Reference code	
Date of submission	
(to be filled by NAFOSTED)	

APPLICATION

FOR BASIC RESEARCH PROJECT

A. General project information:

1	Project name Research of 238U, 234U, 228Ra, 226Ra, 224Ra, 222Rn, 220Rn, 210Pb,, 210Po isotopes in tap, thermal and underground waters in North Vietnam			
2	Summary In groundwater, thermal and tap water always exist 238U, 234U, 228Ra, 226Ra, 224Ra, 222Rn, 220Rn, 210Pb, 210Po radioisotopes. It is poison when they entered to human body and their radio-activity is assessed from mBq/l to kBq/l by WHO and UNSCEAR. Their radio-activity is high but the concentration is very low, and when simultaneous spectral measurement will be gotten interference, so it is difficult to precisely determine by conventional methods. In order to determine simultaneously the above isotopes, chemical separation method, isotope enrichment, advanced and modern measurement and processing techniques will be applied in this study. Combining methods of radioisotope and stable isotope analysis, the results of the study will support information about characteristics, distribution, and assessment of environmental radioactivity, information on the origin and age of groundwater and thermal water, clarify the relationship between radioisotopes, between radioisotopes with the surrounding and geological environments, the relationship between radio-geochemistry and mineralization of thermal water with young magmatic and tectonic activities in some areas, northern Vietnam. In addition, the results will also clarify the nature and reliability of the total alpha/beta activity method.			
3	Field	Natural science s and engineering ☒ Social sciences and humanuties ☐		
	Scientific field	Earth Science		
	Discipline's classification code	Geophysics		
	Code of scientific field	105.05		
	Research type: Theoretical ☒; Experimental ☐		Discovery proposal ☒; Follow-on proposal ☐	
4	Project duration (*months*)	36	Number of project members	8
5	Total budget required (*mil. vnd*)	1,089	Requested funding (*mil VNĐ*)	1,089
	Name of other funding institution/s this proposal has been submitted to (if any)			

B. Principal Investigator (PI) and Host Institution:

1	**Principal Investigator**			
	Full name	Dương Văn Hào	Year of birth	07/01/1986
	Academic title	Dr	Sex	M
	Administrative position	Lecturer	ID Number	013413861
	Department	Bộ môn Địa vật lý		
	Institution	Hanoi University of Mining and Geology		
	Address	Đông Ngạc, Từ Liêm	City/prov.	Hà Nội
	Telephone	84-24-38389633	Cell phone	84-0985443985
	E-mail	haodnth@gmail.com	Fax	84-24-38389633

2	**Host Institution**			
	Name	University of Mining and Geology		
	Representative	GS.TS. Trần Thanh Hải	Position	Hiệu Trưởng
	Address	Số 18 Phố Viên - Phường Đức Thắng - Q. Bắc Từ Liêm - Hà Nội	City/prov.	Hà Nội
	Account number		State Treasury	
	Infrastructure available for the propject	University's laboratories (the project host) with the available equipment for chemistry Laboratory, geophysical Laboratory with environmental monitoring instruments, High-tech Laboratory for environmental samples (LA-ICP-MS), Institute of Nuclear Science and Technology with Laboratory of hydrological isotope (alpha/beta LSC, alpha spectrometry), Laboratory of environmental radioactivity (gamma and alpha spectroscopy), Vietnam Academy of Science and Technology with geochemical laboratory, and Federal of Geology and Rare radiation with Laboratory radiation (alpha and alpha/beta spectrometry, ICP-MS)		
3	**Collaborating Research Institution**			
	Name	Institute of Nuclear Science and Technology		
	Address	Hoàng Quốc Việt, Hà Nội	City/Prov.	Hà Nội
	Country			

C. List of members

No	Full name	Title	Research Institution	Position	Working month	Code
1	Dương Văn Hào	Dr	Hanoi University of Mining and Geology	PI	20.0	21928
2	Công Tiến Dũng	Dr	Hanoi University of Mining and Geology	Technician	3.0	11096
3	Nguyễn Bách Thảo	Dr	Department of Hydrogeology, Faculty of Geosciences and Geoengineering, University of Mining and Geology, Hanoi	Technician	3.0	14748
4	Nguyễn Thị Hồng Thịnh	M	Institue for Nuclear Science and Technology	Main researcher	4.0	22087
5	Nguyễn Mai Lan	Dr	Institute of geological sciences	Main researcher	3.0	1816
6	Bùi Đắc Dũng	M	Institute for Nuclear Science and Technology (INST)	Main researcher	3.0	22011
7	Lê Khánh Phồn	Prof.Dr	Retire	Main researcher	2.5	115
8	Nguyễn Quốc Phi	Dr	Hanoi University of Mining and Geology	Sci. Secretary	3.0	3580

D. Expected Outputs

No	Publication results	Number of publications and articles	Note
1	Article(s) in qualified ISI-covered Journals *(The leading journals in different disciplines, selected from list of Article(s) in qualified International Scientific Journals which is promulgated by NAFOSTED annually)*	1	
2	Article(s) in qualified International Scientific Journals *(The selected journals from the SCI and SCIE list, which is promulgated by NAFOSTED annually)*	1	
3	Article(s) in other International Journals	0	
4	Article(s) in National Scientific Journals	1	
5	National/ International Conference (s)	1	
6	Monograph(s)	0	
7	Other		

No	Training results	Number of participating Master and PhD Students	Note
1	Master(s)	1	
2	PhD(s)	0	

E. Expenditure

Fully allocated expenditure ☒

Allocated expenditure partially ☐

F. Center of excellence Yes ☐ No ☒

This main applicant confirms hereby the veracity of all the details and information given in this proposal including the attachments. They were prepared with the agreement of all parties involved.

Host Institution

Hà Nội, Date: 03/07/2019

Principal Investigator

Dương Văn Hào