

Name: Ilona Müllerová

Nationality: Czech Republic

Institution: Institute of Scientific Instruments of the Czech Academy of Sciences

Activities:

Helped to conclude an inter-university academic exchange agreement

Cooperated in the establishment of University of Toyama Liaison Office

Cooperated in the selection of Japanese Government Scholarship students

Accepted faculty members and students from Universities of Toyama

Organized or organized common conferences Teaching

Ilona Müllerová, Cooperation with University of Toyama, prof. Kenji Matsuda, up to March 2024

Publications

LEE, S., WATANABE, S., TSUCHIYA, T., MIKMEKOVÁ, Š., MÜLLEROVÁ, I., ONO, Y., TAKAGUCHI, Y., IKENO, S., MATSUDA, K. Fabrication of Al-Based Composite Extruded Plates Containing Cellulose Nanofibers and Their Microstructure and Mechanical Properties. *Materials Transactions*. 2022, **63**(11), 1590-1596. ISSN 1345-9678. E-ISSN 1347-5320. Dostupné z: [doi: 10.2320/matertrans.MT-M2022107](https://doi.org/10.2320/matertrans.MT-M2022107).

MIKMEKOVÁ, Š., MATSUDA, K., WATANABE, K., IKENO, S., MÜLLEROVÁ, I., FRANK, L. FIB Induced Damage Examined with the Low Energy SEM. *Materials Transactions*. 2011, **52**(3), 292-296. ISSN 1345-9678. E-ISSN 1347-5320. Dostupné z: [doi: 10.2320/matertrans.MB201005](https://doi.org/10.2320/matertrans.MB201005)

FRANK, L., MÜLLEROVÁ, I., MATSUDA, K., IKENO, S. Cathode Lens Mode of the SEM in Materials Science Applications. *Materials Transactions*. 2007, **48**(5), 944-948. ISSN 1345-9678. E-ISSN 1347-5320. Dostupné z: [doi: 10.2320/matertrans.48.944](https://doi.org/10.2320/matertrans.48.944)

MÜLLEROVÁ, I., MATSUDA, K., HRNČÍŘÍK, P., FRANK, L. Enhancement of SEM to scanning LEEM. *Surface Science*. 2007, **601**(20), 4768-4773. ISSN 0039-6028. E-ISSN 1879-2758. Dostupné z: [doi: 10.1016/j.susc.2007.05.042](https://doi.org/10.1016/j.susc.2007.05.042)

MATSUDA, K., ISHIDA, Y., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Cube-phase in excess Hg-type Al-Mg-Si alloy studied by EFTEM. *Journal of Materials Science*. 2006, **41**(9), 2605-2610. ISSN 0022-2461. E-ISSN 1573-4803. Dostupné z: [doi: 10.1007/s10853-006-7819-6](https://doi.org/10.1007/s10853-006-7819-6)

MATSUDA, K., MATSUKI, T., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Morphology of Spinels and Al₂O₃ Particles in an Al₂O₃/Al-Mg-Si Composite Material Revealed by Scanning Low Energy Electron Microscopy. *Materials Transactions*. 2006, **47**(7), 1815-1820. ISSN 1345-9678. E-ISSN 1347-5320. Dostupné z: [doi: 10.2320/matertrans.47.1815](https://doi.org/10.2320/matertrans.47.1815)

MATSUDA, K., IKENO, S., MÜLLEROVÁ, I., FRANK, L. The potential of the scanning low energy electron microscopy for the examination of aluminum based alloys and composites. *Journal of Electron Microscopy*. 2005, **54**(2), 109-117. ISSN 0022-0744. Dostupné z: [doi: 10.1093/jmicro/dfi030](https://doi.org/10.1093/jmicro/dfi030)

LEE, S., KAWAMUKAI, D., HISHINUMA, Y., TSUCHIYA, T., NISHIMURA, K., AIDA, T., KIKUCHI, A., MIKMEKOVÁ, Š., TANIGUCHI, H., IKENO, S., MATSUDA, K. Effect of Ti Addition on Microstructure of Superconducting Nb₃Sn Wires Prepared Using Cu-based Ternary Alloys. ISSN N. *Journal of Japan Institute of Copper*. 2019, č. 1, 77-81. ISSN 2435-872X. E-ISSN 1347-7234.

MATSUDA, K., MÜLLEROVÁ, I., FRANK, L., KAWABATA, T., UETANI, Y., IKENO, S. LEEM Observation of alpha-Plates in Cu-Zn Alloy. *Journal of the JRICu*. 2005, **44**(1), 44-49.

MATSUDA, K., ISHIDA, Y., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Analysis of chemical composition of the cube-shaped phase in the Al-Mg-Si alloy by EFTEM and SLEEM. *Microscopy and Microanalysis*. 2005, **11**(Suppl. 2), 1856-1857. ISSN 1431-9276. E-ISSN 1435-8115. Dostupné z: [doi: 10.1017/S1431927605504513](https://doi.org/10.1017/S1431927605504513)

FRANK, L., MATSUDA, K., HRNČÍŘÍK, P., MÜLLEROVÁ, I. Low Energy Contrast of Metal Matrix Composite in SEM. *Microscopy and Microanalysis*. 2003, **9**(Sup. 3), 328 - 329. ISSN 1431-9276. E-ISSN

Conferences

HIDA, S., MIKMEKOVÁ, Š., MATSUDA, K., IKENO, S. Observation of large Equilibrium Phase of Al-Mg-Si Alloys. In: *Materials Science Forum*. Vol. 794-796. Durnten-Zurich: Trans Tech Publications, 2014, s. 977-980. ISBN 978-3-03835-120-7. ISSN 0255-5476. Dostupné z: [doi:10.4028/www.scientific.net/MSF.794-796.977](https://doi.org/10.4028/www.scientific.net/MSF.794-796.977)

LIGAS, A., HIDA, S., MATSUDA, K., MIKMEKOVÁ, Š. Characterization of .beta.-phase in Al-Mg-Si alloys by SLEEM and STLEEM techniques. In: *18th International Microscopy Congres. Proceedings*. Praha: Czechoslovak Microscopy Society, 2014. ISBN 978-80-260-6720-7.

MÜLLEROVÁ, I., MIKMEKOVÁ, Š., MATSUDA, K., MIKMEKOVÁ, E., IKENO, S., SHIOJIRI, M. SLEEM and its Applications in Material Research. In: *Coneference Proceedings APMC-10, ICONN 2012 and ACMM-22*. Wembley: EECW Pty Ltd, 2012, 409: 1-2. ISBN 978-1-74052-245-8.

POKORNÁ, Z., MIKMEKOVÁ, Š., MATSUDA, K., MÜLLEROVÁ, I., FRANK, L. Backscattered electrons in examination of materials. In: *Coneference Proceedings APMC-10, ICONN 2012 and ACMM-22*. Wembley: EECW Pty Ltd, 2012, 940:1-2. ISBN 978-1-74052-245-8.

MATSUDA, K., MIZUTANI, M., NISHIMURA, K., KAWABATA, T., HISHINUMA, Y., AOYAMA, S., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Superconductive property and microstructure of MgB₂/Al composite materials. In: MIKA, F., ed. *Proceedings of the 12th International Seminar on Recent Trends in Charged Particle Optics and Surface Physics Instrumentation*. Brno: Institute of Scientific Instruments AS CR, v.v.i, 2010, s. 33-34. ISBN 978-80-254-6842-5.

MIKMEKOVÁ, Š., MATSUDA, K., WATANABE, K., MIZUTANI, M., NARUKAWA, Y., MÜLLEROVÁ, I., FRANK, L. Scanning Low Energy Electron Microscopy - A PowerfuleTool for Materials Science. In: *Proceedings of 5th Japan-China-Norway Cooperative Symposium on Nanostructure of Advanced Materials and Nanotechnology*. Toyama: University of Toyama, 2010, s. 77-78. ISBN 978-4-9903248-2-7.

MIZUTANI, M., MATSUDA, K., IKENO, S., NASHIMURA, K., MÜLLEROVÁ, I., FRANK, L. Effect of the Matrix on Superconductive Characteristic of the MgB₂ Composite Material. In: POKORNÁ, Zuzana, MIKA, Filip, eds. *Proceedings of the 4th Czech-Japan-China Cooperative Symposium on Nanostructure of Advanced Materials and Nanotechnology (CJCS'09)*. Brno: ISI AS CR, 2009, s. 20. ISBN 978-80-254-4535-8.

MÜLLEROVÁ, I., MATSUDA, K., HORIBA, K., MIKMEKOVÁ, Š., FRANK, L. Orientation of Grains in the Al-Mg-Si-Mn Alloy by Scanning Low Energy Electron Microscopy. In: POKORNÁ, Zuzana, MIKA, Filip, eds. *Proceedings of the 4th Czech-Japan-China Cooperative Symposium on Nanostructure of Advanced Materials and Nanotechnology (CJCS'09)*. Brno: ISI AS CR, 2009, s. 21. ISBN 978-80-254-4535-8.

MATSUDA, K., NISHIMURA, K., IKENO, S., MORI, K., AOYAMA, S., YABUMOTO, Y., HISHINUMA, Y., MÜLLEROVÁ, I., FRANK, L., YURCHENKO, V. V., JOHANSEN, T. H. Fabrication of extruded wire of MgB₂/Al composite material and its superconducting property and microstructure. *Journal of Physics: Conference Series*. 2008, **97**(1), 012230. ISSN 1742-6588. E-ISSN 1742-6596.

MÜLLEROVÁ, I., MATSUDA, K., FRANK, L. Low Energy Electron Microscopy in Materials Science. In: MIKA, Filip, ed. *Proceedings of the 11th International Seminar on Recent Trends in Charged Particle Optics and Surface Physics Instrumentation*. Brno: Institute of Scientific Instruments AS CR, v.v.i, 2008, s. 85-86. ISBN 978-80-254-0905-3.

IKENO, S., MATSUDA, K., MÜLLEROVÁ, I., FRANK, L. SLEEM study of MgAl₂O₄ at interface between Al₂O₃ and matrix in Al₂O₃/Al alloy composite materials. *Materials Science Forum*. 2007, 539-543(-), 779-784. ISSN 0255-5476.

MATSUDA, K., KAWABATA, T., UETANI, Y., IKENO, S., MÜLLEROVÁ, I., FRANK, L. Study of Microstructures in Al-based Composite Materials. In: NEBESÁŘOVÁ, Jana, HOZÁK, Pavel, eds. *Proceedings of the 8th Multinational Congress on Microscopy*. Prague: Czechoslovak Microscopy Society, 2007, s. 185-188. ISBN 978-80-239-9397-4.

MÜLLEROVÁ, I., FRANK, L., MATSUDA, K. Parallel Acquisition of the Angular Distribution of BSE in SEM. In: NEBESÁŘOVÁ, Jana, HOZÁK, Pavel, eds. *Proceedings of the 8th Multinational Congress on Microscopy*. Prague: Czechoslovak Microscopy Society, 2007, s. 27-28. ISBN 978-80-239-9397-4.

MATSUDA, K., IKENO, S., MÜLLEROVÁ, I., FRANK, L. Application of SLEEM for Observation of Al based Composite Materials. In: *The 5th International Conference on LEEM/PEEM*. Himeji: JSRRI, 2006, s. 214.

MATSUDA, K., MOROBAYASHI, M., IKENO, S., MÜLLEROVÁ, I., FRANK, L. SEM Observation of Al Alloy Based Composite Materials by Low Energy Accelerated Electron Detector. In: *Collected Abstracts of the 2006 Autumn Meeting of The Japan Institute of Metals*. Niigata: Japan Institute of Metals, 2006, S1:4. ISSN 1342-5730.

MATSUDA, K., ISHIDA, Y., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Chemical Analysis of the Cube Phase in Al-Mg-Si Alloy by EFTEM. In: *PTM - Solid-Solid Phase Transformations in Inorganic Materials 2005*. Warrendale, PA: TMS, 2005, s. 371-376. ISBN 0-87339-608-1.

MATSUDA, K., KAJIKAWA, M., NAKAMURA, Y., FRANK, L., MÜLLEROVÁ, I., ITOH, S., AKATSU, M., UETANI, Y., IKENO, S. Application of SLEEM for Morphology of Alpha-Phase in Cu-Zn-Si Alloy. In: *Proceedings of the 8th Asia-Pacific Conference on Electron Microscopy*. Kanazawa: 8APEM Publication Committee, 2004, s. 823-824. ISBN 4-9902106-0-3.

MATSUDA, K., MATSUKI, T., FRANK, L., MÜLLEROVÁ, I., ITOH, S., AKATSU, M., UETANI, Y., IKENO, S. Morphology of MgAl₂O₄ at interface between Al₂O₃ and matrix in oxide particles / Al alloy composite materials. In: *EMC 2004 - Proceedings of the 13th European Microscopy Congress. Materials Sciences*. Vol. 2. Liege: Belgian Society for Microscopy, 2004, s. 627-628.

MATSUDA, K., KAJIKAWA, M., FRANK, L., MÜLLEROVÁ, I., KAWABATA, T., UETANI, Y., IKENO, S. Observation of alpha-phase in Cu-Zn alloy by SLEEM. In: *Proceedings of the 44th Annual meeting of Japan Copper and Brass Association*. Kisarazu: Japan Copper and Brass Association, 2004, s. 11 - 12.

MATSUDA, K., MATSUKI, T., FRANK, L., MÜLLEROVÁ, I., ITOH, S., AKATSU, M., UETANI, Y., IKENO, S. Scanning Low Energy Electron Microscope Applications for Microstructure of Al₂O₃/Al-Mg-Si Alloy

Matrix Composite Material. In: *Proceedings of the 8th Asia-Pacific Conference on Electron Microscopy*. Kanazawa: 8APEM Publication Committee, 2004, s. 779-780. ISBN 4-9902106-0-3.

MATSUKI, T., MATSUDA, K., FRANK, L., MÜLLEROVÁ, I., UETANI, Y., IKENO, S. Observation of products on particle/matrix interface in Al₂O₃/Al-Mg-Si alloy base composite. In: *Proceedings of the 106th Conference of Japan Institute of Light Metals*. Sendai: Japan Institute of Light Metals, 2004, s. 395 - 196.

MATSUKI, T., MATSUDA, K., FRANK, L., MÜLLEROVÁ, I., UETANI, Y., IKENO, S. Microstructure around Al₂O₃ particle in Al₂O₃ / Al-Mg-Si alloy composite. In: *Proceedings of the 105th Conference of Japan Institute of Light Metals*. Sendai: Japan Institute of Light Metals, 2003, s. 311 - 312.

Abstracts

JOZEFONIČ, P., WATANABE, S., MATSUDA, K., MÜLLEROVÁ, I., MIKMEKOVÁ, Š. Characterization of Al-based composites reinforced with CeNF by advanced SEM techniques. In: *15th International Conference on the Physical Properties and Application of Advanced Materials (ICPMAT) expanded to Geo-Earth Science & Civil Design / Engineering (ES&CDE). Abstract book*. Institute of Scientific Instruments of the CAS: Brno, 2021, s. 70. Dostupné z: https://icpmat2021.com/_files/200001189-a9feaa9fec/icpmat-2021-abstract-book.pdf

MIKMEKOVÁ, Š., KONVALINA, I., MÜLLEROVÁ, I., MATSUDA, K., IKENO, S. Prospect of advanced microscopy in material research. In: *15th International Conference on the Physical Properties and Application of Advanced Materials (ICPMAT) expanded to Geo-Earth Science & Civil Design / Engineering (ES&CDE). Abstract book*. Institute of Scientific Instruments of the CAS: Brno, 2021, s. 88. Dostupné z: https://icpmat2021.com/_files/200001189-a9feaa9fec/icpmat-2021-abstract-book.pdf

VAŠKOVICOVÁ, N., NAKAMURA, N., MATSUDA, K., MIKMEKOVÁ, Š., MÜLLEROVÁ, I. Cathodoluminescence analysis of Al₂O₃Sr₄/Al. In: *Microscopy Conference: MC 2019. Abstracts*. Berlin: DSE, 2019, s. 194-195. Dostupné z: <https://www.microscopy-conference.de>

MÜLLEROVÁ, I., MIKMEKOVÁ, Š., MATERNA-MIKMEKOVÁ, E., FRANK, L., MATSUDA, K. Prospects of Scanning Low Energy Electron Microscopy in Material Science. *Microscopy*. 2018, **67**(S2), i18. ISSN 2050-5698. E-ISSN 2050-5701. Dostupné z: [doi: 10.1093/jmicro/dfy060](https://doi.org/10.1093/jmicro/dfy060)

MÜLLEROVÁ, I., FRANK, L., KONVALINA, I., MATSUDA, K., MIKMEKOVÁ, E., POKORNÁ, Z., WALKER, C. Low Energy Electron Microscopy in Materials Science. In: *10th International Conference on the Physical Properties and Application of Advanced Materials (ICPMAT). Abstracts and Proceedings*. Chiang Mai: Chiang Mai University, 2015, s. 20.

MIKMEKOVÁ, Š., MATSUDA, K., KAWABATA, T., MIZUTANI, M., WATANABE, K., MÜLLEROVÁ, I., FRANK, L. Benefits of the Scanning Low Energy Electron Microscopy to Examination of Advanced Materials. In: *2010 Fall Annual Meeting of The Japan Institute of Metals*. Hokkaido: Hokkaido University, 2010, s. 248.

MIKMEKOVÁ, Š., MATSUDA, K., WATANABE, K., MÜLLEROVÁ, I., FRANK, L. SLEEM study of FIB induced damage. In: *8th Japanese-Polish Joint Seminar on Micro and Nano Analysis*. Kyoto: Kyoto University, 2010, s. 7-03.

MATSUDA, K., ISHIDA, Y., MÜLLEROVÁ, I., FRANK, L., IKENO, S. Cube phase in excess-Mg Al-Mg-Si alloy studied by EFTEM. In: *Abstract Booklet - International Symposium on Characterization of Real Materials and Real Processing by Transmission Electron Microscopy*. Nagoya: Nagoya University, 2005, s. 27.

FRANK, L., LAZAR, J., ZEMÁNEK, P., STARČUK JR., Z., JURÁK, P., SOBOTA, J., MÜLLEROVÁ, I. Methodology for experimentation, diagnostics and nanotechnologies. In: NISHIMURA, K., MATSUDA, K., eds. *Proceedings of 2007 Japan-China-Australia Cooperative Symposium on Materials Science and Nanotechnology*. Toyama: IKENO Laboratory, University of Toyama, 2007, s. 9-10. ISBN 978-4-9903248-1-0.

MÜLLEROVÁ, I. Applications of the scanning low energy electron microscopy in materials science. In: NISHIMURA, K., MATSUDA, K., eds. *Proceedings of 2007 Japan-China-Australia Cooperative Symposium on Materials Science and Nanotechnology*. Toyama: IKENO Laboratory, University of Toyama, 2007, s. 11-12. ISBN 978-4-9903248-1-0.