

MicroMasters[®] Certificate

DelftX

This is to certify that

Iwijn Achterberg

has successfully completed all courses and received
passing grades to earn a MicroMasters program
certificate in

Solar Energy Engineering

a program offered by DelftX, in collaboration with edX.



Arno Smets

Professor, Electrical Engineering, Mathematics and Computer
Science

Delft University of Technology



MICROMASTERS PROGRAM CERTIFICATE
Issued May 2020

VALID CERTIFICATE ID
bc92a53bff9b4019b64efaf6d3be1b29

Verified Certificate

The DelftX logo consists of the text "DelftX" in white, sans-serif font, centered within a solid blue rectangular background.

This is to certify that

Iwijn Achterberg

successfully completed and received a passing grade in

**PV1x: Solar Energy: Photovoltaic (PV) Energy
Conversion**

a course of study offered by DelftX, an online learning initiative of
Delft University of Technology.

A handwritten signature in black ink, appearing to read "Arno Smets".

Arno Smets

Professor, Electrical Engineering, Mathematics and Computer Science

Delft University of Technology

A handwritten signature in black ink, appearing to read "Miro Zeman".

Miro Zeman

Head of the Electrical Sustainable Energy department

Delft University of Technology

A handwritten signature in black ink, appearing to read "René van Swaaij".

René van Swaaij

Associate Professor, Photovoltaics Material and Devices

Delft University of Technology



Verified Certificate

Issued August 13, 2019

Valid Certificate ID

3873e38fc64c4536bf88fd2714b1a9dc

Verified Certificate

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This is to certify that

Iwijn Achterberg

successfully completed and received a passing grade in

PV2x: Solar Energy: Photovoltaic (PV) Technologies

a course of study offered by DelftX, an online learning initiative of
Delft University of Technology.

A handwritten signature in black ink, appearing to read "Arno Smets".

Arno Smets

Professor, Electrical Engineering, Mathematics and Computer Science
Delft University of Technology

A handwritten signature in black ink, appearing to read "Miro Zeman".

Miro Zeman

Head of the Electrical Sustainable Energy department
Delft University of Technology

A handwritten signature in black ink, appearing to read "René van Swaaij".

René van Swaaij

Associate Professor, Photovoltaics Material and Devices
Delft University of Technology



Verified Certificate
Issued February 1, 2020

Valid Certificate ID
[e6f07b2b61454ca49182169d75912e43](#)

Verified Certificate

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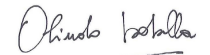
This is to certify that

Iwijn Achterberg

successfully completed and received a passing grade in

PV3x: Solar Energy: Photovoltaic (PV) Systems

a course of study offered by DelftX, an online learning initiative of
Delft University of Technology.

A handwritten signature in black ink, appearing to read "Olindo Isabella".

Olindo Isabella

Associate Professor, Head of Photovoltaic Materials and Devices Group
Delft University of Technology

A handwritten signature in black ink, appearing to read "Ravi Vasudevan".

Ravi Vasudevan

Postdoctoral Researcher with the Photovoltaic Materials and Devices
Delft University of Technology



Verified Certificate
Issued April 20, 2020

Valid Certificate ID
[19f2841c480a4cea8bd3e5190596f07a](#)

Verified Certificate

DelftX

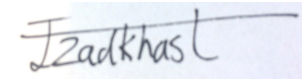
This is to certify that

Iwijn Achterberg

successfully completed and received a passing grade in

**PV4x: Solar Energy: Integration of Photovoltaic Systems
in Microgrids**

a course of study offered by DelftX, an online learning initiative of
Delft University of Technology.



Seyedmahdi Izadkhast

Postdoctoral researcher, DC Systems, Energy Conversion & Storage
Delft University of Technology



Laura M. Ramirez Elizondo

Assistant Professor, DC Systems, Energy Conversion & Storage
Delft University of Technology



Pavol Bauer

Professor of DC Systems, Energy Conversion & Storage
Delft University of Technology



Verified Certificate
Issued April 20, 2020

Valid Certificate ID
[0af7edbdd6864d7cbd3d85a07461100b](#)

Verified Certificate

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This is to certify that

Iwijn Achterberg

successfully completed and received a passing grade in

PV5Ex: Solar Energy Engineering: Comprehensive Exams

a course of study offered by DelftX, an online learning initiative of Delft University of Technology.

A handwritten signature in black ink, appearing to read "Arno Smets".

Arno Smets

Professor, Electrical Engineering, Mathematics and Computer Science

Delft University of Technology

A handwritten signature in black ink, appearing to read "Olindo Isabella".

Olindo Isabella

Assistant Professor, Photovoltaics Material and Devices

Delft University of Technology

A handwritten signature in black ink, appearing to read "Pavol Bauer".

Pavol Bauer

Full Professor, Department of Electrical Sustainable Energy

Delft University of Technology



Verified Certificate
Issued May 29, 2020

Valid Certificate ID
[a5271a489eeb40f0a07a7ee46724671f](#)

Solar Energy Engineering Record

Completed Last Updated 11/7/20

Iwijn Achterberg

Iwijn | iwijn.achterberg@freedom.nl

Course Name	School	Course ID	Highest Grade Earned	Letter Grade	Verified Attempts	Date Earned	Status
Solar Energy: Photovoltaic (PV) Energy Conversion	Delft University of Technology	DelftX+PV1x+1T2019	91%	Pass	1	8/13/19	Earned
Solar Energy: Photovoltaic (PV) Technologies	Delft University of Technology	DelftX+PV2x+1T2019	81%	Pass	1	2/3/20	Earned
Solar Energy: Photovoltaic (PV) Systems	Delft University of Technology	DelftX+PV3x+1T2019	77%	Pass	1	3/24/20	Earned
Solar Energy: Integration of Photovoltaic Systems in Microgrids	Delft University of Technology	DelftX+PV4x+1T2019	92%	Pass	1	3/24/20	Earned
Solar Energy Engineering: Comprehensive Exams	Delft University of Technology	DelftX+PV5Ex+1T2020	67%	Pass	1	5/29/20	Earned