

学術雑誌論文(査読有)

研究テーマごとに掲載しています。2024 年 10 月 31 日現在。

● 地盤環境系

✓ 重金属不溶化(有機性廃棄物の利用, 重金属・半金属の同時不溶化, 不溶化機構解明)

1. Single-step extraction to determine soluble lead levels in soil, *M. Katoh, S. Masaki, T. Sato, International Journal of Geotechnique, Construction Materials and Environment, Vol. 3, No. 2, pp. 375-380, 2012.
2. Suitable chemical properties of animal manure compost to facilitate Pb immobilization in soil, *M. Katoh, W. Kitahara, R. Yagi, T. Sato, Soil and Sediment Contamination: An International Journal, Vol. 23, No. 5, pp. 523-539, DOI: 10.1080/15320383.2014.839623, 2014.
3. Sorption of lead in animal manure compost: contribution of inorganic and organic fractions, *M. Katoh, W. Kitahara, T. Sato, Water, Air, & Soil Pollution, Vol. 225, No. 1, 1828, DOI: 10.1007/s11270-013-1828-2, 2014.
4. Microscopic range of immobilization between heavy metals and amendment in soil through water migration, S. Ogawa, M. Katoh, T. Sato, International Journal of Geotechnique, Construction Materials and Environment, Vol. 6, No. 2, pp. 870-877, 2014.
5. Contribution of hydroxyapatite and ferrihydrite in combined applications for the removal of lead and antimony from aqueous solutions, S. Ogawa, M. Katoh, T. Sato, Water, Air, & Soil Pollution, Vol. 225, No. 1, 2023, DOI: 10.1007/s11270-014-2023-9, 2014.
6. Impact of phosphorus and water-soluble organic carbon in cattle and swine manure composts on lead immobilization in soil, *M. Katoh, Y. Wang, W. Kitahara, T. Sato, Environmental Technology, Vol. 36, Issue 15, pp. 1943-1953, DOI:10.1080/09593330.2015.1016461, 2015.
7. Simultaneous lead and antimony immobilization in shooting range soil by combined application of hydroxyapatite and ferrihydrite, S. Ogawa, M. Katoh, T. Sato, Environmental Technology, Vol. 36, Issue 20, pp. 2647-2656, DOI: 10.1080/09593330.2015.1042071, 2015.
8. 非破壊での鉍物定量による不飽和条件下におけるリン資材不溶化処理土の鉛の安定鉍物形成と移動抑制の定量関係, 小川翔平, 加藤雅彦, 佐藤 健, 土木学会論文集 G(環境), Vol. 71, No. 4, pp. 102-111, 2015.
9. Role of inorganic and organic fractions in animal manure compost in lead immobilization and microbial activity in soil, *M. Katoh, W. Kitahara, T. Sato, Applied and Environmental Soil Science, Vol. 2016, Article ID 7872947, 9 pages, DOI: 10.1155/2016/7872947, 2016.
10. Immobilization of antimony(III) in oxic soil using combined application of hydroxyapatite and ferrihydrite, S. Ogawa, M. Katoh, C. Numako, K. Kitahara, S. Miyazaki, T. Sato, Water, Air, & Soil Pollution, Vol. 227, 124, DOI: 10.1007/s11270-016-2826-y, 2016.

11. Potential for lead release from lead-immobilized animal manure compost in rhizosphere soil of shooting range, *M. Katoh, W. Lu, T. Sato, Applied and Environmental Soil Science, Vol. 2016, Article ID 7410186, 9 pages, DOI: 10.1155/2016/7410186, 2016.
12. Formation of pyromorphite and lead mobilization in contaminated soils amended with hydroxyapatite in the presence of iron oxyhydroxide and water percolation, *M. Katoh, K. Tsuda, N. Matsumoto, T. Sato, Water, Air, & Soil Pollution, Vol. 227, 470, DOI: 10.1007/s11270-016-3172-9, 2016.
13. Formation of a lead insoluble phase using an immobilization material and its maximization in soil under unsaturated moisture conditions, S. Shimizu, T. Sato, *M. Katoh, Journal of Soils and Sediments, Vol. 18, No. 3, pp. 1052-1059, DOI: 10.1007/s11368-017-1813-2, 2018.
14. Formation of a lead-insoluble phase, pyromorphite, by hydroxyapatite during lead migration through the water-unsaturated soils of different lead mobilities, S. Ogawa, T. Sato, *M. Katoh, Environmental Science and Pollution Research, Vol. 25, No. 8, pp. 7662-7671, DOI: 10.1007/s11356-017-1093-9, 2018.
15. Feature of lead complexed with dissolved organic matter on lead immobilization by hydroxyapatite in aqueous solutions and soils, N. Yamada, *M. Katoh, Chemosphere, Vol. 249, 126122, DOI: 10.1007/s10653-019-00371-x, 2020.
16. Enhancing pyromorphite formation in lead-contaminated soils by improving soil physical parameters using hydroxyapatite treatment, S. Ogawa, T. Sato, *M. Katoh, Science of the Total Environment, Vol. 747, 141292, DOI: 10.1016/j.scitotenv.2020.141292, 2020.
17. Characteristics of the immobilization process of arsenic depending on the size fraction released from excavated rock/sediment after the addition of immobilization materials, A. Osono, *M. Katoh, Journal of Environmental Management, Vol. 298, 113534, DOI: 10.1016/j.jenvman.2021.113534, 2021.
18. Formation of pyromorphite by hydroxyapatite during lead migration in soil with different phosphorus sorption abilities, K. Hamada, *M. Katoh, Soils and Foundations, Vol. 62, 101241, <https://doi.org/10.1016/j.sandf.2022.101241>, 2022.
19. Enhancing pyromorphite formation through hydroxyapatite application in lead-contaminated, water-unsaturated soils: influence of low percolation velocity and high soil porosity, S. Shimizu, S. Ogawa, *M. Katoh, Journal of Soils and Sediments, Vol. 24, pp. 3434-3442, <https://doi.org/10.1007/s11368-024-03901-y>, 2024.
- ✓ **自然由来重金属類を含む掘削岩・土砂からの重金属類溶出挙動と対策**
 1. 高炉水砕スラグによる黄鉄鉱を含む掘削土砂の酸性 pH 中和とカドミウム溶出抑制, 加藤雅彦, 森口周二, 沢田和秀, 高木信浩, 赤司有三, 佐藤 健, 土木学会論文集 C(地圏工学), Vol. 72, No. 2, pp. 179-189, 2016.
 2. Reproducibility of up-flow column percolation tests for contaminated soils, T. Yasutaka, A.

- Naka, H. Sakanakura, A. Kurosawa, T. Inui, M. Takeo, S. Inoba, Y. Watanabe, T. Fujikawa, T. Miura, S. Miyaguchi, K. Nakajou, M. Sumikura, K. Ito, S. Tamoto, T. Tatsuhara, T. Chida, K. Hirata, K. Ohori, M. Someya, M. Katoh, M. Umino, M. Negishi, K. Ito, J. Kojima, S. Ogawa, PLoS ONE, Vol. 12, No. 6, e0178979, DOI: 10.1371/journal.pone.0178979, 2017.
3. Simultaneous control of cadmium release and acidic pH neutralization in excavated sedimentary rock with concurrent oxidation of pyrite using steel slag, *M. Katoh, S. Moriguchi, N. Takagi, Y. Akashi, T. Sato, Journal of Soils and Sediments, Vol. 18, No. 3, pp. 1194–1204, DOI: 10.1007/s11368-017-1892-0, 2018.
 4. Arsenic release from marine sedimentary rock after excavation from urbanized coastal areas: Oxidation of framboidal pyrite and subsequent natural suppression of arsenic release, A. Kamata, *M. Katoh, Science of the Total Environment, Vol. 670, pp. 752–759, DOI: 10.1016/j.scitotenv.2019.03.217, 2019.
 5. Estimation of potential arsenic leaching from its phases in excavated sedimentary and metamorphic rocks, S. Suzuki, *M. Katoh, Environmental Geochemistry and Health, Vol. 42, pp. 407–418, DOI: 10.1007/s10653-019-00371-x, 2020.
 6. 収着能が異なる下位土壌への掘削泥岩から溶脱したヒ素の集積形態と化学的環境変動に伴う集積ヒ素の再放出性, 安達美佳, 加藤雅彦, 地盤工学ジャーナル, Vol. 15, No. 3, pp. 487–496, 2020.
 7. Suppression of arsenic release from alkaline excavated rock by calcium dissolved from steel slag, S. Hada, S. Moriguchi, Y. Akashi, *M. Katoh, Environmental Geochemistry and Health, Vol. 42, pp. 3983–3993, DOI: 10.1007/s10653-020-00657-5, 2020.
 8. The effects of redox conditions on arsenic re-release from excavated marine sedimentary rock with naturally suppressed arsenic release, A. Kamata, M. Ueshima, H. Sakanakura, T. Miura, *M. Katoh, Environmental Geochemistry and Health, Vol. 44, pp. 4157–4171, DOI: 10.1007/s10653-021-01178-5, 2022.
 9. Impact of arsenic releaching from excavated rock after once-arsenic leaching on potential arsenic leaching, S. Suzuki, *M. Katoh, Environmental Geochemistry and Health, Vol. 45, pp. 3277–3291, <https://doi.org/10.1007/s10653-022-01418-2>, 2023.
 10. Suppression of arsenic leaching from excavated soil and the contribution of soluble and insoluble components in steel slag on arsenic immobilization, A. Kamata, T. Miura, *M. Katoh, Environmental Science and Pollution Research, Vol. 30, pp. 19946–19957, <https://doi.org/10.1007/s11356-022-23569-6>, 2023..
 11. Enhancement in formation of insoluble arsenic phases without re-leaching by particle size of excavated sediment with iron sulfate heptahydrate, N. Manabe, *M. Katoh, Soil and Sediment Contamination: An International Journal, <https://doi.org/10.1080/15320383.2024.2390546>, 2024.

✓ ファイトレメディエーション

1. 射撃場鉛汚染土壌に対するリン酸ニカリウムと酢酸の併用による鉛不溶化の促進, 吉田孝敏, 加藤雅彦, 佐藤 健, 土木学会論文集 G(環境), Vol. 67, No. 2, pp. 93–100, 2011.
2. アパタイトとソバを併用した根圏土壌の鉛不溶化特性と拡散防止の可能性, 北原 亘, 加藤雅彦, 佐藤 健, 土木学会論文集 G(環境), Vol. 68, No. 4, pp. 203–212, 2012.
3. Stability of lead immobilized by apatite in lead-containing rhizosphere soil of buckwheat (*Fagopyrum esculentum*) and hairy vetch (*Vicia villosa*), *M. Katoh, H. Matsuoka, T. Sato, International Journal of Phytoremediation, Vol. 17, Issue 6, pp. 604–611, DOI: 10.1080/15226514.2014.950413, 2015.
4. Removal of lead by apatite and its stability in the presence of organic acids, *M. Katoh, A. Makimura, T. Sato, Environmental Technology, Vol. 37, Issue 23, pp. 3036–3045, DOI: 10.1080/09593330.2016.1174744, 2016.
5. Lead and antimony removal from contaminated soil by phytoremediation combined with an immobilization material, *M. Katoh, K. Hashimoto, T. Sato, CLEAN – Soil, Air, Water –, Vol. 44, Issue 12, pp. 1717–1724, DOI: 10.1002/clen.201500162, 2016.
6. Immobilization of lead migrating from contaminated soil in rhizosphere soil of barley (*Hordeum vulgare* L.) and hairy vetch (*Vicia villosa*) using hydroxyapatite, *M. Katoh, Elsy Risky, T. Sato., International Journal of Environmental Research and Public Health, Vol. 14, No. 10, 1273, DOI: 10.3390/ijerph14101273, 2017.

✓ 地下水ヒ素, 排水からの重金属除去, 災害廃棄物, 副産物の長期安定性・不溶化評価

1. 濃尾平野西濃地域におけるヒ素の存在形態と地下水への溶出, 西澤貴樹, 加藤雅彦, 北沢遥, 佐藤 健, 土木学会論文集 C(地圏工学), Vol. 68, No. 4, pp. 670–679, 2012.
2. アパタイトのリン溶解量に基づいた鉛収着量の予測, 加藤雅彦, 後藤真悟, 佐藤 健, 土木学会論文集 G(環境), Vol. 68, No. 7, pp. III_435–III_442, 2012.
3. 濃尾平野西濃地域における地下水中へのヒ素溶出メカニズム, 西澤貴樹, 加藤雅彦, 堀 晶子, 佐藤 健, 土木学会論文集 G(環境), Vol. 68, No. 7, pp. III_507–III_515, 2012.
4. 下水汚泥灰から回収されたアパタイト, 処理灰の鉛収着能と収着資材としての可能性, 加藤雅彦, 松岡秀明, 服部哲也, 佐藤 健, 土木学会論文集 G(環境), Vol. 69, No. 7, pp. III_281–III_290, 2013.
5. Repeatable use of wood ash to remove lead from contaminated water, *M. Katoh, M. Shiramizu, T. Sato, Journal of Material Cycles and Waste Management, Vol. 17, Issue 3, pp. 590–597, DOI: 10.1007/s10163-014-0286-2, 2015.
6. 廃石膏アパタイトによる温泉排水中のフッ素除去とその最適処理条件, 加藤雅彦, 羽田彩友子, 北川 聡, 寺尾 宏, 佐藤 健, 土木学会論文集 G(環境), Vol. 70, No. 7, pp. III_517–III_525, 2014.
7. Arsenic release processes into confined aquifers of the Seino Basins, Nobi Plain, Japan, Y.

- Kawai, *M. Katoh, R. Mori, Y. Otake, T. Sato, International Journal of Geotechnique, Construction Materials and Environment, Vol. 10, No. 2, pp. 1796–1803, 2016.
8. Post-depositional changes in elemental leaching from recovered soils separated from disaster waste and tsunami deposits generated by the Great East Japan Earthquake and tsunami, T. Yamaguchi, T. Sato, *M. Katoh, Journal of Environmental Management, Vol. 233, pp. 89–96, DOI: 10.1016/j.jenvman.2018.12.033, 2019.
 9. 災害廃棄物処理計画・処理実行計画の作成支援を目的としたオントロジーの開発, 矢吹信喜, 有賀貴志, 中野正樹, 酒井崇之, 大塚義一, 岩下将也, 加藤雅彦, 土木学会論文集 F3(土木情報学), Vol. 78, No. 2, pp. I_10–I_21, 2022.
 10. Predicting the particle size distribution of fine-grained and sandy soils using deep learning for classifying recovered soils separated from tsunami deposits, M. Iwashita, Y. Otsuka, *M. Katoh, Journal of Material Cycles and Waste Management, Vol. 24, pp. 1304–1316, DOI: 10.1007/s10163-022-01404-x, 2022.
 11. 再生製品の溶出パラメータ取得のためのバッチ溶出試験における最適な攪拌条件の検討, 小川翔平, 木下久美子, 加藤雄大, 加藤雅彦, 肴倉宏史, 地盤工学ジャーナル, Vol. 17, No. 3, pp. 361–372, 2022.

● 農業生産系

✓ 有機物-リンなどの栄養塩の共存下における根域の発達機構

1. Root response and phosphorus uptake with enhancement in available phosphorus level in the presence of water-soluble organic matter deriving from organic waste material, Y. Takahashi, *M. Katoh, Journal of Environmental Management, Vol. 322, 116038, <https://doi.org/10.1016/j.jenvman.2022.116038>, 2022.
2. Root response and phosphorus acquisition under partial distribution of phosphorus and water-soluble organic matter, Y. Takahashi, *M. Katoh, Soil Use and Management, Vol. 40, e13038, <http://doi.org/10.1111/sum.13038>, 2024.
3. Variations in the level of available phosphorus with changes in the status of water-soluble organic matter derived from different organic materials in soil, Y. Takahashi, *M. Katoh, Journal of Environmental Management, Vol. 370, 122531, <https://doi.org/10.1016/j.jenvman.2022.116038>, 2024.

✓ 畑土壌(化学肥料と家畜ふん堆肥の併用)

1. 畑条件下での重窒素ラベル硫酸と各種牛糞堆肥の併用下における由来別無機態窒素の増減要因の解析, 加藤雅彦, 林 康人, 田中福代, 森國博全, 日本土壌肥料学雑誌, Vol. 79, No. 2, pp. 163–171, 2008.
2. 重窒素ラベル硫酸と各種牛糞堆肥の併用下におけるハウレンソウへの窒素供給特性の解析, 加藤雅彦, 林 康人, 森國博全, 日本土壌肥料学雑誌, Vol. 79, No. 3, pp. 283–289, 2008.

3. ^{15}N ラベル硫安と豚糞・鶏糞堆肥との併用が堆肥窒素の無機化に及ぼす影響, 加藤雅彦, 林 康人, 森國博全, 日本土壤肥料学雑誌, Vol. 80, No. 2, pp. 152-156, 2009.
4. 波長分散型蛍光 X 線分析による家畜ふん堆肥成分の迅速分析法, 小宮山鉄兵, 藤澤英司, 加藤雅彦, 森國博全, 日本土壤肥料学雑誌, Vol. 80, No. 3, pp. 275-279, 2009.
5. 黒ボク土を用いた培養試験における肥効調節型肥料と重窒素ラベル牛糞堆肥の併用が堆肥窒素の無機化に及ぼす影響, 加藤雅彦, 林 康人, 森國博全, 日本土壤肥料学雑誌, Vol. 81, No. 1, pp. 31-35, 2010.
6. 畑条件下での牛糞・鶏糞堆肥と重過リン酸石灰の併用による肥料由来の可給態リン酸の不可給化の抑制, *加藤雅彦, 小宮山鉄兵, 藤澤英司, 森國博全, 日本土壤肥料学雑誌, Vol. 81, No. 4, pp. 367-371, 2010.
7. 重窒素ラベル硫安と牛糞堆肥の併用下における堆肥の施用時期の相違が堆肥窒素の無機化およびハウレンソウへの窒素供給に及ぼす影響, *加藤雅彦, 林 康人, 森國博全, 日本土壤肥料学雑誌, Vol. 81, No. 6, pp. 589-593, 2010.
8. Improvement on plant uptake of inorganic nutrients fertilized by migration of water-soluble organic matter from animal manure based compost, S. Hayashi, M. Hara, *M. Katoh, Journal of Soil Science and Plant Nutrition, Vol. 22, pp. 3399-3413. DOI: 10.1007/s42729-022-00895-9, 2022.
9. Contribution of soluble and non-soluble organic matter derived from animal manure composts to enhance phosphorus availability in soil, H. Tatori, T. Mishima, A. Kobayashi, *M. Katoh, Journal of Soil Science and Plant Nutrition, Vol. 23, pp. 5850-5861, <http://doi.org/10.1007/s42729-023-01444-8>, 2023.
- ✓ 畑土壤(土壌蓄積リン, ケイ酸カリ)
 1. Phosphorus recovery from soil through phosphorus extraction and retention on material: a comparison between batch extraction-retention and column percolation, K. Mizuki, *M. Katoh, Journal of Environmental Management, Vol. 277, 111435, DOI: 10.1016/j.jenvman.2020.111435, 2021.
 2. Behavior of nutrients released from crystalline minerals of artificial potassium silicate fertilizer and their supply to the Japanese mustard spinach (*Brassica rapa* var. *perviridis*), S. Hirata, *M. Katoh, Soil Use and Management, Vol. 38, pp. 1403-1415. DOI: 10.1111/sum.12789, 2022.
- ✓ 畑土壤(その他)
 1. 無機・有機質肥料施用時における肥料の随伴イオンの種類と量の違いが葉菜類の NO_3^- 含有率に及ぼす影響, 加藤雅彦, 林 康人, 森國博全, 日本土壤肥料学雑誌, Vol. 77, No. 5, pp. 569-575, 2006.
 2. 点滴灌水施肥栽培における土壌の養分含量を考慮したリン酸の適正施肥, 林 康人, 加藤雅彦, 小林 新, 久保省三, 日本土壤肥料学雑誌, Vol. 77, No. 5, pp. 555-561, 2006.
 3. 隔離床栽培における土壌可給態リン酸含量がトマトの養分吸収に与える影響, 小宮山鉄兵,

藤澤英司, 新妻成一, 加藤雅彦, 森国博全, 日本土壤肥料学雑誌, Vol. 80, No. 5, pp. 516–521, 2009.

✓ 水田土壌

1. Impact of Water Percolation on Nutrient Leaching from an Irrigated Paddy Field in Japan, M. Katoh, A. Iwata, I. Shaku, Y. Nakajima, K. Matsuya and M. Kimura, Soil Use and Management, Vol. 19, No. 4, pp. 298–304, 2003. (Erratum 20. 1. 2004)
2. Nutrient Leaching from the Plow Layer by Water Percolation and Accumulation in the Subsoil in an Irrigated Paddy Field, M. Katoh, J. Murase, M. Hayashi, K. Matsuya and M. Kimura, Soil Science and Plant Nutrition, Vol. 50, No. 5, pp. 721–729, 2004.
3. Sites and Processes of Nutrient Accumulation in the Subsoil through Water Percolation from the Plow Layer in a Submerged Paddy Soil Microcosm, M. Katoh, J. Murase and M. Kimura, Soil Science and Plant Nutrition, Vol. 50, No. 5, pp. 731–738, 2004.
4. Effect of Rice Straw Amendment on Dissolved Organic and Inorganic Carbon and Cationic Nutrients in Percolating Water from a Flooded Paddy Soil: A Microcosm Experiment Using ^{13}C -Enriched Rice Straw, *M. Katoh, J. Murase, A. Sugimoto and M. Kimura, Organic Geochemistry, Vol. 36, No. 5, pp. 803–811, 2005.
5. Incorporation of ^{13}C -Labeled Rice-Straw-Derived Carbon into Microbial Communities in Submerged Rice Field Soil and Percolating Water, J. Murase, Y. Matsui, M. Katoh, A. Sugimoto and M. Kimura, Soil Biology & Biochemistry, Vol. 38, No. 12, pp. 3483–3491, 2006.