

# SITI FATIMAH BINTI ZAKARIA



- KULLIYAH OF SCIENCE
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## ACADEMIC QUALIFICATION

- Doctor of Philosophy in Mathematics (Pure)

## TEACHING RESPONSIBILITIES

ANALYTIC GEOMETRY	2017/2018 2019/2020 2020/2021
Analytic Geometry	2018/2019
CALCULUS	2016/2017 2017/2018 2018/2019 2019/2020
COMPLEX VARIABLE FUNCTION	2019/2020
COMPLEX VARIABLE FUNCTIONS	2019/2020
COMPUTER IN SCIENCE	2019/2020
ERGODIC THEORY 3	2020/2021
ERGODIC THEORY III	2018/2019 2019/2020 2020/2021
INTRODUCTION TO FUNCTIONAL ANALYSIS	2018/2019 2020/2021
VECTOR ANALYSIS	2019/2020

## RESEARCH PROJECTS

### In Progress

- 2019 - Present** Stability Analysis of Nonlinear Operator (Quadratic) and  $Z_5$ -symmetric Models
- 2017 - Present** Formulation of 5-Fluorouracil-loaded EGFR-Targeted Hydrogel-Nanocapsule Hybrids for Oral Squamous Cell Carcinoma Therapy
- 2017 - Present** The zeros of Ising model partition function on second order Cayley tree.
- 2017 - Present** Rheological and Physical Properties characterization of nanoparticles-hydrogel for topical oral drug of oral cancer (targeted drug delivery)

**2017 - Present**

Lambda Model with Competing Interactions on Cayley Tree

**Completed**

**2017 - 2019** Lambda Model with Competing Interactions on Cayley Tree

**2017 - 2019** The zeros of Ising model partition function on second order Cayley tree.

**PUBLICATIONS**

**Article**

- 2020** [The zeros distribution of Z<sub>5</sub>-symmetric model on a triangular lattice.](#) Malaysian Journal of Fundamental and Applied Sciences , 16(2020) (3) pp.307-313
- 2020** [The Z<sub>6</sub>-symmetric model partition function on triangular lattice.](#) Malaysian Journal of Fundamental and Applied Sciences , 16 (3) pp.264-270
- 2020** [The zeros distribution of Z<sub>5</sub>-symmetric model on a triangular lattice.](#) Malaysian Journal of Fundamental and Applied Sciences , 16(2020) (3) pp.307-313
- 2020** [The Z<sub>6</sub>-symmetric model partition function on triangular lattice.](#) Malaysian Journal of Fundamental and Applied Sciences , 16 (3) pp.264-270
- 2019** [Zeros of the 3-state Potts model partition function for the square lattice revisited.](#) Journal of Statistical Mechanics: Theory and Experiment , 2019 pp.2-25
- 2019** [Zeros of the 3-state Potts model partition function for the square lattice revisited.](#) Journal of Statistical Mechanics: Theory and Experiment , 2019 pp.2-25
- 2011** [Ising model with restricted interactions on general Cayley tree of arbitrary order.](#) Australian Journal of Basic and Applied Sciences , 5 (8) pp.1296-1304
- 2011** [Phase diagram of the Ising model with next-nearest-neighbour interactions.](#) Australian Journal of Basic and Applied Sciences , 5 (2) pp.173-181

**Conference or Workshop Item**

- 2011** [Ising model on a general Cayley tree with competing next-nearest-neighbour interactions.](#) In: **Annual International Conference on Operations Research and Statistics**
- 2011** [Limit behavior of dynamic systems corresponding to Lattice models with competing prolonged and one-level binary interactions.](#) In: **IIUM Research, Invention and Innovation Exhibition (IRIIE) 2011**
- 2010** [Phase diagram of the Ising model next-nearest-neighbour interactions.](#) In: **International Conference on Mathematical Applications in Engineering (ICMAE'10)**

**Book**

**Book Section**

- 2011** [Phase diagram of the Ising model with nearest-neighbor interactions.](#) In: **Recent achievements in dynamical systems: proceedings of Department of Computational and Theoretical Sciences, Faculty of Science, IIUM** IIUM Press . ISBN 9789674182014 , pp.98-106
- 2011** [Limit behavior of dynamic systems corresponding to lattice models with competing prolonged and one-level binary interaction.](#) In: **Investigations on Pure Mathematics, Finance Mathematics and Optics** IIUM Press . ISBN 9789674181987 , pp.101-108
- 2011** [Ising model on a general Cayley tree with competing next-nearest-neighbor interactions.](#) In: **Recent achievements in dynamical systems: proceedings of Department of Computational and Theoretical Sciences, Faculty of Science, IIUM** IIUM Press . ISBN 9789674182014 , pp.107-117
- 2010** [Phase diagram of the Ising model with next-nearest-neighbour interactions.](#) In: **Proceedings of International Conference on Mathematical Applications in Engineering** Faculty of Engineering, International Islamic University Malaysia (IIUM) . ISBN 9789834309046 , pp.355-359