<div align="center">

INFORMATION ON DOCTORAL THESIS

</div>

1. Full name: KHONG CHI NGUYEN   **2. Sex:** Male

3. Date of birth: January 12, 1969   **4. Place of birth:** HAGIANG

5. Admission decision number: 1143/QĐ-ĐHSPHN2, December 10, 2015

6. Changes in academic process: Adjustment in the thesis title

7. Official thesis title:

   STABILITY AND ROBUST STABILITY OF LINEAR DYNAMIC EQUATIONS ON TIME SCALES

8. Major: Analysis Mathematics   **9. Code:** 9 46 01 02

10. Supervisors: Assoc. Prof. Dr. Do Duc Thuan and Prof. Dr. Nguyen Huu Du

11. Summary of the new findings of the thesis: The dissertation has presented some new results related to the stability, stability radius for the dynamic equation on time scales as follows:

i)   Introduction of the concept for Lyapunov exponent on time scales and study of the relationship between the Lyapunov exponent and the stability of linear dynamic equations on time scales in cases where the matrix of coefficients is bounded or is a constant matrix;

ii)   Establishment of the robust stability of implicit dynamic equations with Lipschitz perturbations and Bohl-Perron type stability theorem for implicit dynamic equations on time scales; suggestion of the concept for Bohl exponent and study of the relation between exponential stability and the Bohl exponent when dynamic equations under perturbations acting on the system data;

iii)   Recommendation of the radius of stability formula for implicit dynamic equations on time scales under some structured perturbations acting on the right-hand side or both side-hands.

12. Practical applicability, if any:

   The issues of the topic are novel and updated, the results are of scientific significance, and they are promising for application in many practical problems in many fields of science and technic.

13. Further research directions, if any:

i)   Using the Lyapunov exponent method to research the stability for linearized nonlinear dynamical systems.

ii)   Studying the stabilization, robustness stabilization and/or the controllability... for linear time-varying implicit dynamic equations.

iii)   Investigating the relation between Bohl exponent and robust stability for implicit dynamic equations under non-linear perturbations.

14. Thesis-related publications:

[1]   Nguyen K.C., Nhung T.V., Anh Hoa T.T., and Liem N.C (2018), Lyapunov exponent for dynamic equations on time scales, *Dynamic Systems and Application*, 27(2), 367-386. (SCIE)

[2]   Thuan D.D., Nguyen K.C., Ha N.T., and Du N.H. (2019), Robust stability of linear time-varying implicit dynamic equations: A general consideration, *Mathematics of Control, Signals, and Systems*, 31(3), 385-413. (SCI)

[3]   Thuan D.D., Nguyen K.C., Ha N.T., and Quoc P.V. (2020), On stability, Bohl exponent and Bohl-Perron theorem for implicit dynamic equations, *International Journal of Control* (Published online). (SCI)

ON BEHALF OF	*Hanoi, July* 2nd, 2020
ACADEMIC SUPERVISORS	**PH.D. STUDENT**
Assoc. Prof. Dr. Do Duc Thuan	**Khong Chi Nguyen**