

# Ultrafast spectroscopy and control of correlated quantum materials

By

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## Abstract

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## Acknowledgements

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## **Chapter Two**

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## **Chapter Three**

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## **Chapter Four**

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## Chapter Five

### Second harmonic generation as a probe of broken mirror symmetry in $1T\text{-TaS}_2$



## **Chapter Six**

### **Light-induced reorientation transition in the antiferromagnetic semiconductor $\text{CaMn}_2\text{Bi}_2$**



## **Chapter Seven**

### **Amplitude-mode electromagnon in the $XXZ$ chain $\text{CuBr}_2$**



## **Chapter Eight**

### **Concluding remarks**





# Bibliography

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