FIBER OPTIC WELDING

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THE PROJECT SUMMARY

E World (Better Electro World) is a project which is set up on the idea that VET (Vocational Education and Training) can be learned best if a student acquires vocational qualifications by the good samples of practices on peer learning and project based implementations. The main reason for this project is to lessen the educational barriers of VET which hinder a student to be successful and proactive. The idea of this project on peer learning with the good examples of project based learning comes after finding that we have a lot of common needs, problems and reasons for participating in a European partnership.

In the implementation of this project, "Learn & Do" step is improved and reinforced by taking the next step "Learn & Teach". We aim to train trainees/workers for reaching good quality with an international knowledge, vocational skills and individual competence base, relevant to working life. That will increase their employability not only in their national business but also in the EU labor market. In addition, this will set up the frame for their lifelong learning.

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1* **Introduction:**

The fiber optic transmits the information as light pulses along a glass or plastic fiber or strand. A cable of fiber optic can have more than a hundred fibers. The fiber optic came in substitution of the copper in our houses because the fiber optic is faster and cheaper than the copper.

2* **How to weld two fiber optics:**

In this book we will show you how to weld two fiber optics. For that, we're going to use a fiber from a pigtail and weld it again. But before that, we need to see what materials we need.

**Materials:**

1. Pigtail with the fiber optic.

2. Plier to help remove the cover from the cable
3. Alcohol to clean the fiber optic

4. High precision cut fiber cleaver to do a precise cut of the fiber

5. Fiber splicer used to weld and put the protection on the fiber
6. Heat-shrink to protect the fiber

7. Optical power meter to test the fiber
4* Step 1: Cutting and striping the fiber optic

For the first step we need to cut the pigtail in the middle and then remove the exterior cover of the cable and the cover of the fiber optic.

Cutting the pigtail

Striping the fiber optic
5* Step 2: Cleaning and precision cutting
After getting the fiber out, we need to give it a good clean so we can do the precision cutting. After this, repeat steps 1 and 2 with the other half of the pigtail.

Cleaning

precision cutting of the fiber optic

6* Step 3: Welding
Now we can weld the two fibers to each other using the fiber splicer. We put the fibers in the machine aligned. Not all the fiber splicers can make an automatic aligning of the fibers, but this one can. After that, just press the button and the device does the welding.

welding

Auto alignment

Better Electro-World France Meeting
May 2018
7* Step 4: Protection with heat-shrink

Once the welding is done, we need to protect the fiber from breaking and getting dirty with the heat-shrink. We put the fiber optic inside the heat-shrink and then put it in the heater of the machine.

8* Step 5: Testing

Finally after welding and protecting the fiber optic, we need to test it with the optical power meter. The test of the fiber optic cables allows to identify points of light losses.
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Hi, my name is Aitor. I am from Spain. This is my second Erasmus+ project. My hobbies are rallies, computer games, going out with friends and family. I study at the IES Santa Lucia, in the course of telecommunications. As I said before, this is my second Erasmus+ meeting, it has been good experience, meeting new people and discovering France and Bernay.

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Hi, my name is João. I am from Almada, Portugal. This is my first Erasmus+ meeting. I am in a course of electronics, automation and computers. I like to listen to music, read, draw, write, play videogames and go out with friends and family.
11* Mete Orhan  
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Hi, my name is Mete. I am from TURKEY. I'm an 11th grade student. My dad is an electrician, my mum is a housewife. My biggest dream since I was a child is to be a good electrical engineer. My hobbies are cycling and making electrical circuits. Since my childhood I like to work with electricity because I have spent a lot of time with my father. I participated to this project which started in our school because I was very happy to learn both about electricity and to teach it. I think this project is a useful project. I recommend everyone to participate.

12* Loik Fresnel

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Hello, my name is Loik, I am 15 years old, I come from France, my hobbies are listening to music, watching mangas, and sport. I study digital systems in the vocational highschool Clement Ader in Bernay situated in Normandy.
Hi, I am Andraž. I attend the vocational school for chemistry, electrical engineering and computer engineering in Celje, Slovenia. I live in Jurklošter. My interests are model trains, photographing, photo editing, filmmaking, video editing, custom PC building, computer video gaming, DIY electronic projects with arduino and all other electric DIY projects. I have my own website: [www.andrazspan.com](http://www.andrazspan.com) and my own YouTube channel: [www.youtube.com/user/andrazspan1](http://www.youtube.com/user/andrazspan1)
14* Pictures: