

University of Groningen

## Charge transport and trap states in lead sulfide quantum dot field-effect transistors

Nugraha, Mohamad Insan

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*  
2017

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Nugraha, M. I. (2017). *Charge transport and trap states in lead sulfide quantum dot field-effect transistors*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

### Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

# List of Publications

1. Daniel M. Balazs, **Mohamad Insan Nugraha**, Satria Zulkarnaen Bisri, Mykhailo Sytnyk, Wolfgang Heiss, Maria Antonietta Loi, Reducing charge trapping in PbS colloidal quantum dot solids, *Appl. Phys. Lett.* **2014**, 104, 112104.
2. **Mohamad Insan Nugraha**, Roger Hausermann, Satria Zulkarnaen Bisri, Hiroyuki Matsui, Mykhailo Sytnyk, Wolfgang Heiss, Jun Takeya, Maria Antonietta Loi, High Mobility and Low Density of Trap States in Dual-Solid-Gated PbS Nanocrystal Field-Effect Transistors, *Adv. Mater.* **2015**, 27, 2107-2112.
3. **Mohamad Insan Nugraha**, Hiroyuki Matsui, Satria Zulkarnaen Bisri, Mykhailo Sytnyk, Wolfgang Heiss, Maria Antonietta Loi, Jun Takeya, Tunable Doping in PbS Nanocrystal Field-Effect Transistors using Surface Molecular Dipole, *APL Materials*, **2016**, 4, 116105.
4. **Mohamad Insan Nugraha**, Hiroyuki Matsui, Roger Hausermann, Shun Watanabe, Takayoshi Kubo, Satria Zulkarnaen Bisri, Mykhailo Sytnyk, Wolfgang Heiss, Maria Antonietta Loi, Jun Takeya, Strain-Modulated Charge Transport in Flexible PbS Nanocrystal Field-Effect Transistors, *Adv. Electron. Mater.* **2017**, 3, 1600360.
5. Jeng-Ting Li, Li-Chih Liu, Jen-Sue Chen, Jiann-Shing Jeng, Po-Yung Liao, Hsiao-Cheng Chiang, Ting-Chang Chang, **Mohamad Insan Nugraha**, Maria Antonietta Loi, Localized tail state distribution and hopping transport in ultrathin zinc-tin-oxide thin film transistor, *Appl. Phys. Lett.* **2017**, 110, 023504.
6. **Mohamad Insan Nugraha**, Roger Hausermann, Hiroyuki Matsui, Shun Watanabe, Mykhailo Sytnyk, Wolfgang Heiss, Maria Antonietta Loi, Jun Takeya, Broadening of the Distribution of Trap States in PbS Quantum Dot Field-Effect Transistors with High-k Dielectrics, *ACS Appl. Mater. Interfaces* **2017**, 9, 4719.
7. **Mohamad Insan Nugraha**, Shohei Kumagai, Shun Watanabe, Mykhailo Sytnyk, Wolfgang Heiss, Maria Antonietta Loi, Jun Takeya, Enabling ambipolar to heavy n-type transport in PbS quantum dot solids through doping with organic molecules, *ACS Appl. Mater. Interfaces* **2017**, Article ASAP.

