2019.2. szám, pp. 41-48.
34. M. Gáspár, A. Balogh, G. Bodorkós, Á. Dobosy, A. Németh, R.P.S. Sisodia, I. Török: **Kutatási eredmények a nagyszilárdságú acélok és alumíniumötvözetek hegesztése területén/Research results in the welding of high strength steels and aluminium alloys**, GÉP, Vol. 71 (5-6), pp. 59-66, 2020.
35. V. Gál, M. Gáspár, J. Kovács, Z. Lukács, R. Sisodia: **Anyagtechnológiai kutatások az Innovatív Anyagtechnológiák Tudományos Műhelyben/Research on materials technologies within the Innovative Materials Technologies**, Scientific Workshop, Multidiszciplináris tudományok, Vol. 11. (2), pp. 80-86. 2021. <https://doi.org/10.35925/j.multi.2021.2.11>.
36. Draskóczy, László; Gáspár, Marcell; Molnár, András; Raghawendra, Sisodia "**Dióda lézerek alkalmazási lehetőségei a vékonylemezek hegesztésében és a termikus szórásban**" (2021) Nagy Energiásűrségű Kötéstechnológia Anket, Magyar Hegesztési Egyesület, Óbudai Egyetem, 2021. február 25.
37. Gáspár Marcell, Raghawendra P. S. Sisodia, "**Nagyszilárdságú Acél Finomlemezek Hegesztése És Utóhőkezelése Diódalézerek Alkalmazásával**", Hegesztés Technika, Evfolyam, 2022.

## Conferences attended

1. Marcell Gáspár, László Gyura and Raghawendra P. S. Sisodia, "**The effect of multiple flame straightening on high-strength steels applied in vehicle industry**", 4th International Conference on Vehicle and Automotive Engineering, 8-9<sup>th</sup> September 2022, Miskolc, Hungary.
2. Raghawendra Sisodia, Erika Hodulová, Sahul Miroslav, Marcell Gáspár, "Influence of PWHT on S960QL high strength structural steel electron beam welded joint", IIW2022 Annual Assembly meeting, C-IV Power Beam Process, Doc-IV-1514-2022, 20<sup>th</sup> – 21<sup>nd</sup> July 2022, Tokyo, Japan.
3. Raghawendra Sisodia, Marcell Gáspár, "The Influence Of Filler Material On Microstructural And Mechanical Properties Of Diode Laser Welded DP1000", IIW2022 International Conference, 17<sup>th</sup> – 22<sup>nd</sup> July 2022, Tokyo, Japan.

4. R P S Sisodia, M Gáspár and E Hodúlová, **“Effect of beam oscillation and focusing on the electron beam welded 1100M high strength structural steel joint”**, The 14<sup>th</sup> International Conference on Electron Beam Technologies, EBT 2022, 26 June 1 July 2022, Varna, Bulgaria.
5. Raghawendra P.S. Sisodia and Marcell Gáspár **“Gáspár Marcell, Raghawendra P. S. Sisodia, Draskóczy László: Autóipari DP acél finomlemezek lézersugaras hegesztése és utókezelése”**, XXXI. Nemzetközi Hegesztési Konferencia, Kecskemét, 2022. május 19-21.
6. Raghawendra P.S. Sisodia and Marcell Gáspár **“Effect of Post Weld Heat Treatment on diode Laser Welded DP1000 Steel with matching filler material”** Doc.I-1488-2022 / IV- 1493 -2022 /XII-2505-2022, Joint Intermediate Meeting of IIW Comm. I, IV and XII, March 21- 22, 2022.
7. Raghawendra P.S. Sisodia and Marcell Gáspár **“Electron beam welding of S960QL high strength steel - Microstructural evolution & Mechanical properties”** Doc.IV-1460-20, IIW Annual assembly online meeting, C-IV commission-Power Beam Process, 15th July 2020.
8. Raghawendra P.S. Sisodia, Marcell Gáspár, László Draskóczy **“Effect of post-weld heat treatment on microstructure and mechanical properties of DP800 & DP1200 high strength steel butt welded joints using diode laser beam welding”** Commission IV, Doc.IV-1443-19, IIW Conference, 7-12 July 2019, Bratislava, Slovakia.
9. Raghawendra P. S. Sisodia, Judit Kovács, **“Comparative HAZ softening analysis of three different automotive aluminium alloys by physical simulation”**, IIW Conference, 7-12 July 2019, Bratislava, Slovakia.
10. Raghawendra P.S. Sisodia, Marcell Gáspár, Walid Gacem, **“Investigation of HAZ softening of AA6082-T6 automotive aluminium alloy by physical simulation”** MultiScience-XXXII. microCAD International Multidisciplinary Scientific Conference, Miskolc, Hungary 5-6 September 2018.
11. Sisodia R.P.S., Gáspár M., Lukács J. **“Analysing the EB welding of high strength steels by Numerical and physical simulation”**, 29th International welding conference, 24-26th May 2018, Miskolc, Hungary
12. Raghawendra P.S. Sisodia, Marcell Gáspár, Noureddine Guellouh, **“HAZ characterization of automotive DP steels by physical simulation”**, 6th-ISCAME, Faculty of Engineering, University of Debrecen, Debrecen, Hungary 11-12 October 2018.
13. Participated in the Intermediate Meeting of the IIW Commission for Resistance Welding, Solid State Welding and Allied Processes(C-III),6-7th February 2017.
14. Attended Welding session of the VAE conference at University of Miskolc, Hungary, 17th -18th November 2016.
15. Sisodia, Pratap Singh, Raghawendra, Berrah, Nora, 2016 **“Analysing HAZ softening of quenched and tempered steel by physical simulation”** (7-8 April 2016), Inter Talent UNIDEB Conference, University of Debrecen, Hungary