Short Curriculum Vitae

Associate Prof. Dr. Weerapong Chewpraditkul, Ph.D. (Physics)

Head of Luminescence and Scintillation Materials (LSM) Unit
Department of Physics, King Mongkut's University of Technology Thonburi, Bangkok 10140, Thailand
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Work Experience (latest positions held):

- Associate Professor, Dept. of Physics, King Mongkut's University of Technology Thonburi (KMUTT) (1989–present)
- Head of Scientific Instrument Center for Standard and Industry KMUTT (2007–2009)
- Associate Dean for Administration, Faculty of Science, KMUTT (2000–2004)
- Associate Dean for Research, Faculty of Science, KMUTT (1998–2000)
- Head of Dept. of Physics, KMUTT (1994–1998)
- Associate Dean for Student Affair, Faculty of Science, KMUTT (1992–1994)
- Associate Professor, Dept. of Physics, KMUTT (1989–present)
- Assistant Professor, Dept. of Physics, KMUTT (1984-1989)
- Lecturer, Dept. of Physics, KMUTT (1980–1984)

Field(s) of Expertise: His research interests are related with:

-Luminescence and scintillation in materials
-Nuclear radiation detection and measurements
-Radiation sciences and technology

The current research topics of LSM research unit:

1. Development of novel scintillation materials based on $(Y,Lu,Gd)_3(Ga,Sc,Al)_5O_{12}$:Ce multi-component garnets for radiation detector applications (2021-2023; financial support by Thailand Science Research and Innovation - TSRI)
2. Development of novel scintillation ceramics for radiation sensors and X-ray imaging applications (2022-2024; financial support by TSRI)
3. Development of single crystalline films grown by liquid phase epitaxy technique for medical X-ray imaging and electron detection (2022-2024; financial support by TSRI)

Publications: Author and co-author of 110 papers in the refereed international journals and 27 papers in the international conference proceedings. The publications received 1,633 citations (Scopus, auto-citations excluded), and 19,080 reads.

Original papers published in 2008

1. J. Kaewkhao, J. Laopaiboon, **W. Chewpraditkul**, Determination of effective atomic numbers and effective electron densities for Cu/Zn alloy. J. of Quant. Spectroscopy & Rad. Transfer, Vol 109(7) (2008) 1260-1265.
2. **W. Chewpraditkul**, L. Swiderski, M. Moszynski, Light Yield Non-proportionality and Intrinsic Energy Resolution of Doped CsI Scintillators. NUKLEONIKA, Vol. 53(2) (2008) 51-56.

3. J. Kaewkhao, A. Pokaipisit, **W. Chewpraditkul**, Effect of Bi_2O_3 Content on the Properties of Bi_2O_3-BaO-B_2O_3 Glass System. Advance Materials Research Vol. 55-57 (2008) 869-872.

Original papers published in 2009

4. L. Swiderski, M. Moszynski, A. Nassalski, A.Syntfeld-Kazuch, T. Szczesniek, K. Kamada, K. Tsutsumi, Y. Usuki, T. Yanagida, A. Yoshikawa, **W. Chewpraditkul**, M. Pomorski, Scintillation properties of praseodymium doped LuAG scintillator compared to cerium doped LuAG, LSO and $LaBr_3$. IEEE Trans. Nucl. Sci., vol. 56(4) (2009) 2499-2505.
5. J. Kaewkhao, N. Udomkan, **W. Chewpraditkul**, P. Limsuwan, Effect of Excess Bismuth on the Synthesis of Bismuth Silicate ($Bi_4Si_3O_{12}$) Polycrystals. Int. J. of Modern Phys. B, vol. 23(8) (2009) 2093-2099.
6. K. Kirdsiri, J. Kaewkhao, A. Pokaipisit, **W. Chewpraditkul**, P. Limsuwan, Gamma-rays shielding properties of xPbO:(100-x)B_2O_3 glasses system at 662 keV. Annals of Nuclear Energy, vol.36 (2009) 1360-1365.
7. **W. Chewpraditkul**, L. Swiderski, M. Moszynski, T. Szczesniek, A.Syntfeld-Kazuch, C. Wanarak, P. Limsuwan, Comparative studies of $Lu_3Al_5O_{12}$: Ce and $Y_3Al_5O_{12}$: Ce scintillators for gamma-ray detection. Phys. Status Solidi A, vol. 206(11) (2009) 2599-2605.
8. **W. Chewpraditkul**, L. Swiderski, M. Moszynski, T. Szczesniek, A.Syntfeld-Kazuch, C. Wanarak, P. Limsuwan, Scintillation properties of LuAG:Ce, YAG:Ce and LYSO:Ce crystals for gamma-ray detection", IEEE Trans. Nucl. Sci., vol. 56(6) (2009) 3800-3805.

Original papers published in 2010

9 P. Limkitjaroenporn, J. Kaewkhao, S. Tuscharoen, P. Limsuwan, **W. Chewpraditkul,** Structural Studies of Lead Sodium Borate Glasses. Advanced Materials Research, Vols. 93-94 (2010) 439-442.

Original papers published in 2011

10 A. Phunpueok**, W. Chewpraditkul**, P. Limsuwan, C. Wanarak, Luminescence and Scintillation Properties of Ce-Doped YAP and LuYAP Crystals. Advanced Materials Research, Vols. 199-200 (2011) 1789-1795.

11 C. Wanarak, **W. Chewpraditkul**, A. Phunpueok, J. Kaewkhao, Luminescence and Scintillation Properties of Ce-Doped LYSO and YSO Crystals. Advanced Materials Research, Vols. 199-200, (2011) 1796-1803.

12 C. Wanarak, **W. Chewpraditkul**, A. Phunpueok, Light Yield Non-Proportionality and Energy Resolution of $Lu_{1.8}Y_{0.2}SiO_5$:Ce and $LaCl_3$:Ce Scintillation Crystals. Advanced Materials Research, Vols. 284-286 (2011) 2002-2007.

13 A. Phunpueok, W. Chewpraditkul, P. Limsuwan, B. Yu, C. Wanarak, Comparison of $Lu_{0.7}Y_{0.3}$AP:Ce and $Bi_4Ge_3O_{12}$ Scintillators in Gamma Ray Spectrometry. Advanced Materials Research, Vols. 284-286 (2011) 2008-2013.

14 **W. Chewpraditkul**, C. Wanarak, M. Moszynski, T. Szczesniak, L. Swiders "$Lu_{1.8}Y_{0.2}SiO_5$:Ce and $LaCl_3$:Ce Scintillators for Gamma-Ray Detection", Advanced Materials Research, Vols. 284-286 (2011) 2064-2069.

15 **W. Chewpraditkul**, D. Chen, B. Yu, Q. Zhang, Y. Shen, M. Nikl, R. Kucerkova, A. Beitlerova, C. Wanarak, and A. Phunpueok, Luminescence and scintillation of Eu^{2+} doped high silica glass. Phys. Status Solidi RRL 5 (1) (2011) 40–42.

16 P. Limkitjaroenporn, J. Kaewkhao, P. Limsuwan, **W. Chewpraditkul**, Physical, optical, structural and gamma-ray shielding properties of lead sodium borate glasses. Journal of Physics and Chemistry of Solids, Vol. 72 (2011) 245–251.

17 N. Chanthima, J. Kaewkhao, C. kedkaew, **W. Chewpraditkul**, A. Pokaipisit, P. Limsuwan, Study on Interaction of Bi2O3, PbO and BaO in Silicate Glass System at 662 keV for Development of Gamma-Rays Shielding Materials. Progress in NUCLEAR SCIENCE and TECHNOLOGY, Vol. 1 (2011) 106-109.

18 S. Tuscharoen, J. Kaewkhao, **W. Chewpraditkul**, P. Limsuwan, Development of BaO: B_2O_3: Flyash Glass System for Gamma-ray shielding Materials. Progress in NUCLEAR SCIENCE and TECHNOLOGY, Vol. 1 (2011) 110-113.

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Original papers published in 2012

20 **W. Chewpraditkul**, Y. Shen, D. Chen , B. Yu, P. Prusa, M. Nikl, A. Beitlerova, C. Wanarak, Luminescence and scintillation of Ce^{3+}- doped high silica glass. Optical Materials 34 (2012) 1762–1766.

21 K. Sreebunpeng, **W. Chewpraditkul**, M. Nikl, J.A. Mares, K. Nejezchleb, A. Phunpueok, C. Wanarak, Scintillation response of $Lu_3Al_5O_{12}$:Pr^{3+} single crystal scintillators. Nucl. Instrum. Method Phys. Research B 286 (2012) 85 – 88.

22 C. Wanarak, A. Phunpueok, **W. Chewpraditkul**, Scintillation response of $Lu_{1.95}Y_{0.05}SiO_5$:Ce and Y_2SiO_5:Ce single crystal scintillators. Nucl. Instr. Meth. Phys. Research B 286 (2012) 72 - 75.

23 A. Phunpueok, W. Chewpraditkul, P. Limsuwan, C. Wanarak, Scintillation response of $YAlO_3$:Ce and $Lu_{0.7}Y_{0.3}AlO_3$:Ce single crystal scintillators. Nucl. Instr. Meth. Phys. Research B 286 (2012) 76 -79.

24 W. Chewpraditkul, K. Sreebunpeng, M. Nikl, J. A. Mares, K. Nejezchleb, A. Phunpueok, C. Wanarak, Comparison of $Lu_3Al_5O_{12}$:Pr_{3+} and $Bi_4Ge_3O_{12}$ scintillators for gamma-ray detection. Rad. Meas. 47 (2012) 1-5.

25 E. Mihokova, K. Vavru, P. Horodysky, W. Chewpraditkul, V.Jary, M. Nikl, Thermally Stimulated Luminescence in Ce-Doped Yttrium Oxyorthosilicate. IEEE Trans. Nucl. Science Vol. 59 (5) (2012) 2085-2088.

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28 W. Chewpraditkul, Q. Sheng, D. Chen, A. Beitlerova, M. Nikl, Luminescence of Tb^{3+} doped oxide glasses with hight Gd_2O_3 concentration under UV and X-ray excitation. Phys. Status Solidi A 209 (2012) 2578-2582

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32 **W. Chewpraditkul**, A. Phunpueok, T. Szczesniak, M. Moszynski, V. Babin, and M. Nikl, Influence of lutetium content on the scintillation properties in $(Lu_xY_{1-x})AlO_3$:Ce single crystals. Phys. Status Solidi A 210(9) (2013) 1903–1908.

33 K. Sreebunpeng, **W. Chewpraditkul**, V.Babin, M. Nikl, K.Nejezchleb, Scintillation response of $Y_3Al_5O_{12}:Pr^{3+}$ single crystal scintillators. Radiation Measurements 56 (2013) 94-97.

34 O. Sakthong , **W. Chewpraditkul**, C. Wanarak, J. Pejchal, K. Kamada, A. Yoshikawa, G.P. Pazzi, M. Nikl, Luminescence and scintillation characteristics of $Gd_3Al_2Ga_3O_{12}:Ce^{3+}$scintillators. Optical Materials 36 (2013) 568-571.

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36 A. Phunpueok, V. Thongpool, S. Yoo-Kong, **W. Chewpraditkul**, Light Yield Non-proportionality and Energy Resolution of BGO Scintillation Crystals. Journal of Applied Sciences Research Vol. 9(12) (2013) 5976-5980.

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38 K. Sreebunpeng, **W. Chewpraditkul**, M. Nikl, Luminescence and scintillation properties of advanced Lu3Al5O12:Pr3+ single crystal scintillators, Radiation Measurements 60 (2014) 42 – 45.

39 O. Sakthong, **W. Chewpraditkul**, C. Wanarak, K. Kamada, A. Yoshikawa, P. Prusa, M. Nikl, Scintillation properties of $Gd_3Al_2Ga_3O_{12}:Ce^{3+}$ single crystal scintillators, Nuclear Instruments and Methods in Physics Research A, 751 (2014) 1 – 5.

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41 W. Chewpraditkul, D. Panek, P. Bruza, **W. Chewpraditkul**, C. Wanarak, N. Pattanaboonmee, V. Babin, K. Bartosiewicz, K. Kamada, A. Yoshikawa, M. Niki, Luminescence properties and scintillation response in Ce^{3+} - doped $Y_2Gd_1Al_{5-x}Ga_xO_{12}$ (x=2,3,4) single crystals, Journal of Applied Physics, 116 (2014) 083505(1 – 7).

42 K. Seingsanor, **W. Chewpraditkul**, P. Limsuwan, K. Boonin, J. Kaewkhao, P. Limkitjaroenporn, Angular and Intensity Distributions on Multiple Scattering of 662 keV Gamma Photons in Aluminium, Advanced Materials Research 979 (2014) 175-179.

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43 W. Chewpraditkul, N. Pattanaboonmee, **W. Chewpraditkul**, K. Kamada, A. Yoshikawa, Martin Nikl, Luminescence and light yield in Ce^{3+}-doped $Y_1Gd_2Al_{5-x}Ga_xO_{12}$ (x=2,3,4) single crystal scintillators, Applied Mechanics and Materials, 709 (2015) 390-393.

44 P. Lertloypanyachai, N. Pattanaboonmee, **W. Chewpraditkul**, D. Chen, M. Nikl, Photo- and Radioluminescence of Ce^{3+}-doped Dense Oxide Glass, Applied Mechanics and Materials, 709 (2015) 350-353.

Original papers published in 2016

45 P. Lertloypanyachai, N. Pattanaboonmee, **W. Chewpraditkul**, D. Chen, V. Babin, M. Nikl, Luminescence and Scintillation Response of Ce3+-doped Oxide Glasses with High Gd_2O_3 Content, Key Engineering Materials 675-676 (2016) 434-437.

46 N. Yawai, **W. Chewpraditkul**, K. Wantong, M. Nikl, Luminescence and Scintillation Characteristics of Gd_2SiO_5:Ce Single Crystal Scintillator, Key Engineering Materials 675-676 (2016) 772-775.

47 K. Sreebunpeng, **W. Chewpraditkul**, Martin Nikl, Intrinsic Light Yield and Light Loss Coefficient of LuAG:Pr under Excitation with α- and γ- Rays, Key Engineering Materials 675-676 (2016) 768-771.

48 W. Chewpraditkul, N. Pattanaboonmee, K. Wantong, **W. Chewpraditkul**, V. Babin, M. Nikl, K. Kamada, A. Yoshikawa, Effects of Ga Content on Optical and Scintillation Properties in Ce^{3+}-doped $YGd_2(Al,Ga)_5O_{12}$ Scintillators, Key Engineering Materials 675-676 (2016) 552-555.

49 W. Chewpraditkul, P. Průža, D. Pánek, N. Pattanaboonmee, K. Wantong**, W. Chewpraditkul,** V. Babin, K. Bartosiewicz, K. Kamada, A. Yoshikawa, M. Nikl, Optical and scintillation properties of Ce^{3+}-doped $YGd_2Al_{5-x}Ga_xO_{12}$ (x=2,3,4) single crystal scintillators, J. Lumin.169 (2016) 43–50.

50 O. Sakthong , **W. Chewpraditkul**, K. Kamada, A. Yoshikawa, T. Szczesniak, M. Grodzicka, P. Sibczynski, M. Moszynski, Timing characteristics of the scintillation response of $Gd_3Al_2Ga_3O_{12}$:Ce and $Gd_3Al_{2.6}Ga_{2.4}O_{12}$:Ce single crystal scintillators, Rad. Meas., 87 (2016) 24-28.

51 N. Pattanaboonmee, P. Lertloypanyachai, **W. Chewpraditkul**, L. Liu, D. Chen, V. Babin, A. Beitlerova, M. Nikl, Photo- and radioluminescence of Dy^{3+}-doped oxide glass with high-Gd2O3 content, Phys. Status Solidi A 213, (2016)133–138.

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53 **W. Chewpraditkul,** O. Sakthong, W.R. Chewpraditkul, N. Yawai, T. Szczesniak, L. Swiderski, M. Moszynski, S. Kurosawa, R. Murakami, T. Horiai, A. Yoshikawa, M. Nikl, Scintillation timing characteristics of $(La,Gd)_2Si_2O_7$:Ce and Gd_2SiO_5:Ce single crystal scintillators: A comparative study, Rad. Meas., 92 (2016) 49-53.

Original papers published in 2017

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72 Warut Chewpraditkul, Nakarin Pattanaboonmee, Ongsa Sakthong, **Weerapong Chewpraditkul**, Masao Yoshino, Takahito Horiai, Akira Yoshikawa, Luidmila Gushchina, Kei Kamada, Shunsuke Kurosawa, Winicjusz Drozdowski, Marcin E. Witkowski, Tomasz Szczesniak, Marek Moszynski, Martin Nikl, Luminescence and Scintillation Properties of Mg^{2+}-codoped $Lu_{0.6}Gd_{2.4}Al_2Ga_3O_{12}$:Ce Single Crystal, IEEE Trans. Nucl. Sci. 67(6) (2020) 904-909. DOI: 10.1109/TNS.2020.2984518

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