

第21回

- 講演者：大西 勇 氏（広島大学 大学院理学研究科 数理分子生命理学専攻）
 - 題目□ A Mathematical Aspect for Liesegang Phenomena
 - 日時：平成22年2月22日（月）16：30～17：30

In 1896, colloid-chemist R.E. Liesegang [4] observed strikingly regular patterns in precipitation-reaction processes, which are referred to as Liesegang bands or rings, according to their shape. In this talk I introduce an attempt to understand from a mathematical viewpoint the experiments in which regularized structures with spatially distinct bands of precipitated material are exhibited, with clearly visible scaling properties. This study is a result [1] of a collaboration with Professors D. Hilhorst, R. van der Hout, and M. Mimura.

References:

- [1] Hilhorst, D., van der Hout, R., Mimura, M., and Ohnishi, I.: A Mathematical Study of the One-Dimensional Keller and Rubinow Model for Liesegang Bands. J. Stat Phys 135: pp. 107-132 (2009)
- [2] Kai, S., Muller, S.C.: Spatial and temporal macroscopic structures in chemical reaction system: precipitation patterns and interfacial motion. Sci. Form 1, pp. 8-38 (1985)
- [3] Keller, J.B., Rubinow, S.I.: Recurrent precipitation and Liesegang rings. J. Chem. Phys. 74, pp. 5000-5007 (1981)
- [4] Liesegang, R.E.: Chemische Fernwirkung. Photo. Archiv 800, pp. 305-309 (1896)
- [5] Mimura, M., Ohnishi, I., Ueyama, D.: A mathematical aspect of Liesegang phenomena in two space dimensions. Res. Rep. Res. Inst. Math. Sci. 1499, pp. 185-201 (2006)
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- [7] Ohnishi, I. : A mathematical aspect for Liesegang phenomena, Res. Rep. Res. Inst. Math. Sci. 1356, pp. 1-26 (2004).



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8 images

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