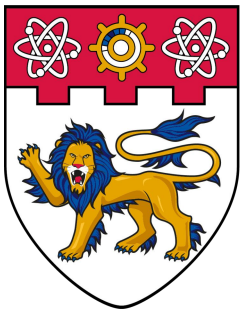

NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

DISSERTATION TITLE

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SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING

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The contributions of the co-authors are as follows:

- A/Prof Schmid provided the initial project direction and edited the manuscript drafts.
- I prepared the manuscript drafts. The manuscript was revised by Dr Hester and Dr. Blanchard.
- I co-designed the study with A/Prof Siegbert Schmid and performed all the laboratory work at the School of Materials Science and Engineering and the Singapore Synchrotron Light Source. I also analyzed the data.
- All microscopy, including sample preparation, was conducted by me in the Facility for Analysis, Characterization, Testing and Simulation.
- Dr James Hester assisted in the collection of the neutron powder diffraction data.
- Dr Peter Blanchard assisted in the interpretation of the X-ray absorption spectroscopy data and carried out the spectral interpretation.
- Dr Wojciech Miiller assisted in the collection and provided guidance in the interpretation of the magnetic measurement data.

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The contributions of the co-authors are as follows:

- Prof Ting suggested the materials area and edited the manuscript drafts.
- I wrote the drafts of the manuscript. The manuscript was revised together with Dr. Sartbaeva and Dr. Yao.
- I performed all the materials synthesis, collected X-ray diffraction patterns and visible light spectra, carried transmission electron microscopy, and conducted data evaluation.
- Dr. Y. Fang conducted the Rietveld analysis of the powder X-ray diffraction data and single crystal structure determinations.
- Dr U. Hintermair conducted the molecular dynamics simulations.
- Ms. A. Sartbaeva prepared the samples for electron microscopy.

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Table of Contents

Abstract

Multihop cellular networks (MCNs) incorporate wireless ad hoc networking into traditional single-hop cellular networks (SCNs) and thus they enjoy the flexibility of ad hoc networks, while preserving the benefit of using infrastructure of SCNs. In this Thesis, we study the resource allocation problems in MCNs.

Xxxx …

Acknowledgement (optional)

First of all, I would like to express my sincere thanks and great gratitude to my parents. ...

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Acronyms (optional)

2G	Second Generation
3G	Third Generation
ACA	Adaptive Channel Assignment
AP	Access Point
ARS	Ad-hoc Relaying Station
ASP	Adaptive Switching Point
ATDMA	Advanced Time Division Multiple Access
BS	Base Station
CAMA	Cellular Aided Mobile Ad-hoc Network
CBM	Cellular Based Multihop Systems
CDD	Code-Division Duplexing
D-PRMA	Distributed PRMA
DA	Demand Assignment
DCA	Dynamic Channel Assignment

Symbols (optional)

B	channel bandwidth in Hz
C	channel capacity in bps;
	number of collisions in time slot t
d	distance
D	minimum reuse distanc
D_a	average message access delay
D_{id}	inter-datagram-arrival time
D_{max}	maximum tolerable delay for voice packets

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Chapter 6
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6.1 Conclusions

...

6.2 Recommendation in Future Work

Table 6-1 System parameters for TDD CDMA systems

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Appendix A (optional)

Table A-1 Example of uplink call combinations for state (8,2,1,2,1,3,2)

Appendix B (optional)

Table B-1 Example of downlink call combinations for state (24,2,1,2,1,3,2)