ÓBUDAI EGYETEM
ÓBUDA UNIVERSITY

Óbuda university
Doctoral School on Materials Sciences and Technologies

Development of composite materials for the electromagnetic interference (EMI) shielding

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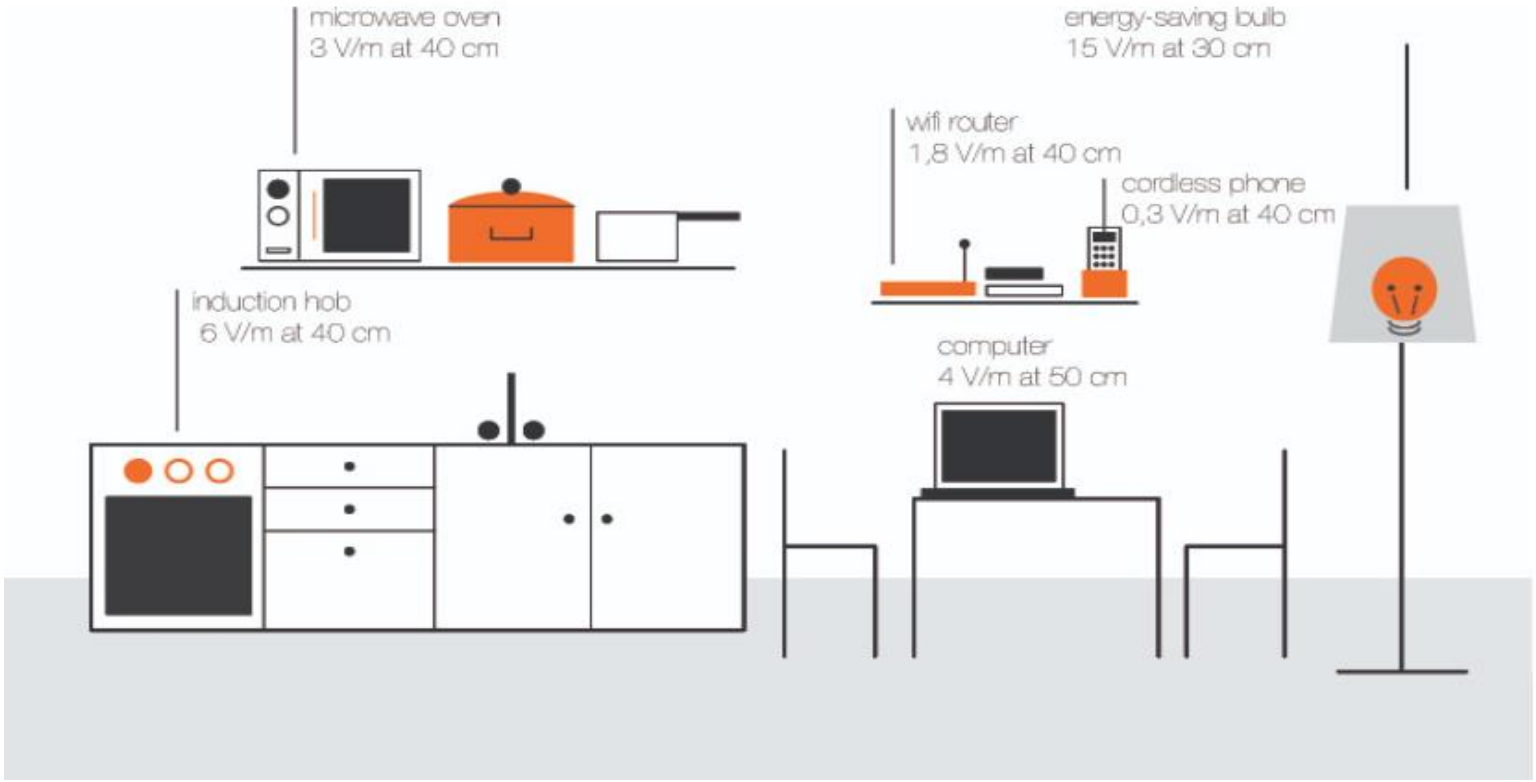
Introduction

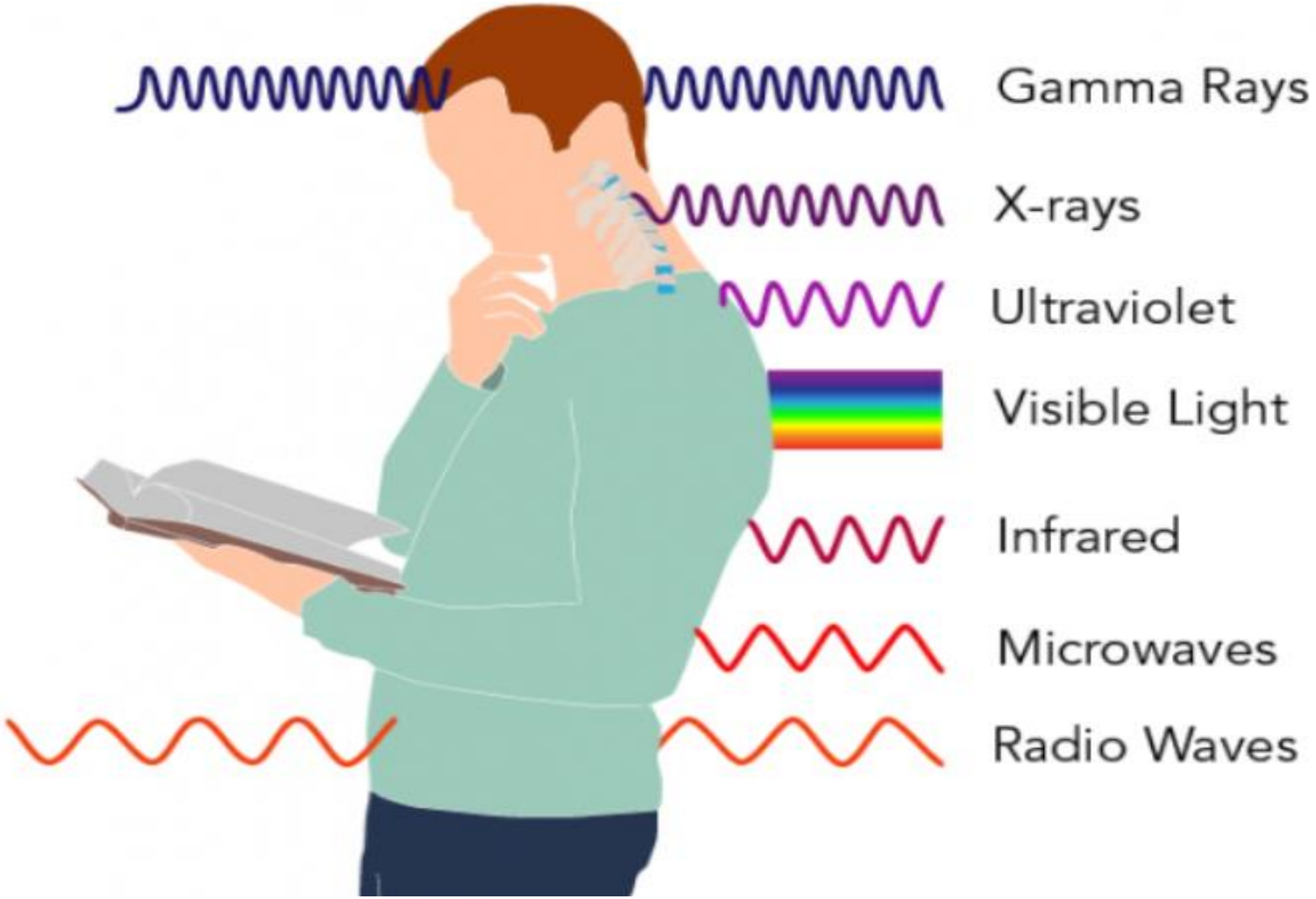
The use of EM waves surrounds us



Introduction

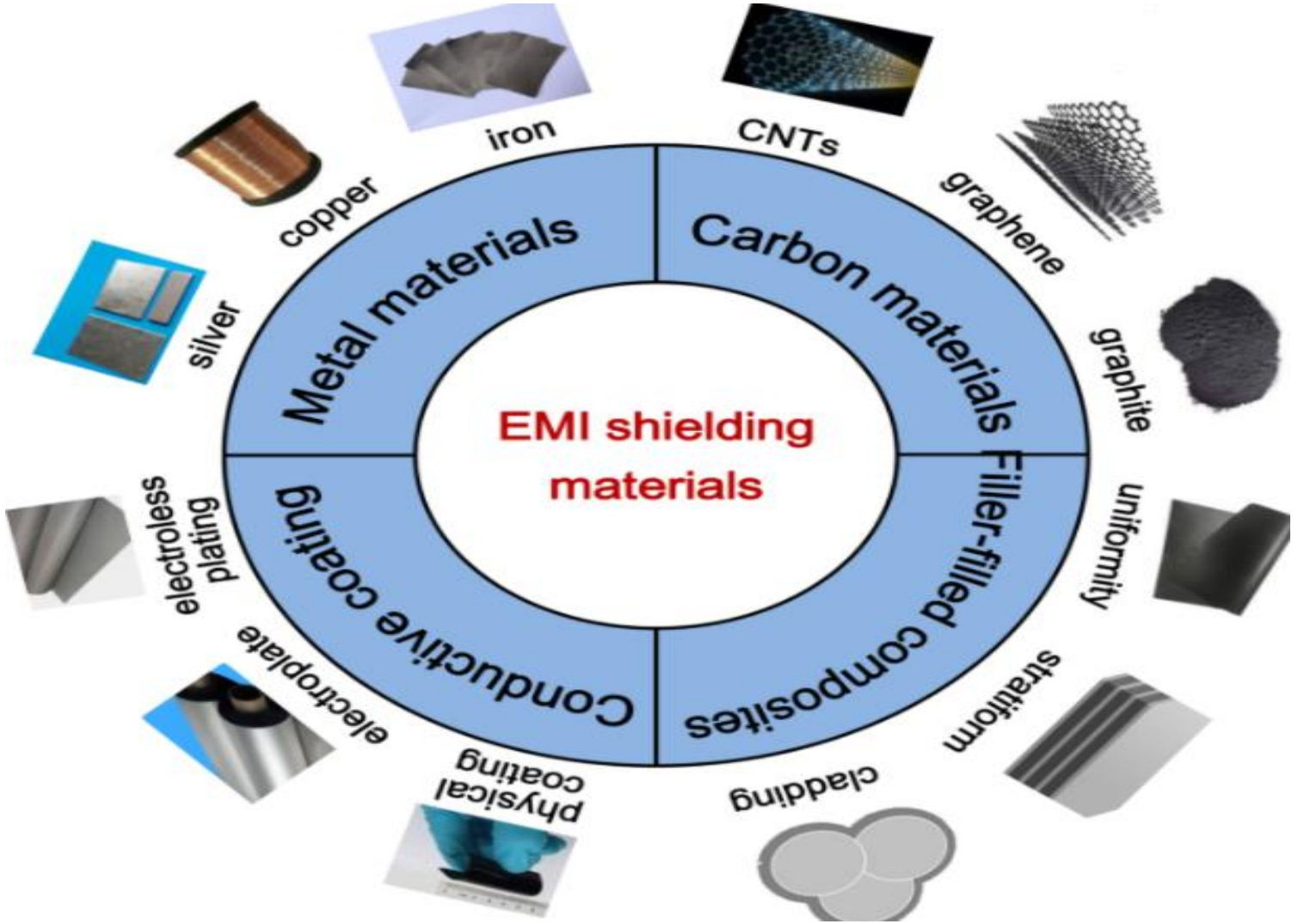
- Along with the popularization of smart home appliances, electromagnetic shielding has grown significantly.

The Important of the research



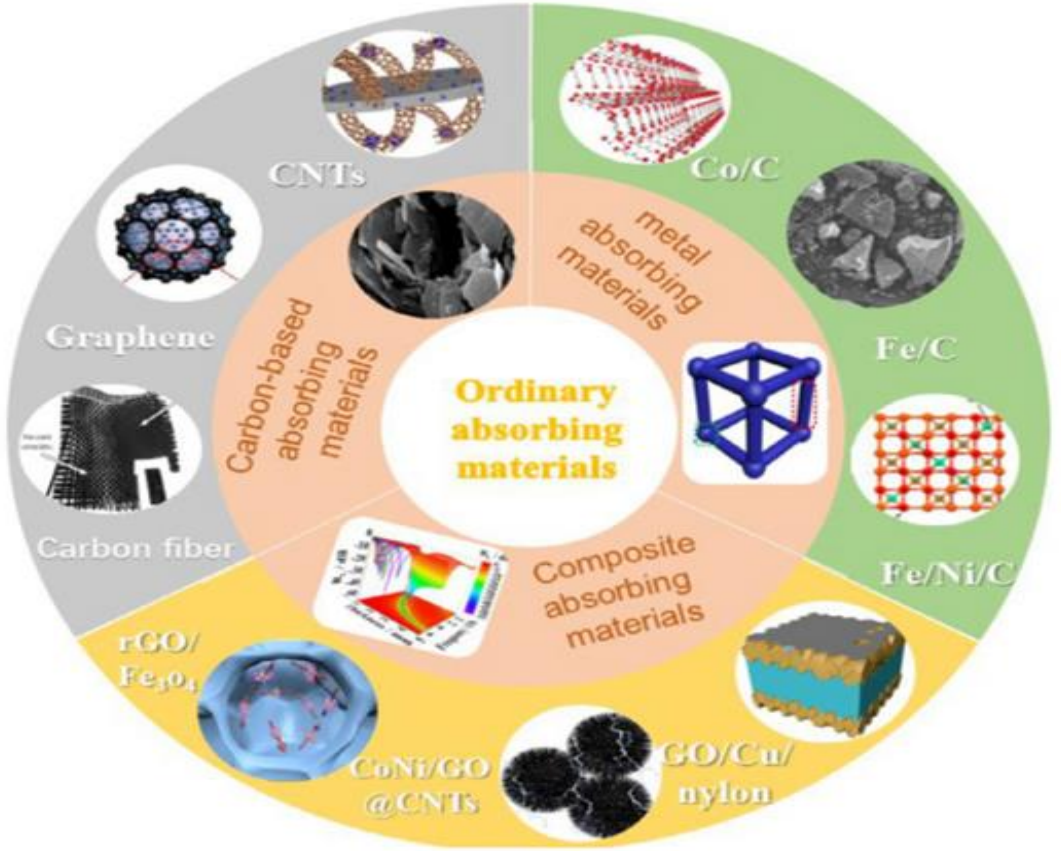
Graphene Material with a metal coating

The research aims to design and prepare electromagnetic shielding which is a useful and new composite material, and which is useful for different types of electronic equipment protection.



Literary study results

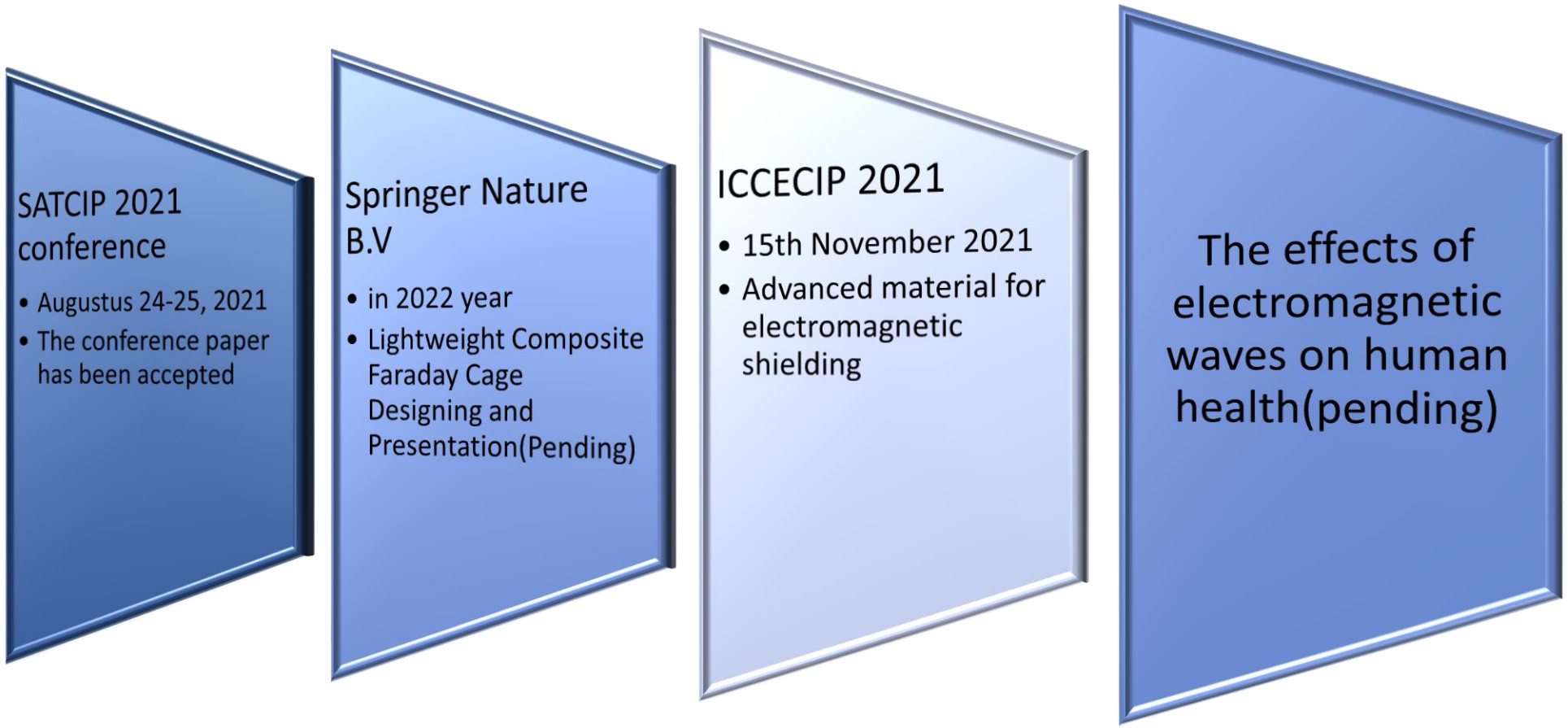
The absorbing materials classified by the literature can show the variety of the materials and the composites



Literary study results

Type	EMF	
	Source	The range of the frequency
Intermediate frequency	Anti-theft applications in stores Card Reader Monitors Hands-free key control devices Metal detector	100 KHz≥ f >300 Hz
Static	Video Electrolysis in manufacturing Natural MRI	0 Hz
Radiofrequency	Microwave oven Television Mobile phone Radar MR portable radio Transceiver	300 GHz≥ f > 100 KHz
Low frequency	The electrical engine in the vehicle Powerlines The tramway The train	300≥ f > 0

Publications



Subjects fulfilled

Analysis of Damage Failures for Structural Materials

- Dr Tünde Kovács

Titanium and Titanium alloys

- Dr Péter Pinke

Future Plans

- Literature
- Designing new composite materials for different levels of shielding based on the literature study
- Testing the new composite materials
- Modify the materials
- Final testing and (publish)
- results conclusion

Future Plans

Material testing

- Conductivity of the material
- The material structures.

Design a composite

- Testing the designed
- The effectiveness of the composite against electromagnetic radiation.

thanks for your attention