FACULTY PROFILE

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Professional Qualification: Ph.D.

Qualification	Title	Organization/ Institute	Year
B.Tech.	Bachelor of Technology	Uttar Pradesh Technical University, Lucknow, U.P. / MIET Meerut, U.P.	2006
M.E	Master of Engineering	Birla Institute of Technology, Mesra, Ranchi, Jharkhand	2008
Ph.D.	Doctor of Philosophy	University of Miskolc, Hungary	2021

Publications (SCI/ESCI and Scopus):

1. **Pal, M. K.**, Gergely, G., Gácsi, Z., Growth Kinetics and IMCs layer analysis of SAC305 solder with the reinforcement of SiC during the isothermal aging condition, **J. Mater. Res. Technol.,** 24 (2023) 8320-8331. **https://doi.org/10.1016/j.jmrt.2023.05.091**
2. **Pal, M. K.**, Gergely, G., Horváth, D. K., & Gácsi, Z., Characterization of the interface between ceramics reinforcement and lead-free solder matrix, **Surf. Interfaces**, 20, (2020), 100576. **https://doi.org/10.1016/j.surfin.2020.100576**
3. Pethő D, Kurusta T, Koncz-Horváth D, Kristály F, Mikó T, **Pal M. K,** Gácsi Z., Morphological and mechanical evolution of α-Al_2O_3 reinforced Mo-Cu alloy obtained by planetary ball milling, **J. Manuf. Process**, 103 (2023)1-10. **https://doi.org/10.1016/j.jmapro.2023.08.034**
4. **Pal, M. K.**, Gergely, G., Horváth, D. K., & Gácsi, Z., Investigation of microstructure and

wetting behavior of Sn-3.0Ag-0.5Cu (SAC305) lead-free solder with additions of 1.0 wt.% SiC on copper substrate, **Intermetallics**, 128, (2021), 106991. https://doi.org/10.1016/j.intermet.2020.106991

5. **Pal, M. K**., Bajaj, V., Nucleation and location of Kirkendall voids at the Tin-based solder/copper joint: a review, **Adv. Eng. Mater.,** 25 (9) (2023) 2300671. https://doi.org/10.1002/adem.202300671
6. G. G. Kiss, S. R. Kovács, T. N. Szegedi, P. Mohr, F. Montes, A. Arcones, Á. Tóth, A. Németh, E. Szilágyi, **M. Kumar Pal**, et. al, Low-energy Measurement of the 86Kr(*α*, *n*)89Sr Reaction Cross Section and Its Impact on Weak *R*-process Nucleosynthesis, **The Astrophysical Journal**, 988:170, 2025. https://doi.org/10.3847/1538-4357/ade4c9
7. **Pal, M. K.**, Gergely, G., Horváth, D. K., & Gácsi, Z., Distribution and microstructure analysis of ceramic particles in the lead-free solder matrix, **Cryst. Res. Technol.**, 25(10), (2020), 2000123. https://doi.org/10.1002/crat.202000123
8. Kovács, S. R., Szegedi, T. N., Tóth, Á., Németh, A., **Pal, M. K.**, Szilágyi, E., et al. "Measurement of β-particles to determine cross sections relevant to the weak r-process" Nucl. Instrum. Methods Phys. Res. A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1073 (2025): 170272. https://doi.org/10.1016/j.nima.2025.170272
9. E. Szilágyi, **M. K. Pal**, E. Kótai, Z. Zolnai, I. Bányász, Fluence evolution of defects in α-SiO_2 determined by ionoluminescence, Nucl. Instrum. Methods Phys. Res. B: Beam Interact. Mater. at., 555 (2024), 165470. https://doi.org/10.1016/j.nimb.2024.165470
10. **Pal, M. K**., Sandhu, S. S., Kalia, R., & Ghosh, A., Identification of Optimum Composition and Mechanical Properties of Al-Ni Metal Matrix Composite, **Journal of Minerals and Materials Characterization and Engineering**, 3(4), (2015), 326. https://doi.org/10.4236/jmmce.2015.34035
11. Varanasi, D, **Pal, M. K,** Density and dynamic viscosity of Sn, Sn–Ag and Sn–Ag–Cu liquid lead-free solder alloys, **Powder metal. Met. Ceram.**, 60(7-8), (2021), 504-512. https://doi.org/10.1007/s11106-021-00262-w
12. **Pal, M. K**., Gergely, G., Horváth, D. K., & Gácsi, Z., Investigation of the electroless nickel-plated SiC particles in SAC305 solder matrix, **Powder metal. Met. Ceram.**, 58(9-10), (2020), 529-537. https://doi.org/10.1007/s11106-020-00107-y
13. **Pal, M. K**., Vikram, A., Bajaj, V., Enhanced microstructure and mechanical properties of

SiC particle reinforced aluminium alloy composite materials, **Acta Metall. Slovaca**, 25(4), (2019), 253-258. **https://doi.org/10.12776/ams.v25i4.1359**

14. **Pal, M. K**., Gergely, G., Horváth, D. K., & Gácsi, Z., Influence of ceramic particles on the microstructure and mechanical properties of SAC305 lead-free soldering material, **Arch. Metall. Mater**. 64(2), (2019), 603-606. **https://doi.org/10.24425/amm.2019.127585.**
15. **Pal, M. K.**, Gergely, G., Horváth, D. K., & Gácsi Z, Microstructural investigations and mechanical properties of pure lead-free (Sn–3.0Ag–0.5Cu and Sn–4.0Ag–0.5Cu) solder alloy, **Metall. Mater. Eng.**, 24(1), (2018), 27-36. **https://doi.org/10.30544/344**

Patent:

Awards and Achievements:

Work Experience: 11y 3m

Professional Memberships: