



**MISSOURI
CHAPTER**



American Concrete Institute

2015-2016 HONORARY

ABDELDJELIL "DJ" BELARBI

GRADUATE SCHOLARSHIP

PURPOSE: To honor long-time ACI Missouri member and Missouri S&T faculty Dr. DJ Belarbi by promoting the development of future engineers, contractors and architects the ACI Missouri Chapter has established the Honorary DJ Belarbi Graduate Scholarship Award. The annual award will provide financial assistance for graduate students pursuing a course of study in the field of concrete design, materials, or construction.

ELIGIBILITY: To receive consideration, a student must be currently enrolled or accepted into a graduate program at an institution located within the boundaries of the ACI Missouri Chapter with a course of study related to concrete materials, design, or construction. During the award year, the student should be enrolled in at least three academic credits per semester/quarter.

CRITERIA: The following criteria must be met by the applicant prior to receiving the award but not necessarily at the time of application:

1. Possess a bachelor's degree from a higher education institution.
2. Be accepted or currently enrolled for graduate study at a college or university in a program in the area of concrete where design, materials, construction are offered.
3. Maintain status as a full time student during the entire scholarship year.

SUBMISSION: A completed, typewritten application package must be received by the Student Activities Committee, Missouri ACI Chapter by 5pm **Friday, March 6th**. The package shall include the following:

- a. Complete application form (attached below).
- b. Undergraduate and graduate transcripts. An unofficial transcript from your current institution is sufficient if it shows all credit from other institutions you have attended.
- c. Letter of enrollment or acceptance in a graduate program from an institution located within the ACI Missouri Chapter district.
- d. Two letters of recommendation addressing potential for growth, character, leadership capacity, and career interest. One should be from a faculty member. Recommendations must be submitted directly to the ACI Missouri Chapter.

SELECTION OF AWARD RECIPIENTS: Upon receipt of all applications by the deadline of 5pm, **Friday, March 6th**, the Student Activities Committee shall review the applications. Those applicants who have satisfactorily completed the application will be considered for the award by a three-member, ad-hoc Committee, approved by the board of directors and chaired by the past president of ACI, Missouri Chapter. **Selection is based upon academic achievement and awards, relevant experience, quality of application including writing skills, and displayed interest in concrete.**

NUMBER, AMOUNT AND PAYMENT OF AWARD: The ACI Chapter will present up to two (2) \$2500 scholarship awards. Awards will be announced at the annual meeting of the ACI Missouri Chapter held in conjunction with the Missouri Concrete Conference in Rolla, MO at noon on March 31st, 2015 . All winners and their advisors will receive complementary tickets to this meeting and are encouraged to attend. Payment will be made in two installments at the beginning of Fall and Winter semesters of the award year. If the student fails to provide proof of registration for graduate study for each of those semesters, the award will be forfeited.

APPLICATION

Due: Friday, March 6th, 2015

AMERICAN CONCRETE INSTITUTE – MISSOURI CHAPTER GRADUATE SCHOLARSHIP AWARD

PERSONAL INFORMATION

NAME: Mahdi Valipour	
ADDRESS: 2217 Vienna Road, Apt #4, Rolla, Mo, 65401	
TELEPHONE: 573-202-4549	EMAIL mahdi.valipour@mst.edu

HIGHER EDUCATION

INSTITUTION	DATES AT-TENDED	CREDIT HOURS	DEGREES AWARDED AND DATE
Missouri S&T	2012-present	24	PhD - Civil Engineering
University of Tehran	2007-2010	24	Master of Civil Engineering-2010
IA University	2002-2005	145	Bachelor of Civil Engineering-2005

GRADUATE STUDY

Institution: Missouri University of Science and Technology (Missouri S&T)		Location: Rolla, Mo	
Date of Admission: Fall 2012		Period of Study: 4 years	
Degree Expected: PhD - Fall 2016		Major: Civil Engr	Minor
Previous MO-ACI graduate scholarship? Yes ☐ , No ☒ If yes, when?:			

- 1. What reasons do you believe support your application for this award? (Financial need is not an important criterion.)**

I was introduced to concrete technology during my undergraduate studies when taking some courses in this area. This introduction motivated me to pursue a master's degree in order to increase my knowledge regarding concrete technology. During my master's degree studies, I took more advanced concrete technology related courses and due to my enthusiasm to know more about concrete, I was introduced to the Construction Material Institute (CMI), the top ranked professional academic research institute in concrete technology in Iran.

Working as a graduate research assistant at CMI significantly improved my knowledge and understanding of concrete technology which resulted in a master's thesis on the investigation of a new natural pozzolan, natural Zeolite, in concrete to improve its durability. One of my most important research areas was the investigation of the durability of environmentally friendly sustainable green concrete containing natural Zeolite in marine environments. Publishing several journal and conference papers, lecturing several workshops in concrete technology and co-advising on two master theses in concrete technology were some of my accomplishments during this precious and honorable experience. But this wasn't the end of the concrete road for me. Very soon I realized that in order to receive top notch and up-to-date concrete knowledge, I needed to challenge myself in an adventure. That is why I decided to move to the US in order to continue my education in concrete technology at a higher level.

I initiated my PhD study at Missouri S&T in the fall of 2012. I am also working as a graduate research assistant at the Center for Infrastructure Engineering Studies (CIES) concentrating on concrete technology. My main research area is in the investigation of an economical and environmentally friendly (low-carbon footprint) high performance concrete overlay for asphalt and concrete roads as well as bridge decks.

2. What is your background in the field of concrete? Of particular interest is your experience in design, materials, construction, and/or research. Include a summary of your work experience and accomplishments.

Publications:

- Mahdi Valipour, Farhad Pargar, Mohammad Shekarchi, and Sara Khani, "Comparing a natural pozzolan, zeolite, to metakaolin and silica fume in terms of their effect on the durability characteristics of concrete: A laboratory study", Construction and Building Materials, 41, 2013: 879-888.
- Mahdi Valipour, Mina Yekkalar, Mohammad Shekarchi, and Somayeh Panahi, "Environmental assessment of green concrete containing natural zeolite on the global warming index in marine environments", Journal of Cleaner Production, Volume 65, 2014: 418-423.

Project manager:

- Led the first academic research site in Persian Gulf region, investigating the durability and corrosion of concrete in Iran.
- Assessed the optimization of self-compacting concrete mixture for the pavement of the Mehrabad International Airport, Iran.

Awards:

- Best student paper award winner 3rd place in the "2nd international conference on seismic retrofitting" with focus on concrete technology, Tabriz, Iran
- Iranian Concrete Institute (ICI) award winner 2nd place in the best M.Sc. thesis in concrete technology.

3. What is your plan for continuing your education? What goals have you established for your education?

Currently, I am continuing my study towards a PhD at Missouri S&T. I am also working as a graduate research assistant in concrete technology at the Center for Infrastructure Engineering Studies (CIES). My current research is on the investigation of an economical and environmentally friendly (low-carbon footprint) high performance concrete overlay for asphalt and concrete roads as well as bridge decks which will also be my PhD dissertation. I am working with full enthusiasm and passion to do my best to accomplish this research in the best possible way during my PhD study. I am also planning to take more advanced courses regarding the different aspects and applications of concrete. Publishing several journal papers as well as attending different concrete-related conferences and exhibitions and workshops in near future during my PhD study are other important goals of mine. I am trying to use any opportunity to improve my knowledge and skills in this field as much as possible.

4. What specific work relating to concrete, such as design, materials, construction, or research, will you pursue during your graduate work?

I will continue my research on the investigation of an economical and environmentally friendly (low-carbon footprint) ultra-high performance concrete overlay for asphalt and concrete roads as well as bridge decks. In relation to the main research, I will need to research the following subjects:

- Investigation of internal curing effect in Ultra High Performance Concrete (UHPC) using lightweight aggregates
- Study of rheological properties of mortars with w/c ratio
- Effect of low and high temperatures on the mechanical and durability of UHPC
- Field implementation and validation for UHPC overlay

5. What will your program of study be during the year of this award? (List coursework and research)

Course list: Concrete Corrosion Smart material and sensors Non-destructive techniques in concrete structures Scanning electron microscopy in concrete Health monitoring methods in concrete structures Research: - Robustness of UHPC: In this phase of the research program, durability related tests are planned to be performed on the specimens prepared using the selected mixtures. In order to understand both the flexural and shear behavior of the UHPC surface materials, a layer of the proposed surface material will be applied on a laboratory scale slab or beam. - Field implementation and validation for UHPC overlay: A 50 meter long testing area will be devoted to cast pavement layers.

REFERENCES

List the names of two people from whom you have requested recommendations be emailed or mailed to the ACI-MO Chapter at the address below.

NAME	TITLE	EMPLOYER	ADDRESS
Kamal H. Khayat	Professor	Department of Civil, Architectural and Environmental Engineering(Missouri S&T)	224 Engineering Research Laboratory, 500 W. 16th St., Rolla, MO 65409-0710
Dimitri Feys	Assistant Professor	Department of Civil, Architectural and Environmental Engineering(Missouri S&T)	128 Butler-Carlton Hall,1401 N Pine Street, Rolla, MO 65409

I certify that the information contained in this application is true and that I have answered all of the questions to the best of my ability. I agree that I will notify the ACI Missouri Chapter immediately when my educational program is interrupted or changed in any manner that may jeopardize the intent of the award. I further agree that I will accept the award only as long as I successfully pursue the graduate study program I have described above and for which the reward was made.

Signature:  Date: 03/05/2015

RETURN COMPLETED APPLICATION PACKAGE BY FRIDAY, MARCH 6TH, 2015 TO dane.shaw@jacobs.com (PREFERRED SUBMISSION METHOD)

or

**Dane M. Shaw
Jacobs Engineering
501 N. Broadway
Saint Louis, MO 63102**

Applicants are encouraged to submit applications electronically. Please make every attempt to submit in one email. Letters of reference should be sent directly either electronically or by mail.