

# INCREASING TECHNOLOGY & INNOVATION CAPABILITIES IN THE MILLING SECTOR

BY SAMANTHA RYALLS



**A** Capability Investment Scheme jointly invested by Sugar Research Australia (SRA), Sugar Research Institute (SRI) and Queensland University of Technology (QUT) is providing three rising researchers an opportunity to build industry milling research capacity by working within the QUT Bioprocessing Group.

Milling Matters recently met with the first of the participants within a new milling sector capability building initiative by SRA, SRI and QUT. Dr Iman Ashtiani Abdi will work with the Centre for Tropical Crops and Biocommodities as a postdoctoral research fellow in process engineering, investigating a range of projects related to sugar manufacturing.

Dr Abdi obtained his Bachelor's Degree in Mechanical and Aerospace Engineering in 2006 before completing his Master's Degree in 2011, obtaining his PhD from the School of Mechanical and Mining Engineering at University of Queensland. His research focused on investigating fluid flow behaviour within porous media, with applications in heat exchangers and filters. Dr Abdi continued onto postdoctoral research at UQ studying cell optimisation of metal foam to increase heat transfer.

In 2017 he transitioned to a role in industry as a mechanical design engineer working on a range of projects focused on energy generation and storage on

farms. Dr Abdi said: "This move to industry, working in a small company with lots of projects in the renewables area was a great opportunity for a researcher to learn the language of industry."

At QUT he is mentored by Dr Ross Broadfoot and is working on a project to optimise pans to work under lower pressure vapour which will therefore increase efficiency, productivity and profitability in mills. He has also been working on a rig at QUT's site in Banyo investigating mud permeability.

"Ross Broadfoot is an encyclopedia of sugar knowledge and has been a good mentor since joining QUT," Dr Abdi said.

"The sugar industry is attractive to me because of its strong focus on sustainability and its ability to generate its total steam and electricity requirements and also export power to the grid."

"The goal is to extend those green credentials while still producing high quality sugar," Dr Abdi said.

His current objective is to gain knowledge on the entire sugar industry, not a specific part. Then over the next few years he can learn the specifics and work his way to becoming an expert in a specific area.

He looks forward to applying his knowledge to the sugar industry and continuing to learn from the experts at

QUT. He already has ideas for industry and looks forward to working on future research activity to further expand on those projects and deliver outcomes for the milling sector.

Dr Harjeet Khanna, General Manager, Research Funding Unit, Sugar Research Australia, said: "The investment from SRA, SRI and QUT will span across five years. It is recognition of the importance of building and maintaining research capability for the milling sector.

"Having SRA, SRI and QUT collaborate on this project is a strong win for the milling sector and its future research capacity."

This investment scheme captures mentoring as one of the modes of transfer of discipline knowledge and intellectual capital. It gives new industry entrants the hard skills they need to succeed in their current roles and prepare them to assume more advanced responsibilities over time. It is therefore also a mechanism to ensure good succession planning where senior professionals pass on the experience-based knowledge they have acquired over the course of their careers to the early and mid-career professionals who ultimately will take over from them. ■

*(Above) Dr Iman Ashtiani Abdi outside the QUT Centre for Tropical Crops & Biocommodities.*