



Entreprises, pour proposer un sujet de thèse soutenue par le dispositif CIFRE, merci de remplir les champs suivants, et d'envoyer le document à : cifre@anrt.asso.fr

*Si vous souhaitez ajouter un descriptif plus détaillé de l'offre à votre annonce,
merci de le joindre accompagné de ce formulaire.*

● **Nom de l'entreprise*** : TDK InvenSense.....
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● **Ville et code postal*** : 69003.....

● **Nom du laboratoire académique partenaire (si déjà connu)** : Creatis.....
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● **Numéro de reconnaissance du laboratoire** : UMR 5220.....

● **Thématique de recherche en une phrase(sans aucun caractère confidentiel) *** :

Miniaturized ultrasonic transducer research and development
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● **Descriptif de la thématique de recherche (sans aucun caractère confidentiel) *** :

Recently, TDK InvenSense developed a new detector based on ultrasonic sensors. Such sensors are designed with Piezoelectric Micro-machined Ultrasonic Transducer (PMUT), which is based on the wafer manufacturing and offer a high flexibility in their design. Initially, this sensor have been developed for fingerprint and the objectives of the project is to extend their utilization in medical ultrasound (US) imaging. To summarize, the apparition of this novel PMUT sensor, showing impressive capacity in terms of element number, design flexibility and market impact, have to be further developed, tested and exposed to new application. The current array has to be optimized depending on the targeting application, the acquisition pipeline must be improved to save temporal US signal for each acquisition and at various moment.

The main objective of the PhD project is to evaluate feasibilities of the new applications based on the miniaturized ultrasonic transducer technology. The PhD candidate will conduct literature review, work with MEMS transducers, and develop optimal ultrasound imaging strategy. During the program, the PhD candidate will be in a multidisciplinary research and development environment with exposure to industrial perspectives.

● **Descriptif du poste*** : PhD student
.....
.....

● **Date de recrutement*** : dès que possible

● **Adresse e-mail à laquelle le candidat doit envoyer sa candidature*** :

francois.varray@creatis.insa-lyon.fr

*champs obligatoires

NOUVEAU : Si vous souhaitez que votre offre soit également diffusée gratuitement sur EURAXESS,
veuillez compléter le formulaire ci-dessous en anglais

EURAXESS Jobs (<http://ec.europa.eu/euraxess/index.cfm/jobs/index>) est le site officiel de la
Commission européenne pour l'ensemble des offres de postes de scientifiques en Europe.

Les offres postées sur EURAXESS Jobs sont aussi visibles sur le site de Nature Job, grâce à un partenariat entre ces deux structures. La référence à la Cifre est mentionnée dans le texte mais aussi par le logo Cifre en tête d'offre.

• **Name of the company ***: TDK InvenSense

• **City and zip code ***: 69003

• **Name of the partner academic laboratory (so already known)**: Creatis.....

• **Code of the laboratory**: UMR 5220

• **Title of research theme (without any confidential character) ***:

Miniaturized ultrasonic transducer research and development

• **Description of the theme of research (without any confidential character) ***:

Recently, TDK InvenSense developed a new detector based on ultrasonic sensors. Such sensors are designed with Piezoelectric Micro-machined Ultrasonic Transducer (PMUT), which is based on the wafer manufacturing and offer a high flexibility in their design. Initially, this sensor have been developed for fingerprint and the objectives of the project is to extend their utilization in medical ultrasound (US) imaging. To summarize, the apparition of this novel PMUT sensor, showing impressive capacity in terms of element number, design flexibility and market impact, have to be further developed, tested and exposed to new application. The current array has to be optimized depending on the targeting application, the acquisition pipeline must be improved to save temporal US signal for each acquisition and at various moment.

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• **Description of job ***: PhD Student.....

• **Main Research Field ***:

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|--|--|--|
| <input type="checkbox"/> Agricultural sciences | <input type="checkbox"/> Economics | <input type="checkbox"/> Language sciences |
| <input type="checkbox"/> Anthropology | <input type="checkbox"/> Educational sciences | <input type="checkbox"/> Literature |
| <input type="checkbox"/> Architecture | <input type="checkbox"/> Engineering | <input type="checkbox"/> Mathematics |
| <input type="checkbox"/> Arts | <input type="checkbox"/> Environmental science | <input checked="" type="checkbox"/> Medical Sciences |
| <input type="checkbox"/> Astronomy | <input type="checkbox"/> Ethics in health sciences | <input type="checkbox"/> Neurosciences |
| <input type="checkbox"/> Biological sciences | <input type="checkbox"/> Ethics in natural sciences | <input type="checkbox"/> Pharmacological sciences |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> Ethics in physical sciences | <input type="checkbox"/> Philosophy |
| <input type="checkbox"/> Communication sciences | <input type="checkbox"/> Ethics in social sciences | <input type="checkbox"/> Physics |
| <input checked="" type="checkbox"/> Computer science | <input type="checkbox"/> Geography | <input type="checkbox"/> Political sciences |
| <input type="checkbox"/> Criminology | <input type="checkbox"/> History | <input type="checkbox"/> Psychological sciences |
| <input type="checkbox"/> Cultural studies | <input type="checkbox"/> Information science | <input type="checkbox"/> Religious sciences |
| <input type="checkbox"/> Demography | <input type="checkbox"/> Juridical sciences | <input type="checkbox"/> Sociology |

• Technology

Other

- **Function ***: PhD Student.....
- **Research Profile***: student specialized in signal/image processing, ultrasound imaging competences is a plus, experimentation are planned during the project.....
- **Date of recruitment ***: as soon as possible
- **E-mail address to which the candidate has to send his candidacy**

francois.varray@creatis.insa-lyon.fr